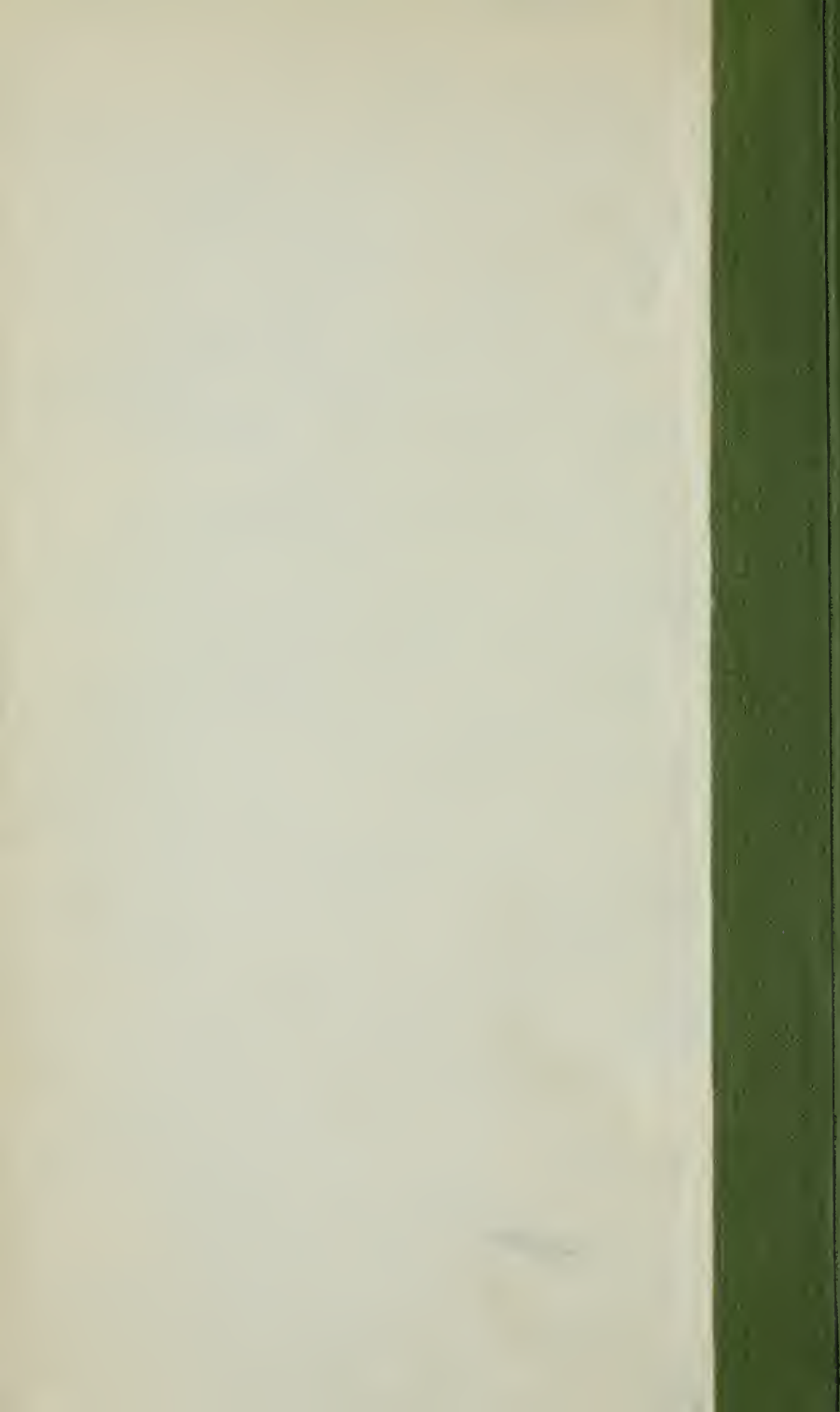
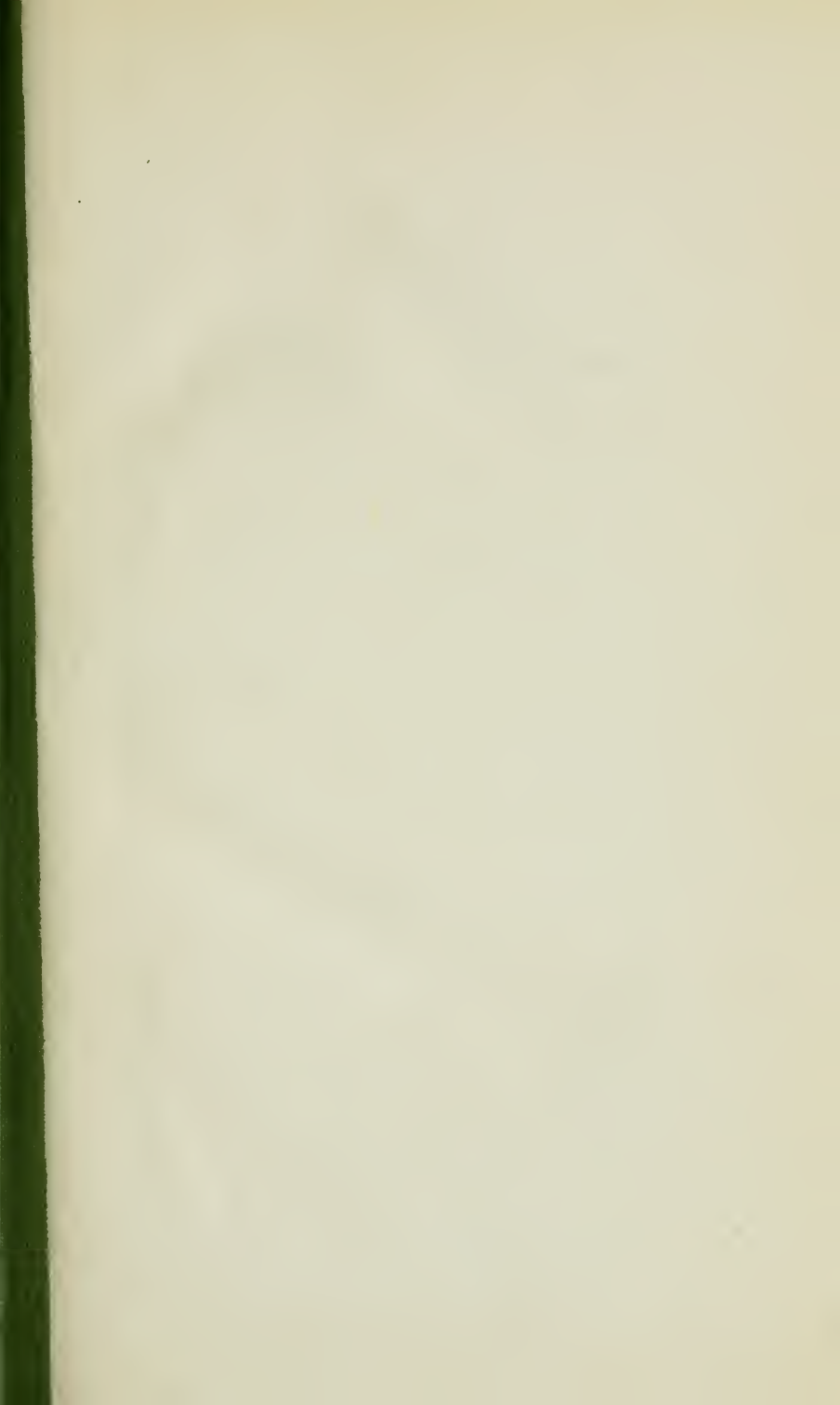
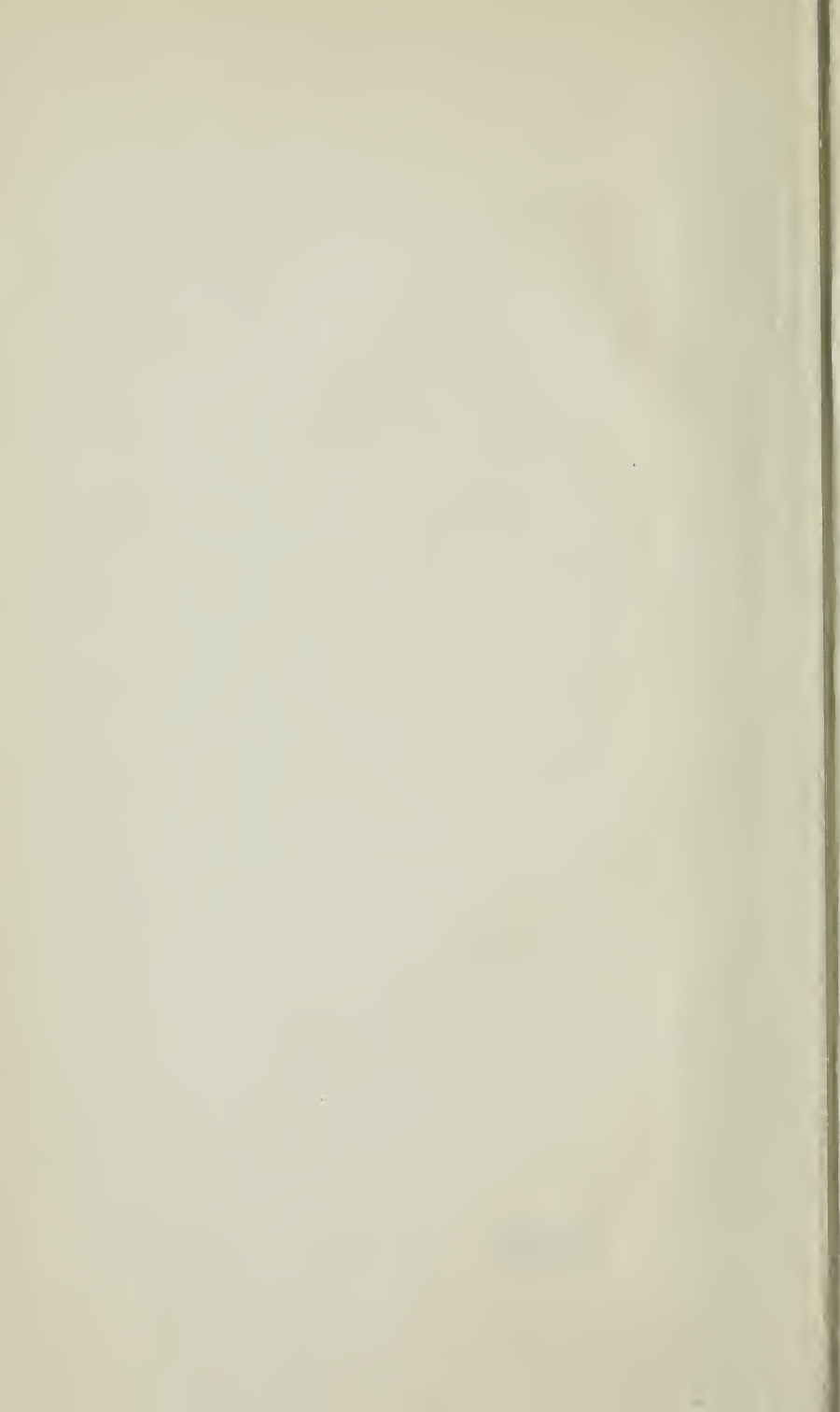


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LONDON MEDICAL GAZETTE.

Lectures.

CONTRIBUTIONS TO MICROSCOPICAL MORBID ANATOMY,

*Selected and Translated from the German
Work of*

DR. JULIUS VOGEL, of Göttingen,
Entitled "Erläuterungstafeln zur pathologischen
Histologie."

By W. S. KIRKES, M.R.C.S.L. &c.

VOGEL's work, the translation of portions of which is here undertaken, consists of a series of plates, with accompanying descriptions, illustrative of the microscopic appearances presented by those diseased products of which the tissues of the human body are most liable to become the seat.* This work cannot be regarded as a complete systematic treatise on morbid anatomy; it comprises many subjects which possess no general interest to the English practitioner: therefore the object in the following contributions will be simply to make selections (without particular order or method of arrangement) of such portions as seem most adapted to render service to the study of microscopic morbid anatomy in England—a branch of pathology which is daily growing in importance.

Cases of granular disease of the kidneys, with microscopic examination of the urine during life, and of the tissue of the kidneys after death.

The following case belongs to a class of inflammatory affections of the kidney which are usually overlooked, because they present no well-marked local symptoms in their train; for this reason the history of the disease in the present case is given from the date at which the patient first presented himself for treatment.

Adam L., a labourer in Munich, aged 44, of athletic frame, but of a doughy, pasty aspect, and almost as deficient in intellectual faculties as a complete idiot, was admitted into the Munich Hospital, Feb. 15th, 1840. His body was universally cedematous, and had been so, according to his own statement, for the last four or five days. The swellings appeared without preceding indisposition, especially without rheumatic pains in the limbs; and, on the whole, he had never been ill before the present time; but it was impossible to obtain any clear history, because the patient, owing to his mental especially loud below the sternum. Vomit-

imbecility, could give no satisfactory information concerning his previous condition. With regard to the cause of his attack he could offer nothing definite; he supposed, however, it might be the result of cold.

The anasarca was very extensive over the whole body; the scrotum, penis, and face, were especially much swollen. The patient had occasional cough, without expectoration, and complained of a slight pricking pain in his chest. Respiratory murmur was diminished over the whole anterior part of the chest; no rhonchus. Resonance on percussion was impaired. The sounds of the heart were somewhat obscure, which was considered to be due to the existence of hydrops pericardii. The impulse of the organ, on the contrary, was strong and forcible, such as it is in commencing concentric hypertrophy; but it was not perceived over a larger extent than natural. The abdomen was free from pain even on considerable pressure, but the patient winced when deep pressure was made over either lumbar region, especially over the right. He occasionally vomited a greenish fluid, tinged with bile. His pulse indicated hardly any trace of febrile excitement. His urine, passed in abundance, was of natural colour, and contained a large quantity of albumen. It had a decided acid reaction, was of a pale yellow colour, somewhat turbid, and deposited a yellowish brown, not very abundant, sediment. A quantitative analysis of it gave, in 1000 parts—

Albumen (dried at 212° F.)	8.4
Fixed salts	5.7
Urea	11.5
Solid residue	13.2
Water and substances volatile at 212° F.	961.2

1000.0

The treatment consisted in the use of emollient remedies, the application of a cataplasm to the abdomen, and local abstraction of blood by cupping over the loins. On the following days the vomiting and diarrhoea subsided, but the pulse became stronger and more febrile. The patient complained of headache, and the pain still remained in the lumbar regions. The same treatment was continued; the application of cupping-glasses was from time to time repeated. On the 26th of February the man complained of violent headache; there was considerable fever, his pulse became full and hard, and he had bloody frothy expectoration. There was diminished respiratory murmur in the left lung, but no rhonchus; in the right lung respiratory murmur was natural. The heart's sounds were heard on the right side of the chest, and were

* These plates were intended to have especial reference to a "Manual of Pathological Anatomy," which Vogel stated he was about to publish as one of the volumes of the new edition of Semmerring's Anatomy, but which has not as yet made its appearance.

ing had again returned. The urine was of a blood-red colour; it presented under the microscope a few blood corpuscles (no doubt from the kidneys). There was no sediment; it had an acid reaction; 1000 parts contained 8·4 parts of albumen, including blood corpuscles (dried at 212° F.)

The same treatment was continued, an emulsion was administered internally, and venesection to six ounces was performed. During the following days, under this plan of internal treatment, and by another cupping over the loins, the feverish symptoms subsided, the pulse became quieter, and the oedema of the face diminished. The urine became turbid, and deposited a brownish sediment, which, on a microscopic examination, was found to consist of decomposed blood. On the 3d of March the urine was again and more accurately analysed; it was clear, of a deep orange tint, and had a reddish-brown sediment. On a microscopic examination this sediment was found to consist of crystals of uric acid, of a few blood corpuscles, some small bits of clotted blood, and of tessellated epithelium. The urine itself had an acid reaction. Its specific gravity was 1009·8. On analysis, the proportional quantities of albumen and urea were accurately determined; in 1000 parts were found—

Albumen (including blood)	2·5
Urea	10·9

During the following week the man's general condition became tolerably good; he had no fever, and his urine contained but little blood. From the 11th of March, the anasarca, affecting especially the upper half of the body, again increased, together with very considerable dyspnœa. The urine became turbid, and of a blood red colour, on the 14th; it contained a sediment of uric acid, many scattered blood corpuscles, and some small clots of blood; 1000 parts contained two parts of dried albumen, with blood. Diuretics were now administered (infusion of digitalis with acetate of potash). The urine on the 23d of March was clear, of a pale yellow colour, and had a brown sediment, which consisted of blood corpuscles, small clots of blood, and crystals of uric acid. The urine contained albumen, which coagulated on boiling; but it had only a very slight brownish red colour, consequently it contained but little blood.

An abundant secretion of urine was induced by the diuretics, yet the oedematous swellings rather increased than decreased. The quantity of albumen in the urine was very trifling. On the 5th of April the urine was clear, yet somewhat opalescent, with a very slight brown sediment; it still contained only a small quantity of albumen. On the 9th and 10th it again became bloody.

During the following weeks the patient's health varied from one extreme to another; sometimes he had considerable fever; at other times there was not a trace of febrile excitement indicated by his pulse, and his appetite became good. His urine was sometimes red, containing blood corpuscles, sometimes clear, and with very little albumen. (On the 11th of May it contained in 1000 parts only 0·75 of albumen, with a few blood corpuscles and clots.) Nevertheless the anasarca progressively increased, as also the dyspnœa, and the man died asphyxiated on the 28th of May.

Autopsy.—In the cavity of the chest there was a very large quantity of yellowish serum; the sac of the right pleura especially was filled with it, and the right lung, in consequence, was pushed upwards and inwards, and compressed so as hardly to equal "a fist and a half" in size. Its substance was compact; it contained no air, and very little blood. In the sac of the left pleura there was a somewhat less quantity of fluid, though much more than natural. The left lung was oedematous above; the lower lobes were loaded with blood. There was much serum in the sac of the pericardium. The heart was greatly enlarged, and its walls hypertrophied; those of the left ventricle were from three-quarters of an inch to an inch in thickness, those of the right from two to three lines. The cavities of both ventricles were also dilated. In the cavity of the peritoneum there was a very large quantity of yellowish serum. The liver was small; under the microscope its cells appeared filled with granular deposits of bile pigment of a deep yellow colour. The other abdominal organs were healthy. The stomach contained a fibroid tumor, about the size and shape of an almond. The left kidney was covered on its surface with a gelatinous-looking exudation (serum infiltrated into the cellular texture of the capsule.) It had two ureters, which were united into one below. Its parenchyma was altered; the cortical substance was hard, firm, slightly granulated, of a whitish colour, and very clearly distinguishable from the bright red medullary substance bordering upon it. A more accurate examination gave the following results:—The cortical substance appeared on a section from two to three and four lines in thickness, yellowish-white, very firm and brawny (speckig), and was marked with scattered red points and lines (blood-vessels.) Its parenchyma appeared under the microscope very bloodless, though unaltered in structure. The corpora Malpighiana were distinct, but their vessels were much more deficient in blood than when in their natural condition. The tubuli uriniferi were indistinct, and did not admit of being separated from each other so readily as in a healthy

kidney. The whole tissue seemed to be thickened by an uniform deposit of an amorphous fibrinous exudation. There was no trace of further development or organization in this product of inflammation; no granule-cells or pus corpuscles. The medullary substance was of a bright red colour, also tough and firm. Under the microscope its vessels appeared filled with fluid blood. The uriniferous tubules were very distinct, and were formed of a delicate pellucid membrane, with internal nucleated epithelium cells (fig. 1). In some places these tubules contained in their interior dark globular heaps of granules (granule cells, fig. 1, *b*); in other places there were situated in them brownish-yellow granules, evidently the remains of decomposed blood (fig. 1, *a**). Beyond this

FIG. 1.

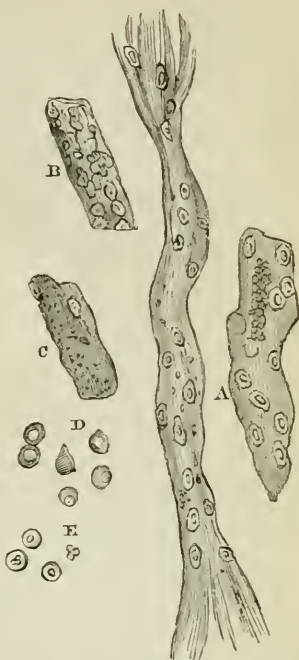


there was nothing abnormal seen, except that here and there some amorphous fibrinous exudation was deposited between the tubules. The right kidney was small; its parenchyma presented the same change as that of the left—a deposit of fibrinous exudation in consequence of chronic inflammation.

There is a class of cases in which the urine—sometimes bloody, sometimes of its natural colour, but always turbid at the commencement—when allowed to remain at rest lets fall a yellowish white sediment, whereby it becomes clear and transparent. This sediment is not mucous; on agitation it readily mixes with the urine, whereby this latter is rendered turbid for the time, but becomes clear again as soon as the precipitate is again deposited. The urine sometimes contains a large quantity of albumen, which coagulates on boiling; at other times it contains but little, rarely none at all. Under the microscope this sediment appears to consist of colourless coagula, of a cylindrical form (fig. 2), the diameter and shape of which correspond exactly to the tubuli uriniferi of the kidneys (vide fig. 1). Like the uriniferous tubules of healthy kidneys, they contain inclosed within them portions of epithelium, and now and then rusty coloured granules (altered blood, exactly as in fig. 1, *a*.) These coagula readily dissolve in caustic potash, with difficulty in acetic acid;

but by this latter reagent the epithelial cells contained within the coagula are rendered very distinct.

FIG. 2.



There seems hardly a doubt that these cylindrical masses are fibrinous coagula, which are formed in the uriniferous tubes, and that during their coagulation portions of the epithelium of these tubes become entangled within them, and the whole substance is then discharged together with the urine from which the several masses are afterwards precipitated, still preserving the shape of the canals in which they were formed. They vary in length, often measuring several lines: their transverse diameter corresponds with that of the tubules, varying from $\frac{1}{60}$ to $\frac{1}{200}$ of a line. Moreover, there are sometimes a large quantity of pus corpuscles present in these cylindrical masses; probably in those cases in which the inflammation has extended to the pelvis of the kidneys and to the ureters. I have observed the above phenomena in about ten patients; on closer examination symptoms of a venal affection were present in all the cases, especially pain on deep pressure over the region of the kidneys: the disturbance of the general health was always very trifling, except in two cases in which specimens of the urine were sent to me for examination by medical men from a distance. One of these two cases terminated fatally

* The granules are here represented dark; their colour in the original drawing corresponds with the description given in the text.

probably owing to some other complications, but unfortunately I was not able to obtain any satisfactory information as to the result of the post-mortem examination. In another fatal case in which I had recently an opportunity of examining the body, the kidneys presented an abundant granular deposit in the cortical substance,

Fig. 2, A, B, and C, illustrate coagula of the kind described above, from sediments in the urine of different persons; they are represented as magnified 220 times. D, pus corpuscles, existing in the urine at the same time with the coagula. E, the same pus corpuscles acted on by acetic acid, whereby their characteristic nuclei are shewn.

Microscopic examination of some atheromatous deposits and concretions in the aorta.

An old man, aged 84, died from a perforating ulcer of the stomach. The arch of the aorta presented between its coats some scales of ossific matter, and besides, several deposits of a greasy, semi-fluid, yellowish white (atheromatous) substance. These atheromatous masses when examined under the microscope (fig. 3) were found to consist of crystals of cholesterine—colourless rhomboid plates of the well-known form; interposed between these crystals were irregular granular-amorphous masses, in all probability composed of fat; they were insoluble in water, but appeared to be partly dissolved by alcohol and ether. These atheromatous masses seemed to be deposited between the internal and elastic* coats of the artery; the largest mass of deposit had a diameter equal to that of a silver groschen; there were besides several smaller masses about the size of lentils. In some places these deposits were situated on the internal surface of the aorta, coating the lining membrane with a thin layer. In other places the layers of the elastic coat were applied upon the inner surface of the deposit, in which latter case the external surface of the elastic coat presented small holes or depressions filled with a yellowish substance, composed of crystals of cholesterine, margarine granules, and drops of elaine. The middle coat of the artery, which bounded the deposit externally, was composed of its usual fibrous structure, although in its substance were also found deposited granules of fat and a few plates of cholesterine. The external coat of the artery contained many granules of fat. The atheromatous deposit thus extended through the entire thickness of the middle coat of the artery. Besides these soft atheromatous deposits, there were always found within the middle coat of the aorta some scales of ossific mat-

ter, which were as compact and hard as small pieces of bone itself. These bony scales were so firmly connected with the fibres composing the middle coat of the artery that they could not by any means be separated from them, and thus be examined by themselves. The thinnest of the plates, when examined under the microscope, presented not a trace of bone corpuscle throughout: they appeared to be entirely composed of semi-transparent, granular-crystalline particles. The fibres of the arterial coat were continued into the substance of these bony plates, and appeared to constitute the basis of their texture. On the addition of nitric acid to the plates a brisk effervescence ensued, and eventually the entire substance was completely dissolved; and there was not a trace of bone or cartilage-corpuscle to be found in the solution; in short, there was no heterogeneous substance at all between the normal fibres of the elastic tissue. Consequently these bone-like plates were no new formation of bone substance, but a mere concretion—a deposit of calcareous matter in the middle coat of the aorta.

Fig. 3 illustrates a portion of the atheromatous deposit, magnified 220 diams.:—*a, a*, the plate-like crystals of cholesterine; *b, b*, the granular amorphous substance situated between the crystals, consisting in all probability of fat.

FIG. 3.



Microscopic examination of a concretion found in the heart of a young man who died of typhus.

The heart in this case was very flabby, soft, and pale. Under the microscope the fasciculi of muscular fibres entering into its composition appeared quite healthy; their transverse striae were distinct. There was no abnormal deposit between the fasciculi. They were rendered pale and transparent by ammonia; the same effect was produced by acetic acid, but, at the same time, nume-

* *Ringfaserhaut*, the membrane or coat composed of circular fibres.

rous round, or oval and elongated nuclei were rendered visible. Below the semilunar valves of the aorta was found an ossification about the size of a plum-stone. Viewed under the microscope this ossified portion was found to be made up of crystalline particles, which were completely soluble without effervescence in nitric acid—phosphate of lime. When dissolved away, the healthy tissue of the wall of the heart remained behind.

Fig. 4 illustrates a portion of this concretion, magnified 220 diams. : *a, a*, crystalline particles which were deposited within the organic textures composing the substance of the wall of the heart. *b, b*, separate crystals of the same, without any of the organic tissue.

FIG. 4.



Fat in the coagulum of an obliterated vein.

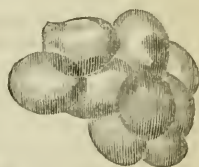
A woman died with a medullary fungus of the uterus and of the inguinal glands of the right side. The medullary mass, which was very much softened, was made up of the usual cells, with drops and granules of fat intermixed. The right femoral vein was obliterated. On laying it open it appeared completely filled with a coagulum, which in some parts was of a deep blackish red colour, in others of a greyish white tint. At some places this coagulum was quite loose in the vein, at others it was firmly adherent to the internal coat of the vessel, and was continued uninterruptedly into every lateral branch of the vein. Where the coagulum was loosely connected with the inner coat of the vein, and towards the middle of the vessel, it appeared under the microscope as an amorphous fibrinous clot entangling blood-corpuscles within it; but on its peripheral surface, even to the naked eye, it presented the appearance of well-formed layers applied one upon the other, so as to constitute a kind of false membrane,

which readily admitted of being separated into strata; the last or outermost of these strata was firmly connected to the internal coat of the vein, which latter was here and there reddened by ecchymoses. In this portion of the coagulum the microscope distinctly showed commencing organization, consisting in part of primary cells about to be transformed into fibro-cellular tissue, and in part of fully formed fasciculi of fibro-cellular tissue. Moreover, at circumscribed spots, both in the membranous layers, as also in the amorphous coagulum, there were deposited some yellowish, crumbling, cheesy-looking masses, readily distinguishable by the naked eye, and which on a microscopic examination exactly resembled aggregated drops of fat.

Fatty degeneration of the muscular substance of the heart.

The heart, in this case, was taken from a very aged woman, who died of "marasmus senilis;" it was covered, especially on its right half, with a layer of fat from two to three lines in thickness, evidently formed at the expense of the muscular substance of the heart, which it had displaced, so that this latter was scarcely a line in thickness. This adipose substance was made up of regular fat-cells (fig. 5)*, and was traversed by a few

FIG. 5.



blood-vessels; the individual cells were from $\frac{1}{2}$ to $\frac{1}{3}$ of a line in diameter, the majority being about $\frac{1}{3}$. They contained no crystalline deposits of margarine, which were very numerous in other parts of the adipose tissue in this body, especially in the fat of the omentum. The layer of muscular substance of the heart was composed of the usual primitive fasciculi, with their indistinct striæ (fig. 6)†. The transverse diameter of

FIG. 6.



these fasciculi was from $\frac{1}{50}$ to $\frac{1}{150}$ of a line, the average being about $\frac{1}{100}$.

* Magnified 220 diameters.

† Magnified 220 diameters.

Fig. 7* illustrates the mode in which the adipose and muscular tissues were arranged

FIG. 7.



together at their points of mutual contact. The primitive muscular fibres were united together into parallel bundles, which bundles, towards the interior, where the muscular substance predominated, lay immediately in contact with each other (*a a*); but towards the exterior these bundles were more apart from each other, and portions of adipose tissue were situated between them (*b b*). Lastly, still more externally, the bundles of muscular fibres terminated abruptly, and a continuous layer of adipose tissue was formed over them.

Microscopic examination of an opaque crystalline lens.

The lens, in this case, was extracted from the right eye of an old man. The cataract was complete, the lens being turbid, perfectly opaque, and of a reddish or brownish-yellow colour. Portions from the surface of the lens, when examined under the microscope, presented the remains of the prismatic fibres peculiar to the lens, which were clear, transparent, and perfectly normal in all other respects. Scattered between these fibres was a considerable number of small very dark granules, possessing a distinct molecular movement†: they were probably black pigment granules which were accidentally adherent to the fibres.

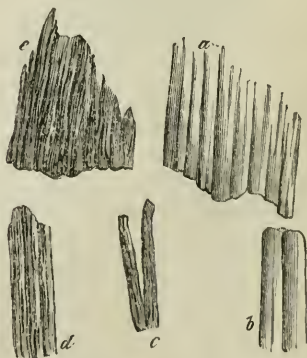
In order to find out the seat of the opacity, thin slices were made of the substance of the lens with a double knife; these sections were made parallel with the axis of the lens, in the direction from before backwards. Under the microscope, on these sections were seen the prisms of the peripheral strata of the lens, perfectly clear and colourless (*a* and *b*, fig. 8); whereas towards the middle of the lens these prisms became more and more dark. They had a granular appearance, and presented a number of dark longitudinal striae, arranged, for the most part, in a parallel direction (*c* and *e*, fig. 8). From this it appears that the prismatic fibres of the substance of the lens had themselves become darkened and opaque. There were seen all the intermediate stages between

the perfectly clear and transparent fibres at the margin of the lens, and the completely turbid and opaque ones in the centre. When treated with the acetic acid, the fibres were not in reality altered; the dark opaque ones, however, after the long-continued influence of the acid, manifestly became clearer, though the turbidity did not entirely disappear. With ammonia, also, the opaque fibres became clearer, yet without the opacity entirely disappearing.

A microscopic examination of many other opaque lenses, which were extracted and examined immediately after the operation, gave exactly the same results. The prismatic fibres themselves in the substance of the lens invariably appeared turbid; there was never detected any foreign opaque substance deposited between the fibres. As a rule, the turbidity of the different fibres was extended equally over the greater part of one and the same fibre, so far as the microscope could trace it, yet the degree of turbidity varied considerably, so that there were constantly observed all the intermediate degrees between the perfectly transparent and the perfectly opaque fibres. In all cases the opacity was greatest towards the centre, and gradually diminished towards the circumference.

Fig. 8*: *a* illustrates some fibres from the circumference of an opaque lens; they

FIG. 8.



are almost perfectly clear and transparent: *b*, fibres in almost a similar condition, except that one of them presents on one margin a narrow dark line: *c* and *d*, fibres with turbidity more evident, though still not complete; the turbid parts appear linear, and have a direction parallel with the margin of the fibres: *e*, a very dark and turbid portion from the centre of a lens, almost completely opaque, so that the individual fibres are undistinguishable†.

* Magnified 220 diameters.

† Subphosphate of lime in large quantity has been found in an opaque lens of this description. —ED. GAZ.

* Magnified 67 diameters. A line is equal to .088 inch.

LUMLEIAN LECTURES,

Delivered at the Royal College of Physicians.

By SIR GEORGE LEFEVRE, M.D. &c.

Morbid Poisons.—Scarlatina.

It is often reproached to the art of medicine that it does not keep pace with other arts, nor even with that of surgery, in the progress of improvement. With respect to the latter part of the accusation, it may be observed, that between medicine and surgery the line of demarcation is but faintly drawn, and that, as far as pathology is concerned, they are one and indivisible.

It must be borne in mind that the mechanical genius of the age we live in has lent that helping-hand to surgery which a variety of evident causes has not allowed medicine to grasp.

There is no lack of talent, or zeal, or perseverance, in the body medical, but where demonstrative application of power sheds its lustre on the one, it avails the other in a very inferior degree. If the father of medicine asserted that art is long, he also insisted upon the shortness of life, of which the longest is not sufficient to take in its grasp the various ills which flesh is heir to. The same division of labour, therefore, which was so ably pointed out by Adam Smith, as facilitating and promoting the progress of other sciences, is equally applicable to the medical art; and it is by the joint influence of two operating powers that the problem is most surely and safely solved.

If there be any discord without, there is harmony within the circle, which, however it may dilate and extend itself in space, maintains the same form in its widest as in its narrowest boundary.

It is not the least curious phenomenon in the progress of disease, that cause and effect change their relationship, so that what was secondary becomes primary in its operating influence. Thus, oedema of the glottis, which is a secondary affection in a general sense, becomes a primary one, as regards the functions of some organs, which would be threatened with annihilation but for the timely aid of the surgeon's scalpel.

This state of things implies no division in the science of medicine; it merely proves that the work will be more easily accomplished by the united efforts of the two sister arts.

If a disease were to be selected which, more than any other, would seem to justify the opprobrium which is cast upon the art of medicine, a better choice could not be made by the censorious than the scarlet

fever, in the knowledge and treatment of which we have made but too little progress.

It will not be my object, in treating of the subject which I have selected for the present course of lectures, to enter into minute details of such matters as the audience which I have the honour of addressing must be perfectly conversant with; nor is it my intention to quote a numerous list of authors who have written upon scarlatina: but it will be rather my aim to touch upon such points as allow of difference of opinion as regards their causes and consequences. It is, indeed, rather in elucidation of the influence of morbid poisons upon the system that I enlist this disease into my service, as fulfilling every point in an illustrative sense.

As regards its mode of attack, the regularity of its march, or the eccentricity of its movements, the variety of forms and shapes which it assumes, and the ravages which it makes upon the animal structure, scarlatina does fulfil all that can be desired of a single specimen to illustrate the effects of a numerous group of morbid poisons.

There is not, in the whole catalogue of diseases, a more fearful or anxious malady than the one in question; and although it has been chiefly in high northern latitudes that I have been made acquainted with it, where it sometimes decimates villages, sparing neither age nor sex, still, I find that in this more temperate climate it is not much less fearful in its ravages. Dr. Currie admitted that even in his day it was becoming more general all over Europe, and that no Jenner had arisen to propose a sovereign antidote.

I shall not detain you by defining its symptoms, which, as you know, vary so much in different instances that we can hardly ascribe them to the same affection. "*Febris modo descripta sæpe quidem mortifera est sæpius vacat periculo; et interdum adeo mitis est ut haud ultra paucas horas duret et forsitan inobservata præteriret, nisi brevis quidam languor et nonnullus cutis rubor et alii in eadem domo hoc morbo impliciti.*"*

It has, no doubt, occurred to many practitioners not to recognise the malady they have been summoned to treat, till subsequent symptoms have constituted its real nature. The fever has been so slight as to have excited no alarm; the sore-throat has been treated by some domestic gargle, and the physician has probably not seen his patient whilst any efflorescence has been discernible. It is only from the long-protracted convalescence—the patient not recovering upon the subsidence of the local affection of the throat—that any assistance has been de-

* Heberden.

manded from the faculty ; and it requires some cross-questioning to enable the practitioner to convince himself that there has been a rash. It would still, perhaps, never have been recognised as such but from the circumstance of some other member of the family being seized with symptoms much less equivocal. The more lamentable is it, that this slight and hardly recognizable malady shall communicate a mortal species to a second, which murderous form shall again appear in a third almost under as slight a shape as the first.

It is not always, however, that the slightest forms make the most rapid progress to recovery. The secondary fever compensates for the mildness of the primary, and the convalescence is often more protracted, the prostration of the vital forces greater, than when there has been from the commencement all the high action attendant upon an unequivocal exanthem.

Species.—Various as the forms may be under which this disease presents itself to our notice, they are all modifications of the influence of one specific morbid poison in the animal œconomy. This is proved by the circumstance of their being convertible into each other ; thus the mild may generate the simple, and this, again, the malignant form. Proofs of their identity are afforded in the circumstances that, in all, the epidermis or epithelium are first attacked ; in all, there is precursory fever ; in all, the cellular membrane is liable to inflammation and infiltration ; all are propagated by contagion.

These matters will allow of a great deal of discussion, and the problems will be solved very differently, as men's views themselves differ upon contested theories.

There is much room for conjecture as regards the communication of the disorder from one to the other, and the conversion of the species. It is certain that the contagious influence cannot be restricted to any thing like the period which Heberden prescribed : —“*Memini tamen sanam puellam accessisse ad puerum hoc morbo implicatum quæ quinto post die cæpit ipsa ægrotare et fieri potest ut idem ubique spatium intercedat inter contagionem et febris initium.*” If we are asked, however—and indeed the question often is put to us—as to the period of incubation, what more positive evidence can we produce that such an experimental fact as the preceding—a person in health, where no latent seeds can be supposed to be dormant, approaches a patient under eruptive disease, which, on the fifth day, manifests its reproduction in the formerly sound individual.

Still, Dr. Billing informs us that he has known the disease pass through all its phases in seventy-two hours, and desquamation take place on the fifth day.

In many situations, where this malady

seems to be of endemic origin, there is no recognisable period of limit to its attacks. When we find several members of a family falling ill at different periods, it is usual to suppose that they have taken the disease of each other in succession ; but this is not necessarily implied. It is as rational to presume that those are affected by a new dose of the poison who fall sick at distant periods, seeing that exposure to the contagion when at its height was not necessarily followed by any immediate impression ; or we must come to the conclusion that the poison was shut up in the system, awaiting that combination of circumstances which was necessary for its development, and before the accomplishment of which it could exercise no specific power.

This is not a privilege usurped by this disease alone ; there are manifold examples of the same occurrences. In the venereal disease, between the time of inoculation and the manifestation of the poisonous influence, there is an astounding latitude. John Hunter informs us of cases coming under his own cognizance where local disease has appeared twenty-four hours after the application of the poison ; and others where seven weeks have elapsed before the effect could be recognised. This is a fact illustrative of a simply contagious disease ; but whether contagion or infection be a point in question, it is matter in some shape which is communicated ; it does not affect the argument whether it be in a denser or rarer form.

The greatest difficulty occurs in assigning rational causes for the wide differences which exist in the effects of the same poison upon various constitutions, and the circumstance of one species impinging in one form being reflected off in another ; for we cannot always ascribe the difference of form to local influence, for a child, removed from one spot with the rash upon it, will communicate an aggravated species to those who are not within the pale of the endemic limits. We must remember, however, that this change of type is not peculiar to this poison. It is equally the property of the paludal miasms ; for we find that an intermittent, a remittent, and a continued fever, arise from the operation of one and the same cause. This may be reduced, however, to the law of exceptions, and it will generally be found that like begets like, and that one type prevails in all epidemic maladies. It may hereafter be the triumph of animal chemistry to solve this Gordian knot. The atomic theory, the combination of bodies in definite proportions, may yet be applicable to morbid poisons. It has been asserted that if the virus of the small-pox be diluted with water, and this solution employed for inoculation, a milder kind of disease is generated. It may be fairly argued that condensation or inspis-

sation of the morbid poison of scarlatina, or a mixture of it with other poisons, will be available causes of explanation for these dissimilar effects in many cases.

Anginosa.—Dr. Gregory has tritely observed, that as the simple form requires no assistance from medicine, and the malignant is without the pale of relief, our attention must naturally be concentrated to the consideration of the anginous species. I shall not trespass upon your time with any detail of those minutiae with which you are so well acquainted, but touch upon a point of great importance, and, more than any other, characteristic of this disease. I allude to the elevation of animal temperature. Dr. Currie proved by actual admeasurement that it was greater by two degrees than was found in any other disease; and he states having seen it as high as 112° Fah. As we are all aware of the difference which exists between heat and the sensation of heat, as regards our feelings, it will be well to inquire if as much difference does not exist between caloric artificially applied and the morbid generation of heat in the system itself.

In the natural order of things, we find that animal heat is under the control of the nervous system; it rises or falls *pari passu* with the increased or depressed energies of this controlling power. It maintains its equilibrium when the body is exposed to a furnace temperature, or is surrounded with the icebergs of the Arctic regions. In both instances, a thermometer placed under the tongue indicates that, uninfluenced by external circumstances, it maintains its own standard. In the first instance, the nervous energy will be directed to moderate the excessive external heat by calling to its aid the functions of perspiration and vaporization. In the second, by generating in its own laboratory sufficient to supply that of which it is continually robbed. In both instances it will resist for a time the attacks made upon it from without by concentrating its powers within the citadel. But there is a limit to these operations, there is a period beyond which it cannot proceed; exhaustion will be threatened, and chemical agency will gain the ascendancy over the vital powers. Liebig, the zoochemical professor, reduces the formation of animal heat to chemical causes purely, and maintains that there does not exist in the body any other unknown source of heat besides the mutual chemical action between the elements of the food and the oxygen of the air. Still, the same author confesses that no one will seriously deny the share which the nervous apparatus has in the respiratory process, for no change of condition can occur in the body without the nerves. They are essential to all vital motions; under their influence the viscera produce those compounds which, while they

protect the organism from the action of the oxygen of the atmosphere, give rise to animal heat; and when the nerves cease to perform their functions the whole process of the action of oxygen must assume another form.

In the commencement of this disease there is great nervous excitement, and great elevation of temperature, which latter declines in a ratio with the diminution of the former, whether this be effected by remedial agents, or occur in the natural course of the malady. We find, consequently, that in those very malignant cases where the nervous energy is prostrated by the intense action of the poison, it falls immediately below the natural standard. We have to distinguish between natural and morbid heat, between a power exercised to resist extremes, and one annihilated by its own morbid action. In the one case, the external heat, however excessive, does not penetrate beyond the surface, for the increased perspiration carries off the excess. An artificial heat, as great as the animal temperature of scarlatina, is never applied to the brain as long as this maintains its energy. In the second instance, matters are on a different footing, both as regards the quantity and quality of the heat. Instead of being employed in resisting the influence of artificial heat, the nervous system is occupied with the generation of morbid heat, for it is a morbid production in the elaboration of which the function of perspiration is neglected; so that we have the whole of the caloric operating upon the nervous system.

The brain is primarily and secondarily affected; and, little as we are as yet acquainted with the real essence of heat, yet there is ample proof that such as is the result of fermentation, as we find in the exanthemata, has a different operation from that which is the result of artificial contrivance. The quality, as well as the quantity, must be taken into the account; just as we find a difference in the operation of natural thermal springs and the water of the heated cauldron, so great a difference may there be in the heat generated within the body and that which is applied to it from without. The delirium which is often the result of this increase of temperature has been differently viewed as to its consequences. Heberden expresses himself thus: "Never is there less danger than where so much is anticipated." He alludes to the early appearance of this symptom in scarlatina, which, in most other fevers, manifests itself late, and is a harbinger of ill. We even find that where constant delirium has prevailed, it often leaves no physical trace of its having existed. Dr. Bright alludes to the case of a child, seven years of age, who died of scarlatina after having been in an unceasing state of delirium for the greater

part of three nights and two days. The only appearances afforded in the brain were a little more vascularity than natural, and decidedly less serum, both under the arachnoid and in the ventricles, than is usually observed.

Of the purple form.—Dr. Currie has stated, there is a species of scarlatina to which the name of purpurata ought rather to be given, for the efflorescence is of a purple, not of a scarlet hue, in which, although the throat be deeply and extensively ulcerated, the pain and difficulty of swallowing are comparatively small, for the passage is kept open, and the sensibility of the parts destroyed by the progress of gangrene.

In such cases extreme feebleness and rapidity of the pulse, and great foetor of the breath, appear even in the commencement of the disease. The heat does not rise much above the standard of health; great debility, oppression, head-ache, pain in the back, vomiting, and sometimes purging, accompany its rapid progress; the patient sinks into a low delirium, and expires on the second, third, or fourth day.

It outsteps in rapidity, and it equals in fatality, the purple confluent small-pox. Happily it occurs rarely; I have not seen it more than five or six times in upwards of twenty years of practice."

An important circumstance is added in a note:—

"Three persons in one family were attacked. One child had it in a mild form, another severely, with whom the father slept. He was in his office of business on Friday, and was dead on Monday evening."

Of the disease thus detailed by Dr. Currie, I have met but with one instance in which the whole of this history was carried out. Analogous to it, but somewhat less fatal, and modified perhaps from the effects of climate, the following has been my experience of a malignant form of scarlatina.

A child complains of head-ache and sickness, and desires to go to bed. If there be no suspicion of the nature of the ailment, it is probable that some domestic remedy is administered, which the child immediately vomits, and in doing so complains of its throat. The night is passed without sleep; there is some degree of stupor from the commencement. The day following, or within twenty-four hours from the first complaining, a few spots are observable upon the forehead, the *alæ nasi*, the cheeks, and the inside of the fore-arms. There are seldom any discernible upon the trunk or below the sternum at this period. This eruption is not diffused, but elevated, of the size of a strawberry seed, red at the apex, with a broad livid base. It has the local character of measles, although all the constitutional

symptoms are wanting. There is no catarrh, no cough, no coryza, but there is a degree of dyspnoea: there is an effort in the performance of the respiratory process.

The eye has a peculiar bright lustre; the pupil is dilated, and the little sufferer—for it is chiefly in children that I have seen this affection—has an anxious look; it seems conscious of its fate, and looks up for relief. I have not noticed strabismus nor any inordinate motion of the pupil. Upon inspecting the throat the tonsils are found livid, and particularly in the centre; they are but slightly elongated, and not to that degree which is found in the anginosa. There is congestion in the whole mucous membrane of the palate and fauces; deglutition is difficult, not painful; but there is indisposition on the part of the patient to perform any voluntary act; as soon, however, as fluid has reached the stomach, it is for the most part rejected, and that with very little effort. The tongue presents nothing very striking, but there is reluctance to protrude it. There is nothing indicating any serious affection of the larynx or trachea, no oedema of the glottis—the impeded respiration seems more dependent upon want of power to raise the intercostals; muscular motion is in a great measure paralyzed, and the child sinks down in its bed.

The secretion of the urine is scanty; perhaps altogether suspended. The hands and fingers offer a singular appearance, they are of a purple hue, and the digital extremities very much swollen; the nails perfectly black. The pulse at the commencement may be a little full—it is always hurried—and soon fails in strength, increasing in frequency. There is no well-marked rigor, but the patient complains of cold, and keeps under the bed-clothes. The feet soon lose their warmth, and spots appear upon the calves of the legs, of the nature of those before described. As the disease advances they become more general all over the body. Vomiting is frequent, of which the most distressing symptom seems to be that it compels the patient to raise its head. If diarrhoea occur, it hurries the catastrophe. The sensorium is but little impaired, but it is difficult to make the patient speak; if it does so, its language is coherent. The history of this disease is often terminated in forty-eight hours, perhaps even in less time.

This form, from the local symptoms simulating measles, and the constitutional ones scarlatina, usurps with German practitioners the indefinite title,—Neither one nor the other. Weder das eine noch das andere. If the symptoms are less aggravated than are here described—for it is not universally fatal—should the child rally from the first attack, the serous membranes are more frequently deranged subsequently than the mu-

cous. There is often effusion into the pericardium, thorax, and the peritoneum. Anasarca is a constant sequela. In some cases effusion takes place into the ventricles of the brain; this may be by slow degrees, constituting hydrocephalus, or it may be very sudden and at a moment when the patient seemed approaching to convalescence.

When the desquamation takes place, which is not for weeks after the commencement of the attack, the skin of the arms comes off like a leather glove. The fingers are excessively sensitive for a long time afterwards, the nails and hair fall off. I have not known the glandular system affected, as in the scarlatina anginosa, nor are the eyes, ears, or fauces, subject to subsequent inflammation. The kidneys are a long time before they regain their normal action; I have seen many cases of this spurious but malignant form. Dissection reveals but little.

Sine eruptione.—This species is probably a misnomer. Dr. Williams states, that the eruption is limited to the mucous membrane of the mouth and fauces, and that the cutaneous exanthem is altogether wanting.

Dr. Tweedie says, that specks are always seen in these parts, which have an erythematic blush.

Dr. Armstrong has stated, that when the disease prevails epidemically, children and even adults some time after exposure now and then die suddenly, from the operation of the contagion without any appearance of efflorescence or sore throat.

In such sudden terminations it is probable that the mucous membrane has not been very closely investigated, the duration of the disease being so short, and the state of the patient so appalling.

It is generally admitted as a species, and one of the most malignant nature.

The epithelium so much resembles the epidermis, that it is called the cuticle of the mucous membrane; it is continuous with the former at the margin of the lips, and as specks are visible upon it, the fever can hardly be said to be *sine eruptione*.

It is singular that there should be a form of measles without its characteristic symptom, catarrh, and that scarlatina should want its eruption. If the evidence of a rash on the external surface be not absolutely necessary to constitute the specific character of scarlatina, neither will it be identified by the appearance of a plentiful cutaneous eruption, for symptoms alone do not constitute disease, and there are many other fevers of a gastric and typhoid character attended by eruptions which simulate the rash of scarlatina.

Dr. Gregory considers that this eruption may be developed under peculiar circumstances, and that it in no respect differs from miasmatic scarlatina. He instances the fol-

lowing." A young man plunged into the Serpentine when heated, and two days afterwards he was covered by a scarlet eruption. He had suffered in the same way once before. I often see true scarlatinal eruption occurring in the secondary fever of smallpox, without any grounds for believing that contagion had operated. It seems as if secondary fever can develop this eruption in the same way as it throws out erysipelas."

Seat of the disease.—The three structures which are particularly implicated in the history of scarlatina are the mucous, the cellular, and the serous; and this for the most part is the order of succession. As regards the two last, they may be considered identical, but it will be convenient to make this division, reserving the term serous for the enveloping reflected membranes. The viscera for the most part escape the ravages of the poison, at least as far as their solid texture is concerned; they may suffer from the morbid contiguity of their envelopes.

As the epidermis is precisely of the same nature as the epithelium, these must be considered identical in the pathological sense which Bichât took of them.

The first fury of the disease is spent upon this secreted membrane of the mucous structure. Then the cellular substance, and often simultaneously with this the reflected membranes, are implicated. It will much simplify our knowledge of the march of the poison if we take a general view of these membranes. We shall better appreciate the apparently complex and manifold lesions and disorganizations, which are the consequences of this malady, by reducing them to affections of continuity of structure.

Mucous membranes.—The extent of the mucous surface is very considerable, for it lines the whole of the alimentary canal and the urinary organs, and, in the female, is distributed to the uterus and fallopian tubes. Bichât, for the sake of simplicity of arrangement, divides it into two portions. The one, entering the mouth, the nose, and the anterior surface of the eye, lines the two first cavities, and is continued from the first into the excretory ducts of the parotid and submaxillary glands, from the second into the sinuses entering the puncta lachrymalia, the lachrymal sac, and nasal duct. It is continued into the pharynx, and furnishes a portion to the Eustachian tube, from whence it passes into the internal ear. It lines the whole of the alimentary canal, and sends off in the duodenum two portions, one to the ductus communis choledochus, cystic, hepatic ducts, and gall bladder; the other to the pancreatic ducts. The whole of the respiratory organs and tubes are lined by one division of the same membrane. The second portion, entering by the urethra, is distri-

buted over the inner surface of the bladder, the ureters, and the pelvis of the kidney, the prostate, the seminal apparatus in the male; the vagina, the uterus, and the fallopian tubes in the female, when it terminates in the peritoneal sac, affording the only instance in the animal œconomy of communication between the serous and mucous surfaces.

However artificial this view of the structure and extent of the mucous membrane may appear, it facilitates the study of its morbid state in the disease in question.

From this it is evident that the extent and ramifications of the mucous membranes are very considerable, and offer an immense surface upon which the poison may exert its ravages.

The conjunctiva is the seat of suppurative inflammation, and although disorganization of this membrane may but seldom occur, still Dr. Gregory mentions the case of a gentleman who lost the sight of both eyes from the intensity of the inflammation.

The meibomian glands are frequently irritated, the puncta lachrymalia and the ductus ad nosum closed, by thickening of this lining membrane, so that the tears flow over the cheeks, and the face is often disfigured by eversion of the eyelids for the rest of life. The Eustachian tube is the seat of the same morbid action. It is often closed by the thickening of the membrane, and temporary deafness is caused till this returns to its normal state. In severer cases the poisonous matter penetrates into the tympanum, ulcerates the membrane, and the bones of the ear are discharged externally. Suppuration is frequently set up, and fetid discharges from the nose and ear make the patient miserable to himself and to those around him. In some of these very severe states the disease assumes the appearance of glanders, and it may be a subject for future experimentalists to ascertain, whether such discharges of the human subject introduced into the nostrils of the horse would not produce a disease similar to that affection. All the bony cavities lined by the mucous membrane are subject to exfoliation; for as soon as bone is denuded of its investing covering it dies and separates. Portions of the turbinated bones are sometimes discharged.

There is in milder cases an annoying source of irritation, arising from the separation of the epithelium; which forms bands hanging down into the fauces, keeping up a constant state of irritation, and exciting efforts to vomit.

Some instances are recorded where the whole lining of the œsophagus has been rejected similar to the croupy membrane from the trachea, cylindrical tubes; constituting the diphtherite of Bretonneau.

The vomiting, which so frequently accom-

panies the disease at its commencement, is probably sympathetic with the condition of the fauces; but in progress of time the inner coat of the stomach is implicated, and nausea occurs to a distressing degree. This frequently continues to harass the patient at advanced periods of the disease; an erythematic inflammation causing vomiting, when confined to the stomach, produces diarrhoea by extension into the intestines. This may produce ulceration, and cause dysentery and all its consequences.

Much of this may be due to the quantity of morbid secretion swallowed, but independent of this secondary, there is often primary irritation. The respiratory passages offer appearances similar to those of the alimentary. To begin with the epiglottis. It is found in all states of congestion, and is often ulcerated. It has been much agitated whether croup is a consequence of this disease; it is certainly of rare occurrence: a stridulous sound does not constitute croup.

Although diphtherite is recognized as a variety only of scarlatina by many British practitioners, for the membrane has been fully formed in this disease, still Bretonneau insists upon a specific distinction. He advances the following parallel between the two affections.

Diphtherite and scarlatina.—The commencement of diphtherite is hardly accompanied by any febrile affection, or the attack is quite ephemeral, and the pulse soon sinks to its natural standard. The organic and vital functions are often so little deranged, that children who are menaced with very severe attacks of the disease do not lose their appetite, nor are they prevented from pursuing their usual games.

The scarlatina is ushered in by commotion in the circulating system, similar to that produced by the bite of a venomous reptile, and the respiratory movements are equally affected. The digestive functions are for the most part deranged, and vomiting and diarrhoea, together with great nervous depression, which increasing, rapidly announce a fatal termination. The diphtherite is not marked by any definite periods in its progress, as is the case with scarlatina. The diphtherite, if it does not cause death by its mechanical obstruction, degenerates into a chronic affection, whereas the progress of the other is very rapid towards a fatal termination at all periods of its duration. The former proceeds from a single point, and spreads with more or less rapidity over the surfaces, which it attacks gradually, and it manifests a peculiar tendency to attack the respiratory passages.

The scarlatinal inflammation diffuses itself at once over all the mucous surfaces, and has no tendency to attack the æriiform tubes. In the former case, if death occur within the

first periods, it is from mechanical obstruction to respiration; in the latter, no organic lesion justifies the cause of death. If topical applications modify the diphtheritic inflammation, the health is restored as soon as the local complaint is terminated. This is far from being the result in the scarlatinal inflammation, which when relieved from all its local characters as affects the throat is followed by a host of untoward systems, as we have before enumerated.

Original Communications.

PERFORATION OF THE STOMACH, WITH OBSCURE THORACIC SYMPTOMS.

By G. H. BARLOW, M.D. Cantab.

To the Editor of the Medical Gazette.

SIR,

I BEG leave to forward to you an account of a remarkable case of perforation of the stomach, which occurred under my care in Guy's Hospital, with some observations upon it by my reporter, Mr. S. Wilks. These observations are for the most part so much in accordance with my own views, that I have thought it expedient to make but little addition to them.

Barbara Paynter, æt. 39, admitted into Martha's ward, Guy's Hospital, under Dr. Barlow, 26th October, 1844. She is a married woman, and has had five children. Her employment is washing. She enjoyed good health until the age of thirty-two, when her fifth and last child was still-born; on which occasion her life was in extreme danger. Since that time she has never felt perfectly well, but continued at her employment the following sixteen years. Eighteen months ago she felt obscure pains in her epigastrium and left side, darting through to her shoulder-blade, and she had also occasional vomiting. This disabled her from work. The case was treated as one of irritability of stomach, arising, as her medical adviser suspected, from intemperance. The pains still continued with greater or less severity until four months since, when, becoming aggravated, she came into the Hospital. Here her prominent symptom being obstinate vomiting, it was supposed to be a case of sub-acute gastritis, and was treated accordingly. These symp-

toms having again abated, she left the house, and was about as well as usual until the 24th of October last, when, whilst employed at her domestic duties, she was suddenly seized with intense pain in the left side and shoulder, and great difficulty of breathing. She lay down and fainted, and when she was restored, so great was her dyspnœa, that she felt as though she was about to be suffocated. These symptoms continuing, she was after two days again admitted into the hospital.

Her countenance betrayed excessive anxiety; she complained of pain in the head; her feet were cold; flush on the cheeks, and dyspnœa, and ascribed most of her pain to the epigastrium and left side, darting through to her shoulder. Her bowels were costive; she had a disagreeable taste in her mouth, and cold clammy sweats.

On the day after her admission, Dr. Barlow not wishing to exhaust her by examination, as she had been under his treatment before with stomach affection, and her prominent symptom being now vomiting, he treated it as a case of sub-acute gastritis, with probable pleurisy. A day or two after, however, as she still complained of pain in her side, though it had greatly abated, her chest was examined, and the following results were obtained. Thorax upon percussion was moderately resonant both in front and behind, except under the left scapula, where it was rather dull. On applying the ear to the chest anteriorly, the respiratory murmur was audible, as also posteriorly on the right side, but not increased in this situation. About two or three inches below the left scapula and near the place of dulness, amphoric respiration was distinctly heard, synchronous with the movements of the lungs. It could also be traced down nearly as far as the loins. Metallic tinkling was also occasionally heard in this spot. Over the scapula, and of course above this last mentioned point, ægophony was heard, or, more properly, Punch's voice, for the words which she spoke were highly harsh and discordant. There seemed to be no obvious difference in the size or motion of the two sides of the chest. No pleuritic rubbing could at this time be detected. Sometimes splashing was heard on succussion, but this was not constant. The epigastrium presented rather an ele-

vated bulky appearance, and was very resonant upon percussion, as was the whole abdomen. The remedies she took alleviated the vomiting and the pleurisy which she evidently laboured under, but she gradually sunk, and two days before she died, she sat leaning forward in bed, resting her head upon a pillow in front of her, and referring all her pain to the epigastrium.

She did not seem to suffer remarkably from any want of appetite; she often asked for food, and was able to take fish daily. Fluids caused her a considerable degree of pain. The matters ejected from her stomach were never minutely examined.

The only occurrence of interest which intervened between her admission and decease, was a supposed pericarditis she laboured under. Over the region of the heart, a rubbing was distinctly heard, synchronous with the motions of the organ, and this continued when the patient held her breath.

She died on 13th November, twenty days after the sudden attack of dyspnoea.

The stethoscopic signs, particularly the amphoric respiration, coupled with the severe symptoms, satisfactorily proved to many that the case was one of pneumothorax. Dr. Barlow was opposed to this opinion, and persisted in referring the amphoric and metallic sounds to the stomach, and mentioned a case in which a perforation of the stomach had communicated with a large peritoneal abscess.

Inspectio cadaveris post-mortem horis xxx.—On opening the chest and abdomen, the first thing that presented itself was a large peritoneal abscess occupying the left hypochondriac region. It was circumscribed by adhesions which had previously been formed, and was thus separated from the general peritoneal cavity. It was bounded above by the diaphragm, which was very much forced upwards. Its front and side, formed by the ribs, and the lower boundary of it, were the left lobe of the liver, spleen, and superior part of the stomach. The abscess communicated by two openings with the stomach. It was lined by a membrane which was partially sloughing, and involving the adjacent parts of the liver and spleen. It contained a dark offensive fluid, full of broken down membrane, and also some air. On the mucous membrane

of the stomach were some red patches, and close to the œsophageal opening on the right side was a perforation, the result of an ulcerative process, communicating with the above-named abscess, and large enough to admit the middle finger. On the anterior wall of the stomach there existed another perforation, but not so large as that just described. When the chest was opened a large quantity of sero-purulent fluid escaped from its left side. No pleuritic adhesions existed, with the exception of one or two unimportant bands of lymph.

The lungs were very much condensed from the pressure of the diaphragm, which was forced up as high as the fourth rib. The lungs, with this exception, were healthy: no tubercles could be discovered. The heart was healthy, and there existed no traces of pericarditis, neither recent or of an older date. There existed no communication between the chest and abscess.

From the conditions found after death, we have to enter into the consideration of the causes of the stethoscopic signs and the explanation of the constitutional symptoms, particularly of the sudden attack of dyspnoea and fainting.

In reference to the former of these points, we see a striking example of the value of the stethoscope. Certain sounds were heard, which must have had their origin in certain physical conditions, and these exact conditions were found after death. As in pneumothorax there existed two chambers containing air, the stomach and abscess, and a communication between them, admitting of the passage and re-passage of this air from one to the other from any external pressure upon them, and the sounds produced by both would therefore closely simulate each other. The obscurity, then, which existed was in the interpretation of these signs, and in the suspicion of their seat being in the lung, and the case consequently one of pneumo-thorax; while in fact these sounds, which were supposed to be in the chest, were in the abdomen, as was shown by the inspection. To me it clearly appears that they all took place in the latter region; that the amphoric sound was caused by the passage of air from the stomach to the abscess, and *vice versa*, and that

this synchronised with the breathing of the patient (the most remarkable feature in this part of the case) evidently by its connection in some way with the diaphragm at every inspiration. This would be difficult of explanation excepting the relation of the parts were well understood. It will be remembered that the diaphragm was not in contact with the stomach, but formed the superior boundary of the abscess. The diaphragm, then, by its downward descent, forced the air out of the abscess into the stomach, which was anterior and rather below it; the air again, by its own elasticity, returning from this organ into its original cavity when the pressure was removed. The modification of this sound, the metallic tinkling, also took place in a similar way. The œgophony, it will be remembered, was heard much higher up, and of course was produced by the usual conditions—effusion of fluid in the chest from the pleuritic inflammation.

As regards the constitutional symptoms, and particularly those severer ones before alluded to, my conclusions are these, though the history is very imperfect. That for years she had suffered from chronic gastritis; that ulceration had subsequently taken place in the inner coats of the stomach, and the recent sudden attack of pain which she experienced was produced by the rupture of the peritoneal coat of this organ. In other cases on record of perforation of the stomach, the symptoms which have occurred have been similar to these, and probably as severe. Pain of the most excruciating character, which causes the sufferer to assume a variety of postures, sometimes almost bent double on himself, in his efforts to procure relief. Great anxiety of countenance, skin covered with perspiration, and breathing extremely quick; constant sickness and nausea, and no preliminary signs to indicate such direful effects as are about to ensue. The pain she experienced was no doubt intensely increased by the pleuritis which shortly supervened, and the diaphragmatic pleura being involved in the inflammation caused the more than usually aggravated symptoms.

But, leaving out of the question the post-mortem appearances, I cannot satisfactorily see reasons for supposing,

during life, the case to have been one of pneumothorax: and first, as regards the stethoscopic signs. So far from the chest being over-resonant, upon the posterior surface, both near and above where the amphoric respiration was heard, it was dull. There existed œgophony, which is seldom the case in this disease; and the splashing heard on succussion was not constant: of the three signs which are almost pathognomonic of the disease, not one was present—I mean the total absence of respiratory murmur, increased resonance upon percussion, and splashing on succussion. It is true that splashing was sometimes detected, but the fact of its being only sometimes, and not constant, was sufficient proof that it originated in the stomach (or abscess?); for if it had occurred in the chest, the conditions remaining the same, this sign must have been permanent. That the stomach, and therefore the abscess, did contain air, is thus proved by this circumstance, and also from its highly tympanitic state during life.

Again, as regards the constitutional symptoms, if they had been caused by the rupture of the pleura, they must have occurred under two conditions—either from the bursting of a tubercular abscess in the last stage of phthisis, or from unhealthy pleurisy, and subsequent slough of pleura, and which is of rare occurrence. In reference to the first of these causes, there existed no indications of phthisis either by the stethoscopic or other symptoms. As regards the empyema, no pleuritic symptoms had preceded, and no expectoration followed, which would have been the case if the pleura had ruptured under these circumstances. The only probable cause left was the sloughing of a small strumous tubercle, which might strongly be suspected not to exist, from the total want of expectoration, and which was afterwards proved by the inspection.

There are also two more points of interest connected with this case: I refer to the diagnosis of the stomach affection and the pericarditis.

We see that ulceration must have existed in the stomach of this patient for some considerable period, and yet, if the patient had not previously been in the hospital labouring under some

gastric irritation, it might have been almost entirely obscured by the more prominent thoracic symptoms. Unless the severity of the symptoms, and their non-alleviation by remedies, would decide between the organic or mere functional disorder, I know no other means of distinction. However, I would put this forward as an interesting subject for inquiry—How are we to distinguish ulceration of the stomach from gastritis, or even the more simple forms of dyspepsia?

The other question I alluded to was not peculiar to this case:—"What are the circumstances which would decide between rubbing of the surfaces of the pleura and those of the pericardium?"

The cessation of the frottement when the lungs are at rest, deciding the sound to be owing to pleuritic rubbing, as mentioned in books, would have been of no avail in this case, for the frottement was synchronous with the movement of the heart, arising from the friction of the pericardium against the serous covering overlying it. The motion of the diaphragm, which has been pointed out as not existing in pericarditis, was prominently obvious in this case.

Another great peculiarity of the case was the long survival of the patient after the rupture of such an important organ. If no adhesions had formed around the stomach, its contents would have escaped into the cavity of the abdomen, setting up peritonitis, and the whole case would have accorded with similar ones on record—both as regards the collapse after the lesion, and the non-existence of premonitory symptoms which would indicate such a fatal accident as was about to ensue.

SAMUEL WILKS.

The reasons which induced me to regard the above case as one primarily of gastric rather than of thoracic disease, were nearly those which have been stated by my friend Mr. Wilks, viz., the previous history of the patient, pointing to irritation and probable ulceration of the mucous membrane of the stomach; the circumstance of the air being evidently below the fluid, (which could not have been the case had they been in the same cavity); the improbability of there being so large an effusion of blood into the pleura,

and so large a pneumothorax on the same side, with a perfect septum of false membrane between them; and the absolute situation of the cavity in which the amphoric sound was produced, for that sound was heard most distinctly below the margin of the ribs.

The series of causation appears to me to have been as follows: ulceration of the mucous membrane of the stomach, leading to perforation of the coats of that organ, and escape of its contents; peritonitis circumscribed by adhesions forming a cavity communicating with the stomach; diaphragmitis; extension of inflammation by continuity to the pleura; pleuritic effusion; death from exhaustion produced from the two inflammations.

There is one point, however, in which I am disposed to differ from the gentleman who has so well reported the case—I mean the mode in which the amphoric sound was produced, for I incline rather to the opinion, that the sound was produced in the stomach, and the large cavity communicating with it, by the propagation of the vibrations produced in the bronchial tubes, by the voice and respiration, to this cavity, through the effused fluid above the diaphragm, the diaphragm on that side being quite passive, having lost its muscular contractility in consequence of the inflammation of which it had been the subject.

I am confirmed in this opinion by having ascertained experimentally that such sounds may be produced in such a cavity by movements and vibrations in its internal surface. Thus, if a bladder be moistened and loosely inflated, sounds of this character may be conveyed to the ear, when applied to it, by gently tapping or drawing the finger over its surface; and I have lately witnessed a sound resembling a metallic vibration in a patient of my own in the clinical ward of Guy's Hospital, the subject of a large pneumothorax, by applying my ear to the chest, and drawing my finger smartly over the surface.—I am, sir,

Your obedient servant,

GEORGE H. BARLOW.

7, Union Street, Southwark,
April 19, 1845.

FURTHER
REMARKS ON SPERMATIC
DISCHARGES.

BY BENJAMIN PHILLIPS, F.R.S.

Assistant-Surgeon to the Westminster Hospital.

To the Editor of the Medical Gazette.

SIR,

It is now more than two years since I sent you two communications having reference to spermatic discharges; and although I did not regard those letters as giving any thing more than a very imperfect sketch of the subject, I had no intention of again directing attention to an affection, which, though not frequently exercising any very direct influence upon the life of the sufferer, is yet productive of great mental and bodily distress.

In turning over the memoranda of 109 cases which have subsequently come under my notice, it occurred to me that I might make some further remarks on the disease, which might prove useful to the profession, by enabling it to profit by the rather large experience which has been afforded me in a complaint upon which individual experience is usually small.

The cases which have come under my notice have left on my mind the impression, that though great general depression, and much mental discomfort, are the common accompaniments of those discharges, the instances are unfrequent where permanent bodily or mental mischief results from them: still I have known cases in which the mind as well as the body have broken down under the complaint. Usually, however, the inconvenience is got the better of; and I think more commonly it is owing to effort on the part of the patient than to the skill of the attendant.

Of the 109 cases to which I have alluded, 84 were under 22 years of age; 97 admitted that they had practised masturbation to a greater or less extent, and they referred their present distress to that practice. Every one, however, stoutly asserted that the habit had been discontinued—by some for a few months, by others for years—but in many cases I thought I saw reasons to doubt the correctness of the assertion. In two of the older cases, I am of opinion that irritation within the rectum was the exciting cause; in two

instances abuse of sexual intercourse; in one, probably in two, stricture of the urethra; in four, the irritation consequent upon congenital phymosis. In the remaining cases I have no doubt that masturbation was practised, though it was strenuously denied.

In 38 cases the patients were submitted to active treatment; caustic was applied upon the urethra. In 71 instances no medical treatment seemed to be necessary, except for the purpose of exercising some moral influence over the patient, and to gain time. They were advised in many instances to use a mixture of the Tinct. Ferri Sesqui-chloridi, and Tinct. Lyttæ. In cases where the patient was reasonable, I tried to convince him that it was unnecessary to employ any medical treatment.

Such is a statement of the general features of those 109 cases. I will now proceed to offer some remarks upon the ordinary characters presented in the cases which have come under my observations.

Of the patients under 20, a considerable majority deny that they have ever attempted sexual intercourse, but their minds have evidently dwelt much on sexual matters. They complain of occasional emissions during the night, of which they are usually conscious for the most part; they occur during lascivious dreams, and in most cases not oftener, on an average, than once in four to seven days. In a great many cases, however, there is another symptom which they conceive to be much more serious—the escape of a drop or two of a viscid transparent fluid with the last drops of urine, either when simply emptying the bladder, or when at stool. This kind of loss very commonly produces severe mental depression, often amounting to absolute hypochondriacism. In most cases the patients' minds are alive to all the dreadful consequences of these symptoms, for they have usually devoured the contents of books written by the inventors of quack medicines, for the cure of sexual debility, who gain a disgraceful livelihood by pandering to the fears and fancies of young lads who suffer from these affections; and in most cases no reasoning will convince the sufferer that his worst fears will not be realised. And in these cases I have occasionally submitted them to treat-

ment, more with a view to act upon their moral than their physical nature.

In this class of cases the instances are few in which, if the practice of masturbation be discontinued, and the mind can be directed to other objects, all inconvenience is not in a moderate time dissipated. The difficulty I have experienced is to make the patient think so. My view of these cases is less gloomy than that of some persons who have written on the subject; they have been regarded as the most aggravated form of the malady. In ordinary cases I hold them to be the simplest, the most easily got rid of.

The way in which I explain this kind of discharge is as follows. A large number of lads soon after puberty inflame their minds by reading lascivious books, from which they derive images of sexual pleasures. A large number, also, are early taught the practice of masturbation. Under both circumstances, the gratification derived by contemplating the image, on the one hand, and by the physical excitement, on the other, keeps up a constant irritation. The testicles, instead of enjoying moderate rest, are incessantly stimulated by the dream at night, the mental or physical stimulus during the day; the secretion is constant, the seminal vesicles are distended, and unless the ejaculation takes place with sufficient frequency to relieve them, the fluid must escape by some other means; and the pressure upon them during the efforts at stool, or in making water, squeezes out a certain quantity of the fluid by which they are distended, and it usually escapes with the last drops of urine.

At one time I doubted whether this fluid were spermatic, it is usually so smooth, transparent, and homogeneous; but if it be examined under the microscope, spermatozoa can usually be observed in it. Its thin fluid character has induced some people to think that it was a depraved secretion, become watery by exhaustion of the secreting organ; and sometimes it may be so, but usually it is not so; for if a person who complains of the constant escape of the thinner fluid has an ejaculation, the fluid will be thick and grumous. It is therefore most probable, that the more fluid portion of the secretion which fills the seminal vesicles is most easily pressed out; and this is a rea-

sonable explanation of this particular feature of seminal discharges.

To cure this symptom, all that is necessary is to keep the testicle quiet, by substituting new images for the prurient fancies which have occupied the mind, and to empty the vesicles occasionally by sexual intercourse; and for this class of cases I think marriage is the best cure. It is true, it is not easy generally to make the persons who thus suffer think so; they believe that their sexual power is destroyed, and that intercourse must be impossible—that their impotence is complete; but spite of such impressions, I have never hesitated in such a case to recommend marriage as a cure. You may be met with the observation, that intercourse has been attempted, but that it had failed—the erection was insufficient, or the ejaculation premature. These things in no wise alter my opinion, because where a person casually attempts intercourse as a means of testing his powers, but with the impression strong on his mind that he shall fail, he does fail; and therefore I dissuade patients from having recourse to these tests. But if a man be married, he ultimately gets rid of that nervousness which may at first have rendered him powerless, and he ultimately succeeds; and a single success gets rid of the mental impression which prostrated his bodily powers.

It is astonishing, in these cases, how powerful is the influence of the mind in destroying the virile power. I was consulted by a man upwards of 40 years of age, who was at the time apparently in the best health, but who for twenty years had scarcely had an erection during perfect consciousness, though the sexual organs were perfectly well developed, and natural. His own account was, that there was no want of erection before 20. To some extent he had practised masturbation, and emissions during lascivious dreams were not unfrequent. At that time he read *Sauvages*, where he found a passage containing, as he conceived, a statement that discharges occurring as his did lead to impotency. From that hour he has been practically impotent. On first waking in the morning there is almost always complete erection; but the moment consciousness is perfect all erection ceases, and does not occur again till the next morning.

Supposing my view of such cases to be correct, it is clear that they would commonly right themselves; but so profound is the mental distress they occasion, so hopeless the condition of the mind, so complete the despair in many cases, that all reasoning is useless, and you are obliged to propose some plan of treatment; and the main point to be carried out is to convince the patient that matters will go right under the use of the remedy employed, but that many months are necessary for the purpose; and that even then, unless the habit of constantly looking for discharge, and dwelling upon the subject, be discontinued, it is very likely it will fail.

In all cases, however, previous to recommending such a course, I am accustomed to pass a bougie along the canal once or twice, for the purpose of ascertaining whether or not it be in a natural state; because, if there be no increased sensibility in the vicinity of the verumontanum, my experience does not enable me to promise any very certain relief from the direct application of any agent. If there be much sensibility along the whole canal, and this is sometimes the case, it is often difficult to satisfy the mind as to the state of that particular portion of the canal. It then becomes necessary to pass a bougie more than once, to determine what we desire.

Even in cases of this class, if there be very excited sensibility at the point in question, great good is usually derived from the use of caustic; and, indeed, there are few cases of sexual debility which are much improved by the use of caustic, unless such abnormal sensibility be present.

CASE OF MALFORMATION OF THE HEART.

SUSPECTED POISONING BY NUX VOMICA—
DEATH FROM POISON OR DISEASE.

COMMUNICATED BY A. S. TAYLOR, Esq.

Lecturer on Medical Jurisprudence and
Chemistry in Guy's Hospital.

THE body of E. E., a female, ætat. 45 years, was examined at Guy's Hospital, July 12th, 1844, eighteen hours after death. This person was a twin, born at eight months, and was always liable to shortness of breath, and to become blue upon unwonted exertion. Her habits had been irregular and intem-

perate. It was at first supposed that she had swallowed about a drachm of powdered nux vomica about an hour before her death, having purchased that quantity from a chemist. But, upon inquiry, there did not appear to be any certain evidence that any of the poison was taken. A paper containing powder of nux vomica was found in her possession; the poison was, unfortunately, not weighed, but it was considered to be about a drachm. She fell suddenly in the street, near the hospital, and died gasping, and pallid, without being at all convulsed, in ten minutes after she had been brought into the house. The stomach-pump appears to have been used during life, and Decoct. Cinchonæ injected. The body was lean, but had not the appearance of being wasted by disease. The lips and ends of the fingers were extremely blue. The chest was much deformed, apparently from tight lacing, the lower ribs being compressed laterally to an extraordinary degree. Some of the muscles, especially those deeply seated, were very pale.

The pericardium contained a considerable quantity of clear serum. The heart was greatly enlarged, its increase of size being entirely due to the state of the right cavities. The pulmonary artery was very conspicuous; there were some white patches, like cicatrices, upon its left side; and its back part adhered to the aorta by strong bands. The right cavities of the heart were distended with dark semifluid coagula. The right auricle was very capacious, and communicated with the left by an oblique opening capable of transmitting the ends of three fingers. In the remains of the septum, below this, was an oblique passage, closed on the side of the left auricle, and evidently the trace of a foramen ovale. It was clear that there must have been originally two of these communications, one of which had closed, the other remaining permanently open. The four pulmonary veins opened into the right auricle. The common termination of the coronary veins occupied its usual position, and was furnished with a complete valve. The tricuspid valve was natural. The right ventricle extremely capacious, and its walls thick. The pulmonary artery was of extraordinary width; the tissues of the vessel were strong, and still extensible. The sigmoid valves were considerably thick-

ened, and had some vegetations attached to their free edges; notwithstanding the extreme dilatation of the artery, they doubtless acted as efficient valves. The left auricle was smaller than the right. The left ventricle was remarkably small in comparison with the right; its walls were thick, but their muscular tissue was not strong. The aorta and its valves were healthy in structure; but this vessel was remarkably narrow, being less than an inch and a half in circumference at the widest part of its orifice*; and distal to the left subclavian artery it was very perceptibly narrower than elsewhere. There were several enlarged bronchial glands near this spot, which may have encroached slightly upon the aorta; or the dilated pulmonary artery may have somewhat compressed it; but there was no distinct stricture here, and the contracted state of the left ventricle and ascending aorta proved that this narrowing had not caused much impediment to the circulation. The whole remaining tract of the aorta was nearly free from deposit, but very singularly narrow. Neither the internal mammary nor the intercostal arteries presented any obvious enlargement.

The lungs were, in parts, highly emphysematous, and were generally much congested.

The liver was congested. The spleen small, and surrounded by adhesions. The kidneys were small, and tolerably healthy. The lining membrane of the stomach was slightly corrugated, and presented a few spots of ecchymosis, which were probably caused by the action of the stomach-pump.

The stomach with its contents were submitted to chemical examination. No traces of *nux vomica*, or of any other poisonous matter, were found. Although it is possible, therefore, that poison may have been taken, and afterwards removed from the stomach either by vomiting or by the stomach-pump, it is evident, from her symptoms, that the woman did not die from poisoning by *nux vomica*. It is almost equally evident, that death was occasioned by delay to the passage of blood through the right cavities of the heart. This organ was in a condition which must have long rendered its cavities liable to fatal obstruction at any time when,

either the occurrence of additional impediment to the pulmonary circulation, or the entrance of an unusual volume of blood to the right ventricle, produced over-distension of that cavity; which, notwithstanding the hypertrophy of its walls, must have been greatly weakened by its extreme dilatation. The state of mental distress which could induce this person to contemplate the crime of suicide, was probably quite a sufficient cause for the occurrence of fatal obstruction in a heart thus circumstanced. The state of the pulmonary artery, and, indeed, of the lungs themselves, proves that the circulation through those organs had long been subject to great impediment. The small capacity of the left ventricle, and the narrowness of the aorta, show that these parts had transmitted the blood in very small quantities. Had the pulse been felt during life, it would probably have been found small and rapid.

Although the chief amount of obstruction appeared upon the right side of the heart, the fatal result was probably determined by the weakened state of the muscular walls of the left ventricle. Had this cavity still been capable of acting briskly, as it probably did during the greater part of the person's life, the engorgement of the right cavities would have been relieved, and might not then have proved fatal. Hence the utility of the prompt administration of stimulants in cases where the heart's contractile power is either suddenly depressed, or is becoming gradually worn out, in consequence of obstruction and over-distension.

Upon the whole, considering the peculiarity and degree of the congenital malformation, the age which the individual had attained, and the superaddition of pulmonary disease, and of great thoracic deformity, the latter being due apparently almost entirely to an artificial cause, this case is probably almost unique.

The only case upon record similar to this, with which the reporter is acquainted, is the following:—In the summer of 1844, Mr. Harrison presented to the Reading Pathological Society the heart of a child two years and two months old, the subject of cyanosis. The right side of the heart was enormously distended with clots and fibrine, the auricle and ventricle

* The natural circumference of the orifice of the aorta is three inches.

greatly enlarged. The auriculo-ventricular orifice was so much enlarged, or dilated, as to annihilate the functions of the valves. The pulmonary artery was greatly dilated. The ductus arteriosus impervious. On the left side the auricle was very small. The foramen ovale open, its edges rounded, and with no valvular apparatus. The auricular appendages were absent. No appearance of the entrance of any pulmonary veins. Left ventricle very small. It is concluded, but not expressly stated, by Mr. Harrison, that the pulmonary veins terminated either in the vena azygos, or in the superior cava.

PRACTICAL OBSERVATIONS

ON THE

VARIOUS FORMS OF DYSPEPSIA.

By ROBERT DICK, M.D.

Author of a Treatise on the "Derangements, Primary and Reflex, of the Organs of Digestion," "A Treatise on Diet," &c.

"I am of opinion that we cannot bestow too much pains on the consideration of AFFECTIONS of the STOMACH, as we find, that, next to the Pyrexiae, they are the most frequent occurrences in practice."—CULLEN.

HAVING elsewhere treated, somewhat fully, the physiological questions connected with the subject of indigestion, my purpose, in the following papers, is to confine myself strictly to practical matters, and to handle these in the concisest manner possible. I shall begin with a very brief notice of the principal causes of indigestion.

The well-being of the stomach, in common with that of one or two other organs of the body, is not a little affected (though the remark may seem somewhat novel) by certain of our moral and intellectual, or perhaps I ought rather to say, our irrational tastes and habits. We never do our lungs conscious and voluntary injustice. Except from necessity, we never expose them to noxious influences or exertions. Such, however, is not the case with our treatment of our stomachs. Daily, perhaps every one of us, from custom or from want of self-restraint, gives his digestive organs more to do than our wants require; not uncommonly, from gustatory predilections more or less sophisticated, we select articles of diet and modes of cooking, less wholesome than

others which might be chosen. In the causes now named a majority of digestive derangements undoubtedly originate.

Food and drink, improper in kind or in quantity, form the chief and most frequent causes of indigestion. Undue bulk is the first and simplest of the improper qualities of diet. Its operation is to a considerable extent mechanical, and its effect is to overcome the natural resiliency of the muscular coat of the stomach. This organ, as well as the gullet and intestines, is very contractile, inasmuch that the sides of each are when healthy in a state of natural collapse. Thus, could we see food descending the œsophagus, we should observe that tube contracted above and below the morsel; could we inspect the stomach, we should see it in its turn closely embracing the food it was receiving, and only expanding in strict accommodation to its contents, between which and its walls no vacancy was permitted. Now, though a considerable capacity of distension is natural to the stomach, yet this may be exceeded by meals constantly large: and then the result after a time will be that the contractility of the muscular coat will be gradually overcome in a greater or less degree, so that the stomach though empty will not resume its natural calibre, but remain more or less flaccid.

The natural hue of the internal surface of the stomach is pale pink; its appearance soft and velvet-like. When the organ is undistended by food, the mucous coat, from being more ample than the others, falls into considerable plicæ. The interior of the organ is constantly lubricated with mucus, a semi-opaque and sometimes slightly saltish fluid. The gastric juice is distinct from mucus. The former never flows except at the stimulus of food. The mucus is neutral; the gastric juice acid. The latter, differently from the former, is limpid. Rising through the mucous surface it appears in shining specks, which bursting from the orifices of the minute organs which secrete them, diffuse themselves over the whole surface of the stomach. As no sooner than food is swallowed, the alimentary mass is by a rallying movement of the stomach hurried from the fundus along the great curvature and back to the fundus along the lesser cur-

vature; hence, the gastric juice, which flows all the while, is by this incessant tumbling of the contents of the stomach completely mixed up with the food.

From the description now given it will be easily understood how excessive meals operate injuriously. Over-distension of the stomach frequently repeated overcomes (as we have stated) the resiliency of the muscular coat. A species of muscular impotence ensues; the food lies comparatively motionless in the flaccid organ, and the important process by which the gastric juice is mixed intimately with the food, and brought in contact with the surfaces of the minutest fragments, is very imperfectly effected. Hence, just in proportion to the degree and permanence of over-distension of the stomach, is digestion tardy and imperfect, and as food, not transmitted downward, in due time acts, in consequence of chemical changes, and accumulations, as a morbid stimulant, various untoward consequences arise.

*Over-distension and its ill effects may not be confined to the stomach, but excessive meals may extend their disastrous consequences over the whole alimentary canal. An alimentary mass larger than the system requires, and than can be duly digested, distends, in turn, the duodenum and small intestines (interfering, meantime, with the free excretion of the liver by the common duct), and, in consequence of the flaccid condition apt to be induced in the parts now named, impactions of the duodenum, and scybalous accumulations in the small intestines, frequently occur. Another hurtful consequence of large, frequent, and stimulant meals, is the production of permanent hyperæmia of the mucous coat of the stomach, than which state nothing interferes more with the function of a secreting surface.

On the other hand, symptoms occasionally present themselves in practice that leave little doubt as to their being caused by a *contracted* state of the stomach and intestines. These occur in dyspeptics, who, harassed by the morbid sensibility of the stomach and bowels to almost every sort of food, have acquired a habit of taking aliment in only the smallest quantities and most concentrated forms, and into an almost total disuse of fluids. In these

circumstances the stomach and bowels shrink amazingly, and any sudden increase in the volume of food is sure to cause in the first instance considerable suffering.

Every one has read the observations and the experiments of Dr. Beaumont on the stomach of St. Martin. The serious effects there detailed as following dietetic excesses are of a very curious and grave interest. At page 249, of Dr. Combe's edition of Dr. Beaumont's Experiments, we read the following:—"July 28th, nine o'clock A.M. stomach empty; not healthy; some erythema and aphthous patches on the mucous surface. St. Martin has been drinking ardent spirits pretty freely for eight or ten days past. August 1st, 8 o'clock A.M. Examined stomach before eating anything; inner membrane morbid, considerable erythema, and some aphthous patches, on the exposed surface; secretions vitiated. Extracted about half an ounce of gastric juice, not pure and clear as in health; quite viscid. On the following day extracted one ounce of gastric fluids, consisting of unusual proportions of vitiated mucus, saliva, and some bile, tinged slightly with blood appearing to exude from the surface of the erythema, and aphthous patches which were tenderer and more irritable than usual." On other occasions the secretions from the mucous membrane seemed to be entirely suppressed; sometimes they became so acrid as to smart and excoriate the edges of the aperture of St. Martin's stomach. Occasionally, during the use of improper aliment, the mucous membrane seemed abraded in parts, presenting the appearance of a blistered surface, with shreds of epidermis upon it. All these facts are alarmingly conclusive as to the effect of stimuli, imprudently and excessively used, in vitiating the secretions of the stomach, and otherwise disqualifying that organ for the due performance of its functions.

In St. Martin's case, the morbid causes above alluded to seemed sometimes to have *suspended* the secretions of the stomach. Thus Dr. Beaumont not unfrequently makes mention of an irritating dryness of the internal surface of the organ, which characterized its deranged conditions, and during which the delicate papillæ were exposed, unprotected by the mucous secretion, to alimentary contact.

It is obvious that as improper food almost necessarily sooner or later ensures stomachic derangement, so stomachic derangement, by a similar necessity, involves duodenal disorder; the vitiated chyme of the stomach being to the duodenum what crude or irritating food is to the former. The connexion of the stomach with the duodenum may be stated as that of sympathy, but the relation of the duodenum to the stomach is something more. And the same remark applies to every inferior part of the digestive tube as regards parts superior to it. The duodenum has to contend not merely with its own deranged secretions but with those also poured into it from the stomach, which last cause probably often primarily induces duodenal derangement, and materially aggravates it if already induced.

Functional disorder of the liver may long be the sole lesion in dyspepsia, but often the affection of the liver is something more than functional, and consists in a state of chronic inflammation. This term, the late Dr. Abercrombie very justly observes (page 365 of his Treatise on Diseases of the Stomach) "is applied to a morbid condition of the liver which remains after an acute attack, and a corresponding condition may come on gradually without any acute symptoms." Although the pre-determined office of this organ is to secrete from venous blood, and although it is physiologically qualified for this singular function, yet it does not follow that the blood may not be so surcharged with imperfectly assimilated or other unusual ingredients, that even the liver, though expressly designed to rectify such states when existing in a moderate degree, may, in consequence of an extremely loaded and vitiated condition of the portal circulation, suffer such irritation as to lead to some chronic affection of the viscus. Cruveilhier, indeed, attributes hydatids of the liver to this cause; while M. Ribes supposes that a sub-inflamed state of the coats of the veins of the stomach and duodenum, caused by chronic derangements of these parts, and propagated by their veins to the liver, may be the source of certain sympathetic affections of this organ. Cruveilhier has seen inflammation of the rectum extended by the hæmorrhoidal veins to the liver.

At page 393 of his work which we have just quoted from above, Dr. Abercrombie observes: "It is probable that the bile may be increased in quantity, but it must, at the same time, be admitted that our prevailing notions on the subject are rather hypothetical than founded on facts. I am not aware of any test by which we can judge with precision of its redundancy, and I must confess my suspicion that the term, bilious stools, is often applied in a very vague manner to evacuations which merely consist of thin feculent matter mixed with mucus." And he quotes in support of this opinion from a paper of Mr. Tytler, in the Calcutta Transactions.

Without entering on the question whether, and with what frequency, feculent are mistaken for bilious stools, and seeing that Dr. Abercrombie admits it to be probable that the bile may be increased in quantity, it would, I think, have been desirable that this eminent physician should have stated the grounds of his doubt as to the easy practicability of arriving at comparative certainty on this point.

In reference to this matter, we have Sir B. Brodie's, and Tiedemann and Gmelin's experiments. In the experiments of the two last, the excrements, after ligation of the biliary duct, were, I believe, in all cases white. We know, also, that many of the mechanical causes which produce jaundice, simultaneously induce clayish-coloured stools. Dr. A. observes, in the same page from which the preceding extracts are made, that the bile, when mixed with the usual contents of the intestinal canal, imparts to them a bright yellow. It will give, doubtless, a corresponding tinge to the fæces; and the usual depth of this tinge, in healthy evacuations, being determined by an infinity of observations, it follows that if a very deep yellow, or a dark brown hue, be presented in the fæces, not to be accounted for by anything remarkable in the recent ingesta, medicinal or dietetic; if, in addition, we find a more active peristaltic movement of the intestines (another usual proof of the abundance of bile, as torpor of these is of its deficiency) giving rise to diarrhœa; we surely have sufficient evidence, on which to ground scientific treatment, that the liver is secreting with unusual profuseness.

Dr. Abercrombie, at page 385 of the work just quoted from, reprehends "the prevailing doctrine, or rather the prevailing phraseology, by which numerous symptoms are ascribed to disease of the liver on very vague and inadequate grounds;" and he regrets "the prevalence of this doctrine, and the indiscriminate use of mercury which has arisen from it." This jealousy of mercury Dr. William Thomson, formerly of Edinburgh, now of Glasgow, largely shares, as we learn from his work on the liver. I would merely here observe, that of all the abdominal organs the liver is the most frequently, easily, seriously, deranged; the one which most readily takes on the successive phases of functional, chronic, structural disease. While this certainly is no excuse for the careless or rash practitioner, who fancies he sees hepatic disease in every stomachic or intestinal affection, yet Dr. Abercrombie's language may be apt to divert the attention of younger practitioners from an organ the chronic derangements of which he himself, in our opinion much too unqualifiedly, describes as being, "in a large proportion of them, beyond the reach of any human means."

As to the use of mercury in disorders of the liver, we would here merely remark, that in many of these mercury is unquestionably the most efficient agent; and that objections founded on its abuse have no weight against its judicious use.

The pancreas.—Though we are, in a great measure, ignorant of the precise uses of the pancreas, yet there can be little doubt that it performs a part in the process of digestion. Dr. Baillie mentions a case of abscess of this organ, in which the symptoms before death consisted in wandering abdominal pains, in spasmodic affection of the abdominal muscles, in squeamishness, in stomachic distension. Disease of the pancreas may simulate, or rather be mistaken for, affections of the stomach, or of the left lobe and convex surface of the liver. It frequently causes epigastric pain and sickness, and sometimes jaundice, when structural disease, extending along its duct, involves the ductus choledochus, narrowing or obstructing that common conduit. Its enlarged bulk may also be detected through the stomach, and

be mistaken for structural disease of that viscus; or else pressing on the ductus communis, or the duodenum, may cause obstruction of the former, impaction of the latter.

Spleen.—Of the function of the spleen we are even more ignorant than of that of the pancreas. But doubtless, disorder of that function, in one way or another, affects digestion. Its proximity to the stomach renders it almost impossible that the spleen should be seriously disordered, and the stomach remain uninfluenced. Indeed, it is often through the stomach alone that affections of the spleen manifest themselves. Accordingly, we have cases in which obscure and generally mild dyspeptic symptoms alone announced the splenic disease which caused them, and which post-mortem inspection unveiled. This organ is one of the most insensible organs of the body, so that the gravest and most extensive disorganization may go on in it without a sensation of pain being experienced. Even pressure on an inflamed spleen does not develop pain. Hepatic obstructions, by interrupting the portal circulation, may cause venous tumefaction of the spleen, in common with that of the stomach and pancreas. To this cause are probably owing those alternations of fulness and pain between the liver and this organ which Dr. Philip notices.

I have stated that errors either in the quantity or the quality of diet are by far the most frequent and efficient causes of dyspeptic derangements; yet it is scarcely necessary to observe that indigestion may owe its origin to almost any of the causes which produce disease in other organs of the body. There may, undoubtedly, be an original or acquired disposition to derangement of one more of the principal organs of digestion, as there so frequently is to pulmonary, renal, or other disease. Most persons have what may be called one weak point in their system, one organ, or set of organs, more apt than others to fall into irregularity of action: accordingly, with some persons the stomach, the liver, or the colon, or all these organs, costs them trouble and attention; with others, cold excites irritation, not in the pulmonary, but the gastric mucous membrane; others, on exposure to raw and damp air, fail

not to suffer from catarrh, complicated with marked biliary derangement; others, on any occasion of unusual thought or anxiety, are sure to have what in familiar, but sufficiently intelligible language, is called a fit of indigestion. Hence, then, the disease in question may arise from changes of temperature, from fatigue, from mental labour, from moral excitement, besides a thousand other causes capable, or not capable, of being appreciated.

12, Bentinck Street, Manchester Square,
May 1, 1845.

CASE OF CHRONIC LEUCORRHOEA, TREATED BY THE OXIDE OF SILVER.

To the Editor of the Medical Gazette.

SIR,

SINCE the publication of Sir James Eyre's valuable little brochure, entitled, "Practical Remarks on some exhausting Diseases incident to Women," in which he advocates the administration of the oxide of silver, an extreme case of chronic leucorrhœa has presented itself in my practice; and it is with much pleasure that I bear testimony to the peculiar efficacy of the agent he has so strongly recommended. In another instance, also, in which the existing malady had been preceded by a severe epileptic paroxysm, which had for three years left behind it traces of its debilitating action on the brain and nervous system, the oxide has proved of eminent utility. Should the anticipations of the author be fulfilled, we shall hear no more lamentations from practitioners, of the "cerulean hue" produced upon the skin, for we have here (according to the concurrent testimony of authors) an innocuous preparation of silver, possessing all the beneficial properties of the nitrate, divested of the serious objections to its employment. It is not caustic when externally applied, but differs as much from the nitrate as chloride of mercury does from corrosive sublimate.* The following is the case to which I have alluded:—E. L., aged 26, had suffered from irregular fluor albus for nearly

seven years. The discharge at times was so acrid as to produce excoriations, and small miliary vesicles, about the internal labia. About twelve months ago she bore a child at the full period; and after a protracted labour, from which she slowly recovered, the discharge became greatly augmented, and subsequently acquired the character of half-coagulated albumen, mingled with clots of blood, and streaks of green purulent matter. From the constant pain in the back and loins, the obscure dull aching in the hypogastric region, the progressive loss of strength, dejection of spirits, wanness of countenance, chillings, and languor, which accompanied the discharge, it was suspected by the practitioners whom she had consulted that organic disease of the uterus had supervened; and as their measures had been ineffectual in affording relief, she had followed the unprofessional advice of a friend, and had resorted to the tincture of cantharides, and other irritating medicines. The disorder, however, with its attendant train of evils, increased, and about a fortnight since she was placed by my direction on the plan recommended by Sir James Eyre, and sent into a healthy part of the country. The following is an extract from a communication received today:—"I am happy to say that the medicines you prescribed have had the desired effect; I have already derived great benefit from them: and I may state with certainty that the discharge has diminished to one half its former quantity."

Considering the chronic inveteracy of this case, and the fact of its having previously withstood all the means devised for its alleviation, I regard it as an additional corroboration of the efficacy of the agent employed, which promises, I think, to become a remedy of essential value in many disorders, which, from their ungovernable nature, have hitherto baffled the skill of the practitioner.—I am, sir,

Your obedient servant,

R. H. ALLNATT, M.D.

Parliament Street, Whitehall,
April 12, 1845.

* "Practical Remarks :?" art. Pyrosis.

MEDICAL GAZETTE.

Friday, May 2, 1845.

IN commencing the first volume of a new series of this journal, we beg to offer a few remarks to our readers.

In the first place, we have to congratulate ourselves, and to thank our contributors, for the kind support which we have hitherto received. The LONDON MEDICAL GAZETTE has now been published for a period of nearly eighteen years, and it has just completed its thirty-fifth volume. During this long period of its existence, it has been the object of its conductors to lay before the profession, not merely the medical occurrences of the day, but to indicate the actual progress of medicine in England and on the Continent. Their efforts to carry out this plan successfully, have been hitherto in some measure defeated by the want of sufficient space. In the series now commenced this difficulty will no longer exist; and it is proposed, as a new feature in the journal, to insert more frequent contributions from foreign sources.

The subject of Microscopical and Chemical Pathology has of late years attracted considerable attention; and we therefore intend giving, for the first time in an English dress, the results of the interesting researches of Vogel, Heller, and others, in the form of a series of contributions translated expressly for this journal. One great deficiency in English medical literature has been, the want of a sufficient number of authentic reports of cases treated in our large public hospitals and infirmaries. From the kind assurances of assistance which we have received from the physicians and surgeons attached to the principal London and provincial hospitals, we hope to supply this de-

ficiency, and to be able to furnish our readers with the means of becoming acquainted with the progress of practical medicine and surgery in England. One department of the journal will be especially reserved for the reports of lectures, and it is our intention to commence with the Lumleian lectures lately delivered at the College of Physicians, by Sir George Lefevre, and with the lectures on the Chemistry of the Metals, now in course of delivery by Professor Faraday, at the Royal Institution. Clinical lectures on various subjects connected with medicine and surgery, will appear occasionally.

Another department will be reserved for the reports of Proceedings of Medical and Scientific Societies; and under the head of Medical Intelligence, we propose inserting short notices of those subjects which are likely to have any temporary interest with the profession. These notices will be divested as much as possible of a medico-political character; for politics appear to us to be entirely misplaced in a journal professedly devoted to medicine and the collateral sciences. Those subjects which may in any way affect the rights or interests of the medical profession will at all times receive due attention; and we shall not fail to point out to our readers, with an impartial hand, what may be the bad or evil consequences of the present contemplated changes. We know that we must in the end be judged by the results of our labours; and it is this consideration which has induced us to give but a slight sketch of the plan upon which it is intended that this journal shall be conducted. We confidently look forward to our views being seconded, not only by our old friends, but by new contributors.

WE have already expressed very strong objections to the institution of this class of Inceptors in the Faculty of Medicine, under the new Bill. Such a class appears to be only nominally placed above the Licentiates in Medicine and Surgery, for it is quite possible, as the Bill at present stands, that the Licentiate may even be superior to the Inceptor in general and professional attainments. On this subject, Professor Quain justly remarks: "The association of a degree with the letters testimonial, in the manner which may be said to be done in the Bill, namely, without elevating the Licentiate, would certainly have the effect of augmenting the number of degrees, and so would promote the interest of those conferring them. And it might prove of some advantage to the possessor of the title of a degree, if this should pass current with the public, for what, under the circumstances, it would not be,—a sign of superior attainments; but assuredly such a measure would not promote the real respectability of the profession, or contribute in any way to the advantage of the public*." In short, under the Act, a two years' matriculation in a University, with the production of Letters Testimonial, will entitle a person to examination for the degree of Inceptor, or, as we must understand it, Bachelor of Medicine, and when obtained upon such easy terms, it can only be regarded as the purchase of a title which may carry more weight with the public than it deserves.

Under the 22nd clause of the Bill, which refers to what is there termed "Restriction on Medical Degrees," it is ordered that no degree in the Faculty of Medicine shall be granted, except to students upon examination, who shall have been matriculated for two years

in a University, or in a Medical School recognized by, or in connexion with, a University. They are required to possess competent skill and knowledge of medicine, and of the sciences connected therewith, and of the English and Latin languages at least. The amount of this preliminary knowledge, and the time at which the possession of it should be tested in a candidate, are matters upon which the clause is silent; although the selection of a University for matriculation and examination must materially depend upon the manner in which these are defined. It might be supposed that a check upon any unfair advantage accruing to a particular University would be placed in the hands of the Council of Health; but this would be entirely an accident depending on the view of the majority. The practice of the profession throughout Great Britain will be in the meantime thrown open, and the Council may allege that the amount of preliminary knowledge, and the time at which it is tested by examination, may be safely left in the hands of the University at which the student is matriculated. At any rate there is no protection against such a decision, and the Council may perchance hold the opinion expressed by the medical faculty of the University of Edinburgh, before the Parliamentary Commissioners, *i. e.* "that the habits of a student who has gone through a very long and varied course of literature and science," (this is an exaggerated statement of what is really required) "are not those which will fit a man for that kind of intercourse with the world by which a physician must live."

According to Professor Quain, and we believe him to be correct in the statement, the Scotch Universities, with the exception of that of Aberdeen, which, however, has latterly been obliged to succumb in this respect, have always advocated, and still conti-

* Letter to the Right Hon. Sir James Graham.

nue to advocate, "the lowest amount of previous education" in their graduates. Many eminent physicians and surgeons, however, who were not connected with the University, held a contrary opinion, and by this the Parliamentary Commissioners appear to have been guided in their Report.

Under the new Bill it is left entirely optional to Universities to examine when, and to what extent, they please, into the general knowledge and education of candidates for the diploma; and in this respect such a degree of latitude is allowed, that one University may easily gain an advantage over another, by sending forth an inferior class of graduates,

In the University of London, which it is important to observe is not of itself a medical school, nor are all its examiners the teachers of the graduates who come before them, it is ordered that the candidate for the degree of Bachelor of Medicine must have taken a degree in arts in a University, or must have passed the matriculation examination, before he can present himself for the first examination. It is easy to suppose, that if any University were to regard this test slightly, and to apply it at any time during the course of study to the candidates for the diploma, they would obtain a considerable advantage over other Universities; for we believe that a great number of students would flock to that locality where the minimum of preliminary knowledge was required; indeed, we should here find congregating the rejected of other Colleges and Universities. As a proof of this, we may cite the evidence of an Aberdeen professor, who states that "in the year 1826, that University required that no candidate should be admitted to examination for a medical degree, unless he held a degree in arts, and having allowed reasonable time to elapse for

intimation before enforcing the rule, the University did not alter the regulation until the end of fourteen years, when it was compelled to abandon it, finding itself unable to maintain the regulation single-handed; and it experienced the mortification of being obliged to adopt too low a standard of attainment in preliminary education." As the Medical Reform Bill at present stands, the University of London must, like that of Aberdeen, either abandon the position of insisting upon a degree in arts as preliminary to the medical degree, or such an alteration should be made as to compel all Universities to adopt the same standard for granting their degrees*. The evidence given before the Parliamentary Commissioners shows, that the object of the Scotch Universities was to place the degree within the reach of those who had the minimum amount of preliminary education. The effect of this has been, that while in England every effort has been made to raise the medical practitioner, by demanding good preliminary knowledge, in Scotland there appears to have been no advance whatever.

Professor Quain has pointed out that the 22d and 23d clauses of the Bill are so drawn, as exactly to suit the practice of the Scotch Universities; and it is not a little remarkable that they are opposed to the recommendation of the Commissioners, and the evidence of Dr. John Thomson, Dr. Abercrombie, Dr. Davidson, and other extra-academical men of professional standing, all of whom advocated a good preliminary education. If the Inceptorship be granted without the previous posses-

* Much has been said about the importance of the principle in the Bill, that every individual should have an equal right to practise throughout the United Kingdom. The equity of this principle is undisputed, but it is at the same time only a matter of common justice, that all Universities and Colleges should confer that right upon a uniform standard of qualification.

sion of a degree in arts—if the candidate be required to have only a knowledge of the English (!) and Latin languages *at least*,—and his competency be tested at any period of his studies by men who have already openly declared their opinion, that “habits of business” and “a knowledge of the world” are of more importance to a physician than a good preliminary education,—it is very clear that Edinburgh will become the University for the new Inceptors; and unless the English Colleges and Universities lower their standard in respect to general attainments, to meet the Edinburgh level, it is equally certain that the English schools will be deserted. The licentiates who receive their diplomas from the English Colleges may be in reality a superior class of men, but the Inceptors may take rank before them as graduates, and will be entitled to all their rights and privileges at less cost in respect to general and medical education. Besides, if a man can enter the profession more easily as an inceptor than a Licentiate, it is not difficult to foresee which path will be chosen by the majority. The Bill certainly makes no provision respecting the period of study and form of examination for licentiates; but it is not likely that these will be lower than they are at present and if not, they are far above what would be necessary under it to constitute an Inceptor.

From these considerations, it appears to us to be not all surprising, that the Bill should meet with such favour from the University of Edinburgh, or that in a late number of a journal which is supposed to represent the sentiments of the University we should find the following passage. “We have only to express the hope that the Bill will be speedily passed into law, and that in so doing it will preserve all its essential characters.” Among these essential

characters, there is certainly on which appears to us to be the creation of a grand monopoly with respect to medical education and the granting of degrees.

Reviews.

Practical Remarks on some Exhausting Diseases, particularly those incident to Women. By SIR JAMES EYRE, M.D. London, 1845. 8vo. pp. 75. Churchill.

THIS little work is written in a style as unpretending and as free from dogmatism as it could have been had the author considered himself a mere acolyte in the profession, rather than what he really is, a man of experience. It affords a pleasant contrast to the shoals of thin inanities, in the form of “Remarks” and “Observations,” which are continually disgusting the profession by the shallowness of their facts and the depth of their assurance.

The object of this essay is to recommend the oxide of silver as a remedy in pyrosis, in certain cases of gastric disorder, in hæmoptysis and hæmatemesis, but, above all, in atonic menorrhagia, whether the result of unduly prolonged menstruation, as a sequela of labour or abortion, as occurring during pregnancy, or as caused by organic lesion. This remedy was recommended by Mr. Charles B. Lane, in a paper which appeared in the *Medico-Chirurgical Review* for 1840, where it was stated that M. Serre, of Montpellier, believed it to possess anti-syphilitic powers, the dose being from half a grain to six grains in twenty-four hours. Its usefulness was proved in gastrodynia, pyrosis, menorrhagia, hæmorrhage from the bowels, in diarrhœa, in one case of irritable bladder, and in another where there was colliquative perspiration; its effects are stated to have been speedy, and to have been produced without a single bad symptom. Dr. Golding Bird is reported to have tried it in one hundred cases, and “thinks well of it in menorrhagia,” considering its properties to be tonic and to a certain degree sedative. Dr. Clendinning thought it useful in epileptic and gastralgic affections. The result of Sir J. Eyre’s observations has

been fully confirmatory of the high character here given of the oxide.

The author proceeds to record his experience of this remedy in pyrosis, hæmoptysis, and menorrhagia. In the first of these diseases, pyrosis, he considers that "the oxide of silver, given in half-grain doses thrice daily, will prove more effectual than any medicine which has yet been employed." It has not once failed in his hands. In seven successful cases, all occurring in females, the medicine produced a cure within six weeks; in most of the instances its use was continued for nearly a month, but in one or two this was rendered necessary only by relapses consequent upon accidental circumstances. In nearly all, great improvement took place in a few days. Constipation was present in most of these cases; and this had to be removed previously to administering the oxide. Three cases of gastralgia in which it was successfully used, are also related.

Six cases of hæmoptysis, and two of hæmatemesis, in which the oxide was given, are next recorded. With regard to the instances of the former disease, we cannot altogether agree with the author that "in these cases enough has been detailed to evince the great power of the remedy," for the following reasons:—its effects upon the disease appear to have been by no means prompt; thus, in one case, the hæmorrhage was stopped in five, and in another only in ten days. In three others the medicine is stated to have produced its effect "soon," "progressively" (within a fortnight), and "gradually." In the remaining cases the time occupied by the cures appears to have been nearly a month. We doubt not that in most of these instances, the author had reason to believe that his remedy was productive of benefit, but it is not at all proved that it was the cause of the cessation of the hæmoptysis in one or two of them,—the first and fifth, for instance, where, as the bleeding appears to have continued for a month or more after the medicine was employed, its cessation may, at length, have been due to natural causes. In not one of them does the hæmoptysis appear to have been checked by the oxide sooner than it probably might have been by the ordinary remedies; nor indeed by any means so soon as would have been necessary for the safety of the patient, had the symptoms been of a very urgent cha-

racter. Judging merely from the evidence afforded by these six cases, it would appear that the oxide of silver (given in the common doses) does not put a stop to the hæmorrhage until after its administration has been continued for at least five days, which, of course, would not answer in aggravated cases. In many instances it becomes necessary to check the bleeding within a few hours, and this we often can do with the diacetate of lead in conjunction with the other ordinary means. Still, in less urgent cases, there is great advantage in possessing a remedy which, although it may act slowly, has not the well-known disadvantages of the lead, or, as it is alleged, of the nitrate of silver, in causing discoloration of the skin. It is impossible to help noticing how large a quantity of blood is reported to have been coughed up at one time by most of the patients with hæmoptysis, whose cases are here given; in five out of the six the smallest quantity stated to have been expectorated was half a pint, and in two it was from a pint and a half to a quart. Of course persons with hæmoptysis do occasionally cough up quantities of blood even larger than those here mentioned, but this does not usually happen. The author appears to have trusted altogether to the statements of the patient, whose account of the amount of hæmorrhage are proverbially always exaggerated.

The author's treatment of various forms of menorrhagia by this remedy appears to have been far more certainly successful; discharges of very long standing often yielding under its use in less than a week. As the oxide of silver is immediately converted into the chloride, in contact with the gastric secretions, it may be a question whether this salt might not be substituted for it. We shall not, however, enter any further into details, but we recommend to the profession an attentive perusal of this useful little essay.

The Prescriber's Pharmacopœia; containing all the Medicines in the London Pharmacopœia. By a PRACTISING PHYSICIAN. 3d Edition, pp. 132. Churchill. 1845.

THIS little work, which has now reached a third edition, has the simple form of a pocket-book, and is therefore well fitted for a pocket companion. That

it has in a short period gone through two editions, is a clear proof of its having met with a very favourable reception from the profession. It is well fitted to occupy, in England, the place which the "*Nouveau Formulaire Pratique*" has for a long time held in France. The arrangement is extremely simple, being founded on the properties of the drugs and pharmaceutical preparations. It is divided into three parts: the first treating of remedies for *internal* use, containing formulæ, doses, &c.; the second, of remedies for *external* use, the latter including the safe preparations for the employment of the powerful alkaloids by the endermic method; and in the last part we find a summary of various matters interesting to the practitioner, as, for example, an account of poisons and their antidotes; the temperature of baths; the proportion of opium, mercury, arsenic, and antimony, in the more common medicinal preparations; the proportion of doses, according to age; and the temperature and properties of the principal mineral waters in England and the continent. We regard it as a most useful compendium of information: it requires only to be more widely known, in order to have a still wider circulation.

Hospital Reports.

GUY'S HOSPITAL.

Scirrhus Stricture of the Colon—Communication between the Colon and Stomach—Death. Reported by Mr. WHITBOURN. Admitted, Nov. 6, 1844, under Mr. Morgan, for carcinoma of the umbilicus.

M—C—, aged 64, a widow of Scotch extraction, the mother of a family, of temperate habits, and general good health, residing at Mile End. For five years she had had a protrusion at the umbilicus, in size about a third of a hen's egg, soft and elastic. About a year after this, she suffered from what was called inflammation of the bowels. During the course of the year immediately preceding her admission, she had been obliged to resort to aperient medicine to relieve occasional constipation; and had experienced general abdominal tenderness. During the latter half of the above period, the protrusion at the umbilicus had become gradually harder, had assumed a bluish or purple colour, and was very painful. She applied a bandage, which, however, rather increased her sufferings. Suppuration afterwards took place, followed by discharge of unhealthy pus, mixed with blood.

On admission, the tumor was about the size of half-a-crown in circumference, and elevated nearly half an inch above the surrounding integuments; it was red, and very tender, and discharged a thin serous matter of reddish colour. The countenance did not indicate malignant disease. The processes of inspiration and defecation were accompanied with pain. Equal parts of the chloride of zinc and powdered opium were applied to the tumor, and the bowels were regulated by purgatives, chiefly in the form of enemata. On the 16th, the bowels were confined, and she first complained of sickness, followed, on the next day, by bilious vomiting, and severe abdominal pain. Tumors were now discovered, extending from the epigastric to the left hypochondriac region. On the 19th, the bowels had been relieved; the motion, passed with pain, was scanty, and contained shreds of disorganized mucous membrane; there were shooting pains about the umbilicus. From the 20th to the 21st she vomited about three pints of feculent matter, of dark colour, and liquid. The bowels were confined. On the 27th, it was discovered that the tumor was extending to the left lumbar region. On the 29th, more bilious matter was vomited, and the abdominal pain was more marked. The bowels were opened by means of enemata, as medicine by the mouth induced feculent vomiting: brandy and water and arrow-root were ordered. On Dec. 7th, she had vomited two pints of feculent matter, of greater consistence, which was supposed to have come from the large intestine. The vomiting was repeated on the 11th. On the 15th, the pulse was 54, small. On the 16th, she had passed a bad night: the pulse was 84; the urine small in quantity, and loaded with lithates. From the 16th to the 17th she vomited from two to three pints of dark-coloured blood, mixed with a very small quantity of feculent matter. She complained of much pain, the countenance was anxious, the pulse 120, weak. There was much hardness in the epigastric region, and on examining the abdomen, tumors were discovered in the ascending, transverse, and descending colon. On the 21st the vomiting had continued; the tongue was brown and dry; the pulse 120, hard. The catheter was required in the evening, and its use continued till the 26th, but it was observed that the strength was declining, though unaccompanied by any emaciation. On the 28th, the catheter was again required; bilious and feculent vomiting continued; the breathing became oppressed, the legs began to swell, and, on January 9th, emaciation was observed. On the 14th, the countenance was flushed and anxious; there was pain at the epigastrium; the pulse at the wrist was imperceptible. On the following day she

rallied slightly; but on the 17th, having vomited about three parts of a pint of faeculent matter, she died in the afternoon. The tumor at the umbilicus, for which she had come into the hospital, had been removed by the escharotics about three weeks after her admission.

*Account of the post-mortem examination,
by Mr. King.*

The lungs contained seven or eight round, coarse, reticular, creamy tubers, the size of nuts. An undefined scirrhus state of parts at the umbilicus; some adhesions about the liver and gland below. The left end of the arch of the colon was contracted and dense; from this there was a wide opening into a slough cavity, the size of an egg, hard and contracted, with a simple, free, sinuous canal into the stomach, near the mesian line.

Tubercles occupied the left lobe of the liver, the size of a child's head (with a partial coating of peritoneum, half an inch thick, even and semi-transparent) radiating, dissolving; watery and numerous tubercles in the liver, and about the described parts; also in, on, or about the uterus, scattered as beans. The cæcum only was distended. The ileum was large, the serous surfaces injected and grey.

ST. JAMES'S INFIRMARY.

*Case of Congestive Apoplexy, with supposed
Spontaneous Perforation of the Stomach.*

Communicated by J. G. FRENCH, Esq.
Surgeon to the Infirmary of St. James's,
Westminster.

IN the case about to be related the deceased was a little girl of a lively disposition, and between two and three years of age. She had been labouring under hooping-cough for a considerable period. This, however, had latterly produced but slight inconvenience. Her appetite was in general very good, and her parents thought she ate too much food. For some time previously to the attack about to be described, the child had been observed to complain occasionally after her meals, of a sensation as if she felt a bone in her stomach. As, however, her health did not appear to be affected, no particular attention was paid to this by the parents. On Saturday, the 18th January last, while engaged in play, she was suddenly observed to fall into a sitting posture,—she then jumped up, presented a frightened appearance, vomited, and became convulsed and insensible. On inquiry, it was found that she had eaten her dinner as usual at two o'clock, and the attack first mentioned came on at half-past five. Her dinner had consisted on that day of beef-tea, salt beef, pease pudding, potato, and suet dumpling.

The child was immediately undressed and

placed in a warm bath, when it was observed that the chest appeared to be distended by a considerable swelling, which extended downwards into the abdomen. Leeches and a cold lotion were applied to the head; an attempt was made to administer calomel and castor oil, but unsuccessfully, and an enema was used. The child, however, did not rally, but remained in a state of complete insensibility from the attack until it died. Death took place at half-past four o'clock the following morning,—therefore twenty-three hours after the seizure.

Inspection.—This was made three days after death. The brain was found highly congested throughout its whole substance; the membranes were also congested, but to a less degree. The ventricles contained no fluid. In the chest the heart and lungs appeared perfectly healthy; the only exception to this was that the lining membrane of the larger bronchial tubes was somewhat reddened. The most remarkable appearances were found in the abdomen. The cardiac extremity of the stomach was perforated by an aperture of about three inches in diameter. It presented a wide, open, irregular laceration; the edges, soft, thin and membranous, running into shreds like those observed in spontaneous perforations of this organ. There was no thickening of the coats of the stomach in any part, nor any appearance of disease,—in one or two patches near the aperture, the coats appeared to be slightly thinned. The mucous membrane forming the edge of this aperture was of a dark bluish black colour. There was only a thin layer of mucus on the stomach, no solid or liquid matter, nor any appearance of food. It seems that only a small quantity of tea was administered in the twenty-three hours during which the child survived the attack, but it is doubtful, from the account given by the parents, whether even this was swallowed. There were no traces of the meal which the child had made, three hours and a half before its seizure; a fact further established by iodine water having no effect upon the contents of the organ. Nothing appeared to have escaped from the aperture; there was no sign of extravasation, no mark of peritoneal inflammation, nor any softening of the spleen or surrounding structures in the neighbourhood of the perforation. The mucous membrane, it should be observed, was entirely free from any trace of inflammation.

These appearances were considered to be so remarkable, that an accurate drawing of the stomach was immediately made.

The intestines were healthy, with the exception of a patch of redness about the size of a sixpence in the mucous coat of the duodenum. All the other organs were healthy.

REMARKS.—The first question which presents itself is, whether this was a case of death from poisoning or disease; for it occurred under such circumstances as to render a coroner's inquest necessary. The facts detailed, as well as the negative proofs derived from an analysis of the contents of the stomach, show that this could not have been a case of poisoning. The perforation might have been ascribed to a powerful irritant, like sulphuric or oxalic acid; for the blackened appearance of the mucous membrane at the aperture somewhat resembled the effects of these poisons; but, 1st, the symptoms did not come on until nearly four hours after the last meal taken, whereas these acids produce their effects immediately; 2d, the symptoms were not those of an irritant poison; 3d, there was no sign of inflammation in the stomach; 4th, no appearance of the presence of these two acids or any other poison in the stomach. A narcotic poison might account for the symptoms, but not for the perforation; still, it is impossible to admit that a narcotic poison had been taken:—1st, the symptoms came on suddenly, and about four hours after the last meal; 2d, there was no appearance of narcotic poison either by the odour or by the application of tests. The supposition of poisoning, for these reasons, cannot therefore be admitted.

With respect to disease, the principal question to be considered is whether the perforation of the stomach took place during life, and was the cause of the symptoms and death, or whether it was merely the result of post-mortem changes. The child had occasionally complained of pain in the region of the stomach, as of the sensation of a bone in her side after eating, but she had not suffered from any disease of the organ, and her appetite was good even up to her last meal. The symptoms and appearances are wholly unlike those observed in death from perforation of the stomach as a result of disease. In these cases the person is suddenly seized with the most violent and excruciating pain, vomiting, and other symptoms indicative of mortal collapse. The intellectual faculties are retained, and the individual dies from peritonitis. After death an aperture is found, commonly small, well defined, with thickened edges sometimes discoloured,—marks of disease in the mucous membrane (ulceration) in or near the seat of perforation,—extravasation of the contents of the stomach,—with the well-marked signs of peritoneal inflammation in the abdominal cavity. On comparing this description with that of the symptoms and appearances in the case of the deceased, they will be found to be wholly dissimilar. On the other hand, the perforation presented all the characters which have been assigned by pathologists to those spontaneously produced by chemical action, either

after death or during the last moments of life,—as, for example, its situation at the cardiac extremity,—its size, occupying nearly the whole of that portion of the stomach,—the thin, shreddy, pulpy, and blackened edges,—the absence of any sign of disease, as inflammation, ulceration, or thickening in the mucous membranes; all these are circumstances which appear to point to this, as the true explanation. It is perhaps somewhat unusual to find the stomach thus extensively perforated from spontaneous causes in so young a subject, and admitting the correctness of this view, it appears to show that for the production of spontaneous perforation it is by no means necessary that there should be food in the stomach, or that a meal should have been made recently before death.

Death was ascribed to congestive apoplexy, an opinion founded on the symptoms, coupled with the highly congested state of the brain and its membranes.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Tuesday, April 22, 1845.

DR. WATSON, VICE-PRESIDENT,
IN THE CHAIR.

Two Cases of Formation of Artificial Pupil, with the description of a new instrument for seizing and detaching the Iris. By W. R. BEAUMONT, Professor of Surgery in the University of King's College, Toronto, Upper Canada, &c.

IN bringing forward these cases, the object of the author was to present to the notice of the Society a forceps which he has invented for seizing the iris, and detaching its ciliary margin from the corpus ciliare, or for drawing any portion of the iris through a wound in the cornea. After noticing the instruments used in these operations, and particularly the fine hook which is recommended by Mr. Lawrence, he remarks that the hook sometimes tears its way out of the iris, instead of detaching it; but in using the forceps suggested by the author, this laceration of the iris without its detachment never occurred, and he never failed, in any instance, in seizing the iris at the first attempt, and close to its ciliary margin. The hook may possibly, in transfixing the iris, wound the capsule of the lens; the teeth of the forceps are too short, and are set in a direction which causes them to enter the iris obliquely. The point of the forceps, when the blades are closed, is perfectly smooth, the teeth being then concealed, so that the instrument may be introduced into the anterior chamber without risk of wounding any other part

than that portion of the iris which it is the operator's intention to seize. After giving directions as to the mode in which the instrument is to be used, the author concludes his paper by narrating two cases. One was a case of leucoma, with contracted and adherent pupil, in which an artificial pupil was formed by detachment of the iris from the ciliary ligament. The vision afterwards gradually improved, so that the patient was able to maintain himself by his labour: before the operation, he could only distinguish light from darkness. The other was a case of central leucoma of the right eye, the pupil elongated towards the temple by a previous operation for artificial pupil. An artificial pupil was formed by detaching the iris from the upper part of the ligamentum ciliare, and by excision of some of the detached portion of the iris. Vision was so much improved by the operation that the patient was able to read large print, and to sharpen the teeth of his saw.

MR. CESAR HAWKINS said that it appeared to him that the two cases detailed in the paper before the Society were not very favourable to the instrument, and could scarcely be regarded as recommendations to its employment. In one only of these cases did it succeed in completing the operation of separating the iris from the ciliary ligament; for in the second case the instrument somehow became entangled in the iris, and had to be cut cut.

Case of Remarkable Hypertrophy of the Fingers in a Girl: with a notice of some similar cases. By T. B. CURLING, Lecturer on Surgery, and Assistant-Surgeon to the London Hospital.

Eliza Hitchcock, aged 15, the subject of this congenital malformation, is a pale sickly girl, the daughter of poor parents. On the right hand, the fore, middle, and ring fingers are of unusual size. The enlargement of the fore and ring fingers is only slight, but the middle one is of extraordinary proportions, measuring as much as five inches and a half in length, and four in circumference. On the left hand, the thumb, index, and middle fingers, are hypertrophied. The index-finger, which is most enlarged, measures five inches and a quarter in length, and four in circumference. The middle finger has a lateral inclination, occasioned by the displaced extensor tendon, which forms a bridle along its outer edge. All parts of these hypertrophied fingers are equally developed in excess—the bones, articulations, integuments, and nails. The two largest fingers are fixed in an extended position, and the author attributes the girl's inability to bend them to the flexor muscles not having acquired a development corresponding to the fingers upon which they act.

The author observes, that in this remarkable example of partial hypertrophy, there is an apparent absence of all those circumstances which seem favourable to excessive growth—a feeble constitution, sparing nutriment, no extraordinary exercise of the part, and no enlarged vessels or activity of circulation. It would seem as if the formative powers which we see in some few cases exercised to excess in every part of the frame, so as to make a giant, had been limited, in this instance, to an insignificant part of the extremities.

The paper contains a communication from Professor Owen, giving an account of a case analogous to the preceding one. The subject was a child, two years old. The middle finger of each hand was nearly twice as long, and more than twice as thick, as the index-finger.

The author gives the particulars of a hand, a cast of which was given to him by Mr. Dimond, of Frith Street. It is from a Spaniard, the governor of a fort in the Philippine Islands, and presents congenital hypertrophy of the first and second fingers of the right hand. The second, which is of enormous size, had the same kind of lateral inclination as was observed in one of the fingers of Eliza Hitchcock. The author also describes a cast contained in the museum of King's College, London, of the hand of an adult in which the middle finger is hypertrophied, with a slight lateral inclination.

The author, after noticing the rarity of this malformation, refers to two published cases of it—one recorded by Mr. Power, of Dublin, the other by Dr. John Reid. In the former, the fingers were divaricated from the middle. In all the four foregoing cases in which the hypertrophied fingers were bent to one side, the author suspects that the inclination was produced, as in the case of Hitchcock, by the tension of the displaced extensor tendon, which had not elongated in proportion to the increase in the size of the finger.

The author notices whether it be possible, by any mode of treatment, to arrest the inordinate growth of the fingers in early life. He doubts if this could be accomplished by any other means than by firm and long-continued pressure; but, in addition to the suffering attending it, the impairment of the functions of the part caused by pressure constitutes an insuperable objection to its employment. In a case where one finger only was enlarged to a great extent, and nearly useless, he recommends its removal. In other cases, the enlarged finger might be reduced in size by amputation of the distal phalanx.

The paper is concluded by a brief notice of two cases of hypertrophy of the toes.

Description of a Malformation of the Duodenum. By ROBERT BOYD, M.D. Communicated by ROBERT LEE, M.D. F.R.S.

This morbid specimen was from a male still-born infant. The duodenum was enlarged, and appeared like a bladder two-thirds filled, and contained a greenish-coloured fluid. The lower or most distant part from the stomach was imperforate, and of larger calibre than the upper part, so that the malformed duodenum, as exhibited in the preparation, is somewhat of an oval shape. The intestine is completely closed by a transverse membrane at the lowest part: $2\frac{1}{4}$ inches above this, a valve extends across, nearly half closing the gut, proceeding from its concave side. Around the membrane which closes the duodenum the small intestine is attached, and, when dried and distended with air, is only about the thickness of a writing-pen. The author, in conclusion, refers to various writers who have given an account of similar divisions, and other malformations of the intestinal canal.

A Case of Abscess in the Groin, attended with Symptoms of Hernia, from which two Lumbrici Teretes and afterwards Fæcal Matter were discharged, and the patient recovered. By THOS. HOWELL, Esq. of Risborough. Communicated by ALEX. SHAW, Esq.

John Stevenson, aged 70, was attacked with symptoms of strangulated hernia. The author found a small hard tumor, about the size of a hen's egg, in the right inguinal region, lying over Poupart's ligament, about midway between the internal and external abdominal rings. At first he supposed it to be a hernia, but on careful examination could detect no impulse on coughing nor detect a neck towards the internal ring, and the tumor was not in the precise situation of inguinal hernia, and he was led to conclude that it was an enlarged inguinal gland. The symptoms were relieved by calomel and opium and a dose of castor oil, which acted freely. After two or three days phlegmoneous inflammation took place, and on fluctuation being perceived the part was opened and four ounces of pus discharged. On the poultice being removed next morning, two worms (*lumbrici teretes*) each from five to six inches long were found in it. After this, fæculent matter continued to escape from the wound for three weeks. He also passed per anum fæces, but not of so bright a yellow colour as that from the groin. The discharge from the wound gradually diminished, and in five weeks the author succeeded by means of pressure in healing this orifice. The patient stated that he never had any hernia.

MR. CESAR HAWKINS would allude to

one point in the paper, particularly as he was afraid it had been a source of error in diagnosis in some other cases. He referred to the fact of the medical attendants of the case detailed having come to the conclusion that the tumor was not a strangulated hernia, in consequence of the absence of all impulse in it on the patient coughing. This was really one reason for concluding that the hernia was strangulated. In nine out of ten cases of strangulated hernia no impulse would be communicated to the swelling on coughing.

DR. CHOWNE mentioned a case which bore some analogy to the one under consideration. It occurred some years since, and was one of constipation, to relieve which the patient swallowed a quantity of quicksilver. A tumor subsequently formed in the groin, and opened by sloughing. Two ounces of quicksilver came away, with fæcal matter, from the opening. The symptoms presented were similar to those in the case under consideration. The patient eventually did well.

MR. ARNOTT, some years since, had a case under his care at the Middlesex Hospital. The patient, a young girl, had an abscess formed on the right side, in the situation of that in Mr. Howell's case: the integuments sloughed, and there was a discharge of fæcal matter. The patient recovered. He agreed with Mr. Hawkins respecting the absence of impulse in the tumor on coughing, in strangulated hernia. The last case of hernia on which he had operated was an instance of this kind. The patient was an old woman, labouring under strangulated femoral hernia. Coughing imparted no impulse to the tumor. He pointed out this peculiarity to the students, and explained his reasons for operating. The patient recovered from the proceeding. The surgeon was often puzzled in reference to abscesses having communication with the intestine. He had a short time since been consulted in a case of hernia, in which an opening had been made into a tumor situated in the groin, and which had been decided not to be hernial, because there was no impulse imparted to it on coughing. The surgeon was surprised to find a quantity of fæcal matter follow the knife, and he became alarmed. The abscess was on the left, not, as usual, on the right side. No hernia existed, but there was no doubt a communication between the abscess and intestine. The patient recovered.

Case of Traumatic Tetanus successfully treated by large quantities of Wine and Brandy, with other means. By JAMES WILLIAM ILOTT, Esq. of Bromley, Kent.

The patient, a robust man, aged 30, was thrown from his chaise, Nov. 28, and met with a

compound fracture of the tibia and fibula, with considerable injury to the soft parts. By extension the bones were placed in a good position, and it was determined to save the limb. The patient went on remarkably well till the 12th of December, when tetanic spasms first commenced. Healthy granulations had formed, and were covering the denuded bone. The spasmodic action affected the muscles for a time and then gave way, the muscles of the jaw being those mostly affected. On the 14th he complained of cramp and spasm in the chest. A blister was applied, and calomel and cathartic medicine administered. 15th. The pain and spasm of the chest were somewhat relieved, but he was very weak. He was ordered brandy and water, and medicine, with ether, every two or three hours, after which he somewhat rallied. He continued much the same to the 18th, when the tetanic symptoms were much increased in severity, and in the evening there was opisthotonos. Mr. John Scott saw him, and agreed in the propriety of continuing the stimulants, and suggested opiate enemata, and *Ol. Terebinth.* and *Ol. Ricini* internally. This treatment was pursued with little variation till the 21st, when he was observed to be extremely low, with a pulse about 40, and in a cold clammy perspiration. The quantity of brandy at this time administered amounted to rather more than three pints in the twenty-four hours. Every part of the muscular system seemed affected with spasm. Dec. 22d. He was much the same, but the wound was looking more healthy. Dr. Wilson saw him, and urged the continuance of the stimulants, but recommended the entire discontinuance of opiates. He also recommended a suppository compound of quinine, sesquicarbonate of ammonia, and camphor, to be administered every three or four hours. From this period he continued to improve, and on the 26th, all tetanic symptoms had disappeared. During the eight days at which the disease was at its height the patient took two gallons of brandy, besides wine, beef-tea, jelly, &c. Jan. 29th, the wound was nearly healed, and he was daily gaining strength.

In a supplement to this communication, Dr. Wilson remarks that the case affords a well-marked instance of traumatic muscle fever, and that the principle on which it was treated was one of unremitting stimulus and support, opium and all other narcotics being entirely laid aside on the tenth day of the attack. The extent and severity of the constitutional disorder were strongly indicated by the indifference of the patient to all the ordinary effects of the alcoholic stimulus. From this case he draws the important pathological inference, that tetanus, like fever, is a disorder of the entire system. Determined specially to the muscles, it is conti-

nually operative in the other structures as in the universal blood. Generated after a definite period of incubation, it requires time for its development, time for its cure. On these views and indications that treatment that assumes to be rational must address itself to the general business of nutrition, rather than to the partial agencies of the nerve. Under the great systematic error of our modern pathology, tetanus is encountered almost exclusively by opium and other narcotic poisons. There is no plausible theory to account for the preference of these fatal drugs. By experience they have long been utterly condemned.

MR. DAVIS had heard the conclusion of the paper respecting opium with surprise. He was convinced that many cases of tetanus, which had been the result of gun-shot wounds, had been saved entirely by the use of opium. The state of the medicine-chest was such when these cases occurred to him, that, with the exception of carbonate of ammonia and æther, it contained nothing which could be used with advantage in the disease. Opium, then, was the sheet anchor on which he had relied; not in small and useless doses, but in large ones, such as ten grains, which he had frequently administered, and on one occasion had increased the dose to twenty grains. Mercurial ointment had been applied to the surface, but he believed without benefit. Time, as had been said, might modify the disease, but in his cases the patient would have sunk but for the opium employed.

DR. KING had heard of two cases of tetanus treated by Dr. Sutton, of Greenwich, in which the patients recovered, from an application to the entire surface of a very powerful opiate liniment, in which a pound of opium was dissolved. He had tried the same plan in a case of his own, but such was the sedative effect of the application, that the heart's action was arrested, and the patient sunk. Had stimulants in his case been freely administered, he thought the patient would have recovered. However valuable opium might be in this disease, stimulants were also necessary. He briefly referred to two cases of tetanus successfully treated by the tobacco enema.

DR. SNOW remarked that the case under discussion differed from most cases of traumatic tetanus, as in this instance the disease came on after long-continued pain and considerable purulent discharge. It occurred more generally soon after injury, and whilst the constitution was not much reduced in strength. It commenced in this case with spasmodic twitches, such as might result from mere debility, and which he had recently seen in a patient reduced by rheumatism. The treatment pursued in the case under debate had been doubtless applicable,

and best suited to it; but before we could lay down a law for the treatment of tetanus generally by these means, we must have further experience.

MR. BLIZARD CURLING considered that the merit of carrying the case to a successful termination was due to Messrs. Scott and Ilett, who had attended entirely to it for the first ten days, up to which period no material alteration had been made in the treatment pursued. It was known that generally, if a case of tetanus could be carried over ten days, the patient usually recovered. He mentioned a case of tetanus occurring in the London Hospital, under Mr. Scott, in which the same treatment as employed in Mr. Ilett's case was successful. In a book which he, Mr. Curling, had published some years since on tetanus, he had given his opinion respecting opium in this disease; that opinion remained unchanged. He had recommended the use of stimulants and nutrition in the disease, because it was of an exhausting character, many patients, he believed, having died from exhaustion.

MR. SOLLY had lately had three cases of tetanus under his care, one of which only recovered. This recovery he attributed entirely to the free use of stimulants, which were administered night and day by a careful nurse. He regarded the employment of opium in this disease as injurious.

DR. JEAFFRESON regarded the addendum of Dr. Wilson as forming the main interest of the paper. He agreed with him that we should treat the disease on enlarged and general principles. We could lay down no arbitrary rule. He had seen many cases both of idiopathic and traumatic tetanus, and had found it treated successfully by a variety of treatment. The indications presented must guide us in our proceeding. Purgatives were called for when there was a general febrile condition; stimulants when there was exhaustion. In some instances neither opium nor stimulants were admissible, but he agreed with Mr. Davis as to the advantages occasionally of large doses of opium.

MR. SIMON regarded tetanus as a disease in which the mischief was reflected on a single system of the body from a local cause, and therefore that it could not be regarded as a disease affecting the general system. The fact of the vital functions, those of the nervous system and of the intellect, going on well to the last, supported this opinion. Stimulants and tonics acted in this disease, probably, by enabling the patient to outlive it, and not from any specific influence which they exerted over the poison of tetanus. The disease appeared in such cases to terminate naturally; this was particularly the case, he thought, when the disease was chronic. Tobacco he regarded as the only direct anti-

tetanic medicine—if we, indeed, had any such—which we possessed; this medicine soothed the spasm, and reduced the violence of symptoms generally. Time was thus given for the employment of nutrition and stimulation, and any other means which might be employed.

DR. KING replied to questions, that in the case he had treated by the external application of opium, the spasms were relieved, but the patient went into a fatal sleep. He considered that the free use of stimulants might have been attended with success. The quantity of opium employed was a pound; it was on the surface for twenty-four hours. The patient partook of a glass of wine at 12 P.M. At 3 P.M. the heart had ceased to beat.

MR. STREETER thought that the poisonous effects of the opium would be excited by such an extensive application.

MR. CÆSAR HAWKINS remarked, that time as a curative agent had not been alluded to. Like other vaunted remedies it was, however, occasionally of service.

DR. WATSON replied, that the element of time as a curative agent had been expressly alluded to by Dr. Wilson in the paper.

The Society adjourned to May 13.

Selections from Journals.

PHYSIOLOGY.

ACCOUNT OF A REMARKABLE FETAL MONSTER, BY DR. SPEEDY.

THE author was called to attend a woman in consequence of prolapse of the funis. The pupil, who had been in attendance on the case, stated that the prolapsed cord pulsated strongly before Dr. Speedy's arrival; it was evident that the child had been alive, but, when the author came, the pulsation had ceased. As no bad symptoms presented themselves, he determined to leave the case to nature. A head presented, and after forty hours' labour the woman was delivered without any untoward accident; but the child was found to have two heads. Upon first looking at the birth, it appeared that the right hand was the one properly belonging to the child, and that the other was adventitious. Upon dissection, however, this opinion proved to be erroneous.

The skeleton presented two heads, one a little higher than the other; these were supported on two vertebral columns, gradually converging, but each, with its perfect complement of vertebral bones, becoming fused about the sacrum. There was a single pelvis, and two lower extremities, complete in every particular. The external ribs of each vertebral column were normal; the internal ribs, proceeding from the nearly pa-

rallel vertebral columns, met at an equal distance from both ; and at their junctions produced a series of zygous prominences posteriorly, which collectively had the aspect of a third and intermediate spine ; the external ribs arched forwards, to be united with the sternum ; this bone was evidently formed by the fusion of two sterna in the median line. However, the aspect of the anterior part of the trunk presented a single thorax, although the ribs entering into its formation, were derived from two vertebral columns. On each side of this common thorax, there was a well-formed shoulder and arm. Dissection thus revealed two foetuses nearly perfect down as far as the pelvis ; but, upon looking at the cast of the recent children, no one would imagine that this was the case. The cast appeared to display a well-formed single child, with two upper and lower extremities, but with an additional head attached to it.

Upon dissection there were found two perfect apparatuses of deglutition ; two oesophagi ; two stomachs, both opening into a single duodenum ; and the rest of the intestinal canal was single : moreover there was a single liver, but its left lobe was as large as the right, if not larger. The urinary and genital apparatuses of this monster (a male) were single ; the testes had descended into the scrotum. The right portion of the diaphragm was deficient, so that the peritoneum and pleura were in contact in that situation. The contents of the thorax were very remarkable ; there were four lungs, two on each side ; two hearts fused with each other in the median line, with two systemic auricles between the ventricles : there were two aortæ and two pulmonary arteries ; one aorta arched to the left, the other, and smaller one, to the right : each arch gave off a subclavian and carotids corresponding to the upper extremity and head belonging to each foetus ; the arches of the two aortæ terminated in a single descending aorta. A ductus arteriosus sprang from each pulmonary artery, and joined the descending single trunk ; the veins returning from the upper extremities and head, united to form a single descending cava. In fact, the anatomy of the viscera seemed to show a transposition of the organs in one foetus, which permitted an easy fusion of the median viscera from above downwards. In this monster, there was a single umbilical cord of rather a large size, containing one vein and two arteries, and proceeding from one placenta.—*Dublin Hospital Gazette*, March 15th, 1845.

WOUND OF THE ANTERIOR LOBES OF THE BRAIN, AND PRESERVATION OF THE INTELLECTUAL FACULTIES UNTIL DEATH (28 DAYS).

THE following interesting observation was

communicated, a short time ago, to the Academy of Medicine at Paris, by M. Blaquière, member of the Academies of Madrid and Mexico. In the year 1843, there lived, in the quarter San Pablo, at Mexico, the family of an officer of cavalry. A son of this man—a boy of 12 years of age—was one day rashly playing with a loaded horse-pistol, his brother, $4\frac{1}{2}$ years old, being in the room ; when, by some accident, the pistol was discharged : the bullet struck the young child, traversing his head from temple to temple, and afterwards buried itself in the plaster of the opposite wall.

The child survived until the 29th day after the accident, and was, in the interim, seen by many Mexican and foreign physicians. When seen by M. Blaquière, upon the 20th and several subsequent days, he was found sitting up in bed, amusing himself with his playthings, and eagerly calling for more food than was allowed him ; he was lively and cheerful, except during the dressing of the wounds, manifesting the possession of all his mental faculties.

After death, it was found that the cranium had been perforated about $1\frac{1}{2}$ inches above the external orbital process on each side ; the opening produced by the entrance of the ball was smaller and more defined than that occasioned by its exit ; the anterior part of both hemispheres had been traversed by the ball ; in front of the canal occasioned by its passage, there was a layer of cerebral tissue, six or eight lines in thickness, and the grey matter above it was also intact ; the ventricles of the brain were uninjured.—*Bulletin de l'Académie Royale*.

SURGERY.

NEW FRACTURE OF THE HUMERUS.

DR. HOUSTON laid before the Pathological Society of Dublin some examples of a peculiar lesion of bone, which, he stated, had never been appreciated in its true light by the profession until demonstrated at that society by Mr. Smith ; he meant that lesion of the anatomical neck of the humerus to which the term impacted fracture may properly be applied. He had three specimens for exhibition. The great interest attached to the observation of this accident was the establishment of an analogy between it and a similar one, which also had been first noticed in that city by Dr. Colles, in connection with the femur, and called impacted fracture of the neck of the femur. Sir Astley Cooper, in a paper in the *Guy's Hospital Reports*, on fractures of the neck of the humerus, had described and even delineated this accident, but without taking any notice of the remarkable impaction to which the bones were subjected. An important prac-

ical observation made by Dr. Houston was, that in all his cases there had been complete and firm reunion of the fragments, by bone, and that, too, with only a trifling degree of deformity. With regard to the diagnosis of this injury, Sir A. Cooper, in the memoir above alluded to, says that the lower fragment gets forward, so as to admit of being pressed and felt under the pectoral muscle, and lays this down as one of the most characteristic symptoms of the injury. Dr. Houston shewed that, in his cases, and also in the drawings published by Sir A. Cooper and Mr. Smith, in which the fracture ran through the anatomical neck of the humerus, close to the articulating surfaces, the displacement of the lower fragment was more outwards than inwards, the impaction being of such a nature that the inner edge of the shaft was driven into the centre of the spongy part of the head; or, in other words, that the detached head was twisted half round, so as to be placed somewhat on the inside of the shaft; a position which the bones had manifestly taken and maintained from the first moment of the accident, and which rendered it physically impossible that the lower fragment could ever have been felt in the position which it has been said by Sir A. Cooper to assume, under the pectoral muscle. In all the cases of the kind of fracture known to Dr. H., the angle formed at the point of the lesion was salient outwards, viz. at the great tuberosity; and this was shown by him to contrast strongly with the deformity in a specimen in which the fracture had occurred in the surgical neck of the humerus, or close below the tuberosities, as here the lower fragment projected to the inside of, and beyond, the upper, in such a manner that it might have admitted readily of being pushed, when recent, in the direction of the axilla and pectoral muscles, and of being felt there.—*Dublin Hospital Gazette*, April 1, 1845.

FRACTURE OF THE NECK OF THE FEMUR, WITH PENETRATION OF THE TROCHANTER. BY M. ROBERT, SURGEON TO THE HOSPITAL BEAUJOU, PARIS.

THE author is of opinion that for the production of a fracture, with penetration of one fragment of bone into the other, it is requisite that the bone should present a conical form, so that the fracture occurring near the base of the cone, the smaller portion may pierce, and be imbedded in the larger one; that it should decrease in density from the summit to the base of the cone; and lastly, that the cause which occasions the fracture should tend to bring the extremities of the bone forcibly together.

M. Robert shows that the neck of the femur presents the anatomical characters just enumerated,—since being narrower in the

middle than at its extremities, it may be compared to two truncated cones, the one short and round, corresponding to the head, the other larger, and merging into the trochanters; again, the neck of the femur consists externally of a layer of compact tissue, giving origin from its inner surface to a multitude of laminae, which converge towards the head of the femur, and by crossing form an areolar tissue with very close meshes; inferiorly, on the other hand, the cancellated structure of the neck of the bone is less close; hence, these conditions render difficult the penetration of the head of the femur, by the inferior fragment, but greatly facilitate, and render almost inevitable, the entrance of the lower part of the neck into the trochanter, or upper part of the body of the bone. Almost all fractures of the neck of the femur are the result of falls upon the great trochanter. Of fifty-seven cases recorded by Sabatier, Dessault, and W. Smith, one only was occasioned by a false step.

The lower and inner part of the neck being continuous with the anterior surface of the body of the femur, whilst it is separated from the posterior face by a well-marked cavity, and by the projecting line which descends from the great to the small trochanter, accounts for the penetration being almost always in front, as well as for the rotation of the limb outwards. Indeed, the axis of the neck of the femur corresponds to the anterior third of the great trochanter, and the fall occurring upon the middle part of this apophysis, tends to efface the digital cavity, as well as to bring into contact the inner surface of the great trochanter, and the posterior surface of the neck, and to cause the protrusion of the latter anteriorly, so that the point fractured forms with the body of the bone an obtuse and prominent angle,—whence results the rotation of the limb outwards.

M. Robert observes that penetration is rare in intra-capsular fractures; he cites one example only, existing in the Musée Dupuytren, where the penetration was incomplete, and limited to the inferior and posterior part of the base of the neck.

On the other hand, it appears from the observations of various authors that although penetration is frequent in extra-capsular fractures, it is common only in old persons, especially those in whom the neck of the femur is voluminous. These fractures are usually seen in the base of the neck; anteriorly, they follow the line which extends from the great to the small trochanter; posteriorly, they are seen at one-fifth to one-fourth of a line from the slight ridge which connects these eminences; they frequently terminate above the small trochanter, but sometimes pass beyond it. The angle formed by the neck with the body of

the bone is diminished, and sometimes the neck undergoes a rotatory movement upon its own axis. Mr. Adams has recorded an instance where the fracture was incomplete, the upper border preserving its integrity, whilst the inferior surface was forced into the cancellated texture of the body of the bone. Penetration may be complete or incomplete; the latter being much the more frequent. Extra-capsular fracture of the neck of the femur is generally associated with fracture of the great trochanter, but this complication never exists in intra-capsular fractures.

M. Robert enumerates the following as the principal symptom of the fracture of the femur, with penetration, (1) slight shortening of the limb; (2) almost constant, but often slight deviation of the limb outwards; (3) pain, more intense and external, than when the fracture is intra-capsular. These are constant and most characteristic symptoms. (4) Ecchymosis upon the outer part of the thigh; (5) swelling over the situation of the great trochanter; (6) the capability of walking, after the fall which has occasioned the fracture; (7) the capability of raising the limb as a whole; (8) the resistance of the limb to any attempts at extension. Upon this last symptom, M. Robert founds a caution as to the treatment of patients who have sustained this accident;—reprobating repeated attempts at extension and rotation of the limb.

The prognosis is more favourable in these cases than in those without penetration, as the position of the fragments favours consolidation, so that the patient may move a little about the forty-fifth or fiftieth day.

The author's conclusions respecting the treatment are—that the surgeon should abstain from exercising traction upon the injured limb; that it is necessary to maintain it in a state of immobility; and that a constant lateral pressure should be exerted upon its outer surface. To accomplish these indications he places the patient upon his back, with a small cushion under the ham of the injured limb, and surrounds the hips with a tight bandage.—*Bulletin de l'Académie*, 1844.

MIDWIFERY.

REMARKABLE CASE OF DELIVERY DURING SLEEP.

M. SCHULTZE was called on the 25th of May, 1844, to attend the wife of an artisan, who had reached the full term of her fourth pregnancy. He found her lying in a state of profound somnolency, so that it was quite impossible to rouse her, either by violently shaking her or by applying to her nostrils the most powerful stimulants, such as ammonia and ether.

On the third day of this unnatural sleep,

the woman without awaking was delivered of a healthy, living, and well-formed male child. On visiting the female the following day, M. Schultze found that she had not long spontaneously awakened from her sleep; and as she had no recollection of her delivery, she was somewhat astonished to find that the child had been born without her having been aware of it.—*Annales D'Hygiène*, Jan. 1845.

REMARKS.—This case is of some importance in a medico-legal point of view, as it has been a debated question among medical jurists, whether such an event as unconscious delivery during sleep was possible,—some holding the affirmative, and others the negative side. We do not think that the question can henceforth be raised. Dr. Montgomery, of Dublin, has related a somewhat similar case, but in this, as well as in the one reported, the females had already borne children. It remains to be seen whether such an event is likely to occur in a primiparous female.

This case is also interesting in another point of view. We may have profound sleep, undisturbed by what is commonly a most painful natural process, taking place without reference to mesmerism, hypnotics, or any other species of charlatanism. Had this woman by accident previously undergone any manipulation from a mesmerizer, it would have been proclaimed as another marvel in confirmation of the truth of mesmerism, by those who are unable to distinguish in the occurrence of events the “*post hoc*” from the “*propter hoc*.” None of the operations reported to have been performed without pain during the alleged magnetic sleep present any thing more extraordinary, in a physiological view, than the case here reported.

CAUTION TO OPERATORS.

SIR ANTHONY CARLISLE related the following circumstance as having occurred to an eminent surgeon, within his own memory. A gentleman, residing about a post-stage from town, met with an accident which eventually rendered amputation of the limb indispensable. The surgeon alluded to was requested to perform the operation, and went from town with two pupils to the gentleman's house on the day appointed for that purpose. The usual preliminaries being arranged, he proceeded to operate; the tourniquet was applied, the flesh divided, and the bone laid bare, when to his astonishment and horror he discovered that his instrument case was without the saw! Luckily his presence of mind did not forsake him. Without apprising his patient of the terrible fact, he put one of his pupils into his carriage, and told the coachman to gallop to town. It was an hour and a half before the saw was obtained

and during all that time the patient lay in a state of great suffering. The agony of the operator, though great, was scarcely a sufficient punishment for his neglect in not seeing that all his instruments were in the case before he arrived. A butcher's or carpenter's fine saw would have been in such an emergency, a tolerable substitute for the missing instrument, and might have been found in any civilized neighbourhood in less than an hour and a half. This was a person of less resource than a provincial surgeon of our acquaintance, who, having to secure the femoral artery, upon a sudden emergency, made an aneurism-needle out of a piece of copper-wire; or than the Danish surgeons at the battle of Copenhagen, who, when all their amputation-knives had become so blunted as to be useless, from the number of times they had been used on that day, are said to have continued to operate with razors, the blades of which were kept steady by straps of adhesive plaster. A distinguished naval surgeon gained considerable credit, many years since, for an amputation which he performed with a common razor, and a carpenter's saw, while taking a passage in a cutter, where no surgical instruments could be procured.

M. PAYERNE'S EXPERIMENTS ON THE
POWER OF LIVING UNDER WATER ANTI-
CIPATED BY BISHOP WILKINS.

MERSENNUS tells us that there is in France one Barricus a diver, who hath lately found out another art, whereby a man might easily continue under water for six hours together; and whereas ten cubical feet of air will not serve another diver to breathe in, for half an hour, he by the help of a cavity, not above one or two foot at most, will have breath enough for six hours, and a lanthorn scarce above the usual size to keep a candle burning as long as a man please, which (if it be true, and were known) might be a sufficient help against this greatest difficulty.

As for the many advantages and conveniences of such a contrivance, it is not easy to recite them.

1. 'Tis private; a man may thus go to any coast of the world invisibly, without being discovered or prevented in his journey.

2. 'Tis safe; from the uncertainty of tides, and tempests, which do never move the sea above five or six paces deep. From pirates and robbers which do so infect other voyages; from ice and great frosts, which do so much endanger the passages towards the poles.

3. It may be of very great advantage against a navy of enemies, who by this means may be undermined in the water, and blown up.

4. It may be of a special use for the relief of any place that is besieged by water, to convey unto them invisible supplies and so likewise for the surprisal of any place that is accessible by water.

5. It may be of unspeakable benefit for submarine experiments and discoveries; as,

The several proportions of swiftness betwixt the ascent of a bladder, cork, or any other light substance, in comparison to the descent of stones or lead. The deep caverns and subterraneous passages where the seawater in the course of its circulation, doth vent it self into other places. The nature and kinds of fishes, the several arts of catching them, by alluring them with lights, by placing divers nets about the sides of this vessel, shooting the greater sort of them with guns, which may be put out of the ship by the help of such bags as were mentioned before, with divers the like artifices and treacherics, which may be more successively practised by such who live so familiarly together. These fish may serve not only for food, but for fuel likewise, in respect of that oil which may be extracted from them; the way of dressing meat by lamps being in many respects the most convenient for such a voyage.

The many fresh springs that may probably be met with in the bottom of the sea, will serve for the supply of drink and other occasions.

But above all, the discovery of submarine treasures is more especially considerable, not only in regard of what hath been drowned by wrecks, but the several precious things that grow there, as pearl, coral mines, with innumerable other things of great value, which may be much more easily found out, and fetcht up by the help of this, than by any other usual way of the urinators.

To which purpose, this great vessel may have some lesser cabins tyed about it, at various distances, wherein several persons, as scouts, may be lodged for the taking of observations according as the admiral shall direct them. Some of them being frequently sent up to the surface of the water, as there shall be occasion.

All kind of arts and manufactures may be exercised in this vessel. The observations made by it, may be both written, and (if need were) printed here likewise. Several colonies may thus inhabit, having their children born and bred up without the knowledge of land, who could not chuse but be amazed with strange conceits upon the discovery of this upper world.

I am not able to judge what other advantages there may be suggested, or whether experiment would fully answer to these notional conjectures. But however, because the invention did unto me seem ingenious and new, being not impertinent to the present enquiry, therefore I thought it might be worth the mentioning."—*Mathematical Magick*, 1691.

ROYAL COLLEGE OF SURGEONS.

List of Gentlemen admitted Members,
 April 25.—R. Roper.—H. Birkett.—C. T. Blackman.—R. Horton.—J. Ash.—M. Walling.—S. S. Dyer.—A. Fergus.—W. Cooke.—W. H. Freeman.—E. J. Wilson.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates,
 April 24.—R. M. Mann, Manchester.—T. S. Barringer, London.—H. A. Newell, Hormead, Herts.—T. Harrison, Halifax.

BIRTHS & DEATHS IN METROPOLIS

During the week ending Saturd. April 19.

BIRTHS.	DEATHS.	Aver. of 5 yrs.
Males.... 654	Males.... 479	Males... 491
Females . 665	Females . 449	Females . 472
1319	928	963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
 Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James.....	146
NORTH—St. Marylebone; St. Pancras; Islington; Hackney.....	183
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; City of London..	174
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar.....	189
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich..	236
Total	928

CAUSES OF DEATH in the Week ending May 20.

Col. A. Weekly Averages of 5 Springs; Col. B. of 5 Years.

	A.	B.
ALL CAUSES	928	888,963
SPECIFIED CAUSES	925	880,954
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases..	162	163,184
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	95	99,106
3. Brain, Spinal Marrow, Nerves, and Senses	160	155,159
4. Lungs, and other Organs of Respiration	318	267,292
5. Heart and Blood-vessels	28	24,24
6. Stomach, Liver, and other Organs of Digestion	53	63,71
7. Diseases of the Kidneys, &c..	15	6,6
8. Childbirth, Diseases of the Uterus, &c.	13	9,10
9. Rheumatism, Diseases of the Bones, Joints, &c.	12	6,6
10. Skin, Cellular Tissue, &c.	4	1,1
11. Old Age	53	61,70
12. Violence, Privation, Cold, and Intemperance	12	25,26

ROYAL OBSERVATORY, GREENWICH.

METEOROLOGICAL SUMMARY

For the week ending Saturday, April 19.

	Max.	Min.	Mean.
Height of Barometer ^a	30.13	29.33	29.87
" Thermometer ..	58.1	38.	45.3
Self-registering do.	83. ^b	25.	
" in the Thames water	47.5	45.	

^a From 12 observations daily.

^b Sun.

Rain, in inches, 0.29. Sum of the daily observations taken at 9 o'clock.

NEW MEDICAL BOOKS, ENGLISH AND FOREIGN,—For April.

(Printed in London, unless otherwise stated.)

Lectures on the Principles and Practice of Physic, delivered at King's College, London. By Thomas Watson, M.D. F.R.C.P. New edition, revised. 2 vols. 8vo.—The Power of the Soul over the Body, considered in relation to Health and Morals. By G. Moore, M.D. Post 8vo.—School Botany; or, the Rudiments of Botanical Science. By J. Lindley, Ph. D. F.R.S. A new edition, with nearly 400 illustrations. 8vo.—Practical Treatise on the Special Diseases of the Skin, enriched with Cases and numerous Notes, collected from the best Authors, and in the Cliniques at the Hospital Saint-Louis. By C. M. Gibert. 2d edition, corrected and considerably enlarged. Translated from the French, by E. Sheppard. 12mo.—The Philosophy of the Water-Cure: a Development of the True Principles of Health and Longevity. By J. Balbirmie, M.D. 12mo.

(Printed in Paris, unless otherwise stated.)

Mémoires de l'Académie royale de Médecine. Vol. 11. 4to.—Bonnet, Traité des Articulations. 2 vols. 8vo. et Atlas, 4to.—Müller, Manuel de Physiologie. Traduit de l'Allemand sur la 4^e édition (1844), avec des Annotations. Par A. J. S. Jourdan. Accompagné de planches intercalées dans le texte. 3 Liv. 8vo.—Milon, Elements de Chimie, comprenant les applications de cette science à la Physiologie animale. 8vo.—Hoefer, Nomenclature et Classifications chimiques, suivie d'un Lexique historique et synonymiques: comprenant les Noms anciens, les Formules, les Noms nouveaux, la Nom de l'Auteur et la Date de la Découverte des principaux Produits de la Chimie. 12mo.—Brière de Boismont, Des Hallucinations, ou Histoire raisonnée des Apparitions des Visions, des Songes, de l'Extase du Magnétisme et du Somnambulisme. 8vo.—Hubert-Valleroux, Mémoire sur le Catarrhe de l'Oreille moyen, et sur la Surdité qui en est la suite. 8vo.—Fiévé de Leumont, Mémoires de Médecine pratique. 8vo.—Blainville, Histoire des Sciences de l'Organisation, et de leurs Progrès comme base de la Philosophie. 3 vols. 8vo.

Berthold, A., über das Gesetz der Schwangerschaftsdauer. 4to. Goettingen.—Hennemann, A. die differenzielle medicinische Diagnostik mit Einschluss der Hautkrankheiten, nach den bewährtesten Autoren bearbeitet und in alphabet. Ordnung zusammengestellt. 8vo. Berlin.—Kirchgässer, Versuch inquisitorischer Verfolgung der ärztlichen Praxis. 8vo. Coblenz.—Leuzinger, F. H., das menschliche Nervensystem. Physiologisch bearbeitet. 8vo. Zürich.—Schmidt, C., zur vergleichenden Physiologie der wirbellosen Thiere. 8vo. Brunswick.—Stricker, W., Krankheiten des Linsensystems, nach physiologischen Grundsätzen. 8vo. Frankfurt a/M.—Hesselbach, Handbuch der gesamten Chirurgie. Vol. 2, Pt. 8, 8vo. Jena.—Leitzau, Lehrbuch der speciellen Therapie. Pts. 1, 2, 8vo. Berlin.—Universal-Lexicon der pract. Medizin und Chirurgie. Neue Aufg. Vol. 6, Pts. 1, 2, 8vo. Belle-Vue.

BOOKS RECEIVED FOR REVIEW.

Copeman on Apoplexy.—Hood on the Diseases of Children.—Sir J. Eyre's Practical Remarks.—Macilwain on Tumours.—Annual Report of the State Lunatic Asylum, New York.—Prize Clinical Reports, Queen's Hospital, Birmingham.—Guy's Hospital Reports: April.—Dr. O'Shaughnessy on Diseases of the Jaws.—Gibert on Diseases of the Skin, by Sheppard.—Robertson's Contributions to the History and Treatment of Sexual Diseases.—On the Power of the Soul over the Body, by G. Moore, M.D.—A History of Infusoria, Living and Fossil, by A. Pritchard, M.R.I.—Wienscholt's Lectures on Somnambulism, by Colquhoun.

Lectures.

LUMLEIAN LECTURES,

Delivered at the Royal College of Physicians.

By SIR GEORGE LEFEVRE, M.D. &c.

LECT. II.—*Morbid Poisons.—Scarlatina.*

Serous membranes.—The serous membranes, which Bichât considers synonymous with the lymphatic, or cellular, occupy the external surfaces of those organs which are lined internally by the mucous; all those most essential to life have an external coat formed by the serous membranes.

They differ essentially from the mucous, inasmuch as they are not continuous from one surface to another, but are isolated structures, and, upon the whole, are more extensive than the mucous.

Their distinctive character consists in forming a shut sac, which covers the organs, and might be dissected off entire. The familiar illustration of the double night-cap affords the most accurate idea of this structure. They furnish two external surfaces; one lining the cavity in which the viscus is lodged, the other covering the viscus.

The internal surface is free, and presents a polished appearance; it is lubricated by a fluid, and has an unconstrained moveable power.

The polished appearance which organs present is always due to their serous membranes. Where the peritoneal covering quits a portion of a viscus, as on the anterior surface of the bladder, the contrast is very striking.

In the relation that they bear to the organs which they protect and cover, they offer this difference to fibrous structure, viz. their vessels do not penetrate the organs; they have an independent existence. This is important in a pathological sense, because the affection of a viscus is not a necessary consequence of that of its investing membrane, and *vice versa*. Here is a pathological line of demarcation between the serous and mucous membranes.

Their internal structure is made up of a congeries of exhalants and absorbents, as prevails in the cellular tissue; and Bichât denies that the blood-vessels seen on their surface belong to their structure: but his views upon this point have been questioned in the present day.

Arachnoid.—In our pathological investigations of the serous membranes, there are none which deserve more attention, from the influence which this poison exerts upon them, than that exquisitely delicate membrane, the arachnoid.

We were first indebted to Bichât for a correct idea of the nature and functions of this structure; for previous to his time it was not recognised as a separate membrane, or, at least, its reflected character and constitution were not developed. It was from the consideration that all those viscera which are subjected to motion were protected by a serous membrane, which isolated them from contiguous organs, and facilitated their movements by the humidity of its surface, that he was led to the conclusion that the brain could not form an exception to this undeviating law, and that a serous membrane was destined to its service, as much as the pleura to the lungs, the pericardium to the heart, or the tunica vaginalis to the testis.

In his anatomical pursuits he found that it was distinct from the pia mater, which it in many places skimmed over, adhering to the eminences, but never dipping down into the anfractuosities of the brain. In this view of it, as proved by anatomical demonstration, it formed a shut sac between the dura and pia mater, so that the brain was exterior to its enveloping membrane, as the other organs which enjoy this structure. Its use is therefore of the greatest importance in modifying the pressure of the dura mater; it serves as a kind of water-bed between this and the brain.

The contents of this shut sac being a serous fluid, poured out by its exhalant vessels, and the conditions which it manifested under the influence of inflammation—becoming thickened, opaque, and covered with that viscous exudation which characterises the suppuration of the serous membranes,—all these circumstances were sufficient to establish its character.

It has been here, as in other cases, that morbid action has most contributed to develop the anatomical structure of parts. No injections have been able to penetrate this membrane, and it has been from function alone that we have drawn our inferences.

The disease of scarlatina has served as fully as most to develop its vascular structure; for in dissections of the brain, not only has serum been found effused into its cavity, but the vessels themselves have been seen injected with blood.

“When the tertiary action of the poison, (as stated by Dr. Williams), falls upon the membranes of the brain, the arachnoid is found injected, and serum effused into its cavity, and pus and lymph deposited in the sub-arachnoid tissue;” and other pathologists have stated that appearances of blood have been seen extravasated under the arachnoid.

There is a cellular tissue, which fills up these spaces, where the arachnoid skips from one prominence of the pia mater to another without dipping down into the anfractuosi-

ties; and this is especially the seat of infiltration from this disease, and more so than the shut sac.

It was Bichat's opinion, that the arachnoid dipped down into the ventricles, and lined them also, but this has been combated by other anatomists; nor, were this the case, would it afford the same protection of interposition between the dura and pia mater which a closed bag affords. He observed that, for the most part, dropsy of the arachnoid is confined to the infant state, nor is this effusion often found in that general hydropic affection which fills the other cavities.

This is attributable to the greater activity which is imposed upon the cerebral vessels at this period of life for the purposes of nutrition, and hence the predominance of head affections at this age.

The pathology of scarlatina adds weight to this opinion, for it is in this disease more than in all others that the head is most severely affected. In the less dangerous forms of this disease, delirium is a common symptom, even from the commencement—a circumstance which Heberden has stated to be of less moment in this than in all other fevers, nor by any means warranting the unfavourable prognosis which would be drawn from its occurrence in most other cases. This does not militate at all against the condition of cerebral excitement which produces it.

It is probable that in most of these cases, and in young subjects, there is an increase of serous fluid in the arachnoid cavity, which does not, from its being so isolated, give rise to the same symptoms as if it were poured into the ventricles, as it is readily absorbed again when the excitement has ceased.

Although the ventricles are not lined by the arachnoid, they are not the less furnished with a serous membrane, which performs the same office, and hence effusion takes place into their cavities as a sequela of this disease. This may be in some instances so sudden as to cause almost instant death, as in those cases of the water stroke, one of the mechanical causes of dissolution; or it may be by slow but constant action, giving rise to a most common result of the tertiary action of the poison—hydrocephalus internus.

This will naturally vary according to the intensity of the dose of the poison, and the excitement which it has occasioned. It may not always be so rapid as in the case of water-stroke, nor even in such, as stated by Dr. Williams, where, "upon the third day, a child, after having complained of headache, which soon became very violent, was seized with convulsions, which lasted nineteen hours, with scarcely any intermission. In this state the child was blind, and the pupils dilated. She was affected with oedema of the

face and hands, but she finally recovered." In other cases, where the symptoms have been much less severe, and the effusion consequently much slower in its progress, it has finally led to a more fatal issue.

In some well-authenticated cases, no indication of any serious mischief has been manifest till twenty or thirty days after the first attack, and when the patients have appeared convalescent, when symptoms of effusion have suddenly manifested themselves, the pupil has become dilated, convulsions supervened, and death speedily followed.

Dissection has detected great vascular congestion of the brain and membranes, and effusion of serum into the ventricles.

It is, indeed, but too true a saying as regards this disease, that the practitioner can never say that his patient is out of danger.

The further discussion of this subject would merge into the histories of hydrocephalus, which our limits will not allow us to embrace.

The next affection of serous membranes which is in the rank of importance is the pleura.

The effusions into the chest as into the ventricles, or into the arachnoid, may be sudden, as in the case before stated, or by slow degrees, constituting a chronic form of hydrothorax.

Inflammation of the pleura is a frequent occurrence, and is often attendant upon what is denominated an epidemic constitution of the disease, rendering it often very fatal. This has led to the free use of the lancet, and although the more distressing temporary suffering has been so relieved, the system has not rallied from the loss of vital power which it has sustained, so that the patient has rapidly sank, or that debility has succeeded which gives rise to dropsical effusions.

These effusions are not to be considered as, generally speaking, the result of the debility subsequent on the eruption, but as a tertiary action of the specific poison; they occur in the mildest forms of the disease, where no depletion has been practised, and analogy affords proofs of such consequences arising from specific poisonous action.

The virus of reptiles, when taken into the stomach, does not produce the primary effects of the exanthemata, yet dropsical effusions are the secondary consequences, as we are informed by the following anecdote, related by Dr. Stevens:—Mr. Wallace, of Virginia, took the whole of the poison from the fangs of a large and vigorous rattlesnake. This he made into pills—bags, venom, and all. He swallowed these, sometimes at the rate of four a day. They produced, he says, most heavenly sensations, and melancholy

was quickly changed into gay anticipations; but unfortunately these delightful feelings were followed by a general dropsy, which continued for a considerable period.

Peritoneum.—There is frequently considerable tenderness of the peritoneum at the very commencement of the disease, which continues often, and increases during its progress, leading to serous effusion into the cavity, and causing ascites. When this is combated by leeches at the commencement, such consequences are often avoided.

Heberden speaks of an enlargement of the testicle as one of the consequences of this disease, but it is perhaps a dropsical effusion which he describes, which is not of uncommon occurrence—even pus has been found in the tunica vaginalis.

Pericardium.—When the dropsy is general, the pericardium indicates its participation in the affection, and pericarditis is recognised by the effusion of lymph into its cavity.

The heart, says Dr. Gregory, sometimes becomes involved. A lady was seized with scarlatina at the period of parturition. The labour was long and severe. She perspired profusely. The heart laboured violently. The next day scarlatina appeared. The heart, exhausted by the preceding efforts, gave way, and in about fifteen hours from the appearance of the eruption became engorged. A frightful feeling of suffocation supervened, and the pulse for a few minutes was imperceptible at the wrist.

In the Maternity Hospitals, in the south of Germany, it is a fact established that pregnant women mostly fall sacrifices to this disease, if attacked during pregnancy.

Synovial membranes.—It is to Bichat that we are likewise indebted for a correct knowledge of the structure of the synovial membranes. This fluid was attributed to glandular secretion from an apparatus within the joints, but this celebrated anatomist demonstrated its real nature. He found, both from chemical analysis and pathological evidence, that it was of the same nature as the contents of other serous membranes.

The synovial belong to the class of reflected membranes, and are placed as shut sacs between the articulations, covering the cartilages, the internal surface of the lateral ligaments, and the articular capsules: to this is due their smooth and polished surfaces. Those joints which are furnished with fibrous capsules are equally lined by a synovial membrane composed entirely of cellular structure, forming a mesh of exhalants and absorbents, and the effects of inflammation are precisely the same as in other cellular tissues.

Affections of the joints are painful sequelæ of scarlatina. In some cases effusion of serum causes dropsy and enlargement of

the joint. In severer cases pus and lymph are effused into the cavity, or the membranes may run into adhesive inflammation, and cause ankylosis. False membranes may be formed, and even that substance which goes by the name of loose cartilage. The synovial adhere every where to the fibrous membranes, and hence arise two sets of affections, rheumatic and arthritic inflammation. The first is confined to the fibrous textures, the aponeuroses of muscles and the fibrous capsules; these do not suppurate, and the swelling which may take place is from infiltration into the cellular membrane every where present.

The pain is often excruciating in these parts, so as to lead to the belief of arthritic inflammation and suppuration into the cavities, but it is not the synovial membrane which often is affected in these instances. It will frequently happen that the knee or the ankle will suddenly become red and swollen, and cause excruciating pain, when on a sudden a metastasis will take place to the elbow, at once designating the true nature of the disease.

When the synovial membrane is affected, the pain is more constant and durable. In the latter instance a free application of leeches often arrests the progress; in the former they only irritate, and opium here is the sheet anchor.

Anasarca.—The cellular membrane is the connecting medium of the whole system. It is everywhere present and pervades all structures. If its ubiquity were to be proved by diseased function this would be accomplished by scarlatina. It is found infiltrated in that small portion which lies in the hollows of the arachnoid, and wherever there is a particle to be found it is demonstrable by infiltration.

It is subject to different degrees of inflammation in the progress of this disease. The most common affection is œdema, an affection different from that anasarcaous state which is the result of debility and enlargement of viscera. It does not commence, as in these cases, in the most dependent situations, uninfluenced by the laws of gravity, but it frequently commences in the head and face, and soon spreads all over the body. It is attended with considerable pain, and is the result of inflammation of the cellular tissue. A more decided state of inflammation is when the cellular membrane takes on the adhesive form, and involves the neighbouring parts, causing a sense of hardness and induration, often in the muscles of the neck, so as to produce exquisite pain in all attempts at motion. This gives rise to a species of wry neck from the twisting of the muscles, which is found to prevail in severe epidemics; copious effusion of coagulable lymph unites the parts into one morbid mass. It may proceed to slow and partial suppura-

tion, and is one of the most aggravating causes which protract convalescence. When these tumors break spontaneously, or are opened by the lancet, a sanious serofulous discharge is kept up for weeks; at other times ulcerative inflammation is produced, which may extend the whole length of the neck from the angle of the jaw to the clavicle. I am acquainted with a lady whose neck is scarred in this way, as if she had been burned. These local affections are generally accompanied with constitutional fever; sometimes the inflammation is so vehement that gangrene immediately ensues, and so extensively as to terminate at once the patient's existence.

Affection of glands.—The salivary glands are subject to irritation, induration, and suppuration, during the progress of this specific action. Salivation is by no means an uncommon occurrence during convalescence. A more distressing circumstance is the gradual swelling of the parotid and submaxillary, which sometimes only takes place at a very late period of the disease, and passing into inflammation, may, by setting up new action, exhaust the patient, when all fears had been dismissed of his recovery. It is a circumstance which demands the greatest attention from the very first moment of its appearance. The whole chain of cervical glands is subject to enlargement. The mesenteric glands do not escape, and lay the foundation of marasmus, particularly in stumous habits. Buboes have been formed in the groin. The common parlance, which was so commonly heard at the time of the invasion of the cholera, is equally applicable to scarlatina. If it be not immediately fatal, it develops latent diseases which are so.

Kidney.—It was Haller's opinion, that no specific structure was necessary for a particular secretion, which might under certain circumstances be produced by any apparatus. This admits, however, of some modification, for these vicarious secretions are never complete: still, one may supply the place of another, so that fatal consequences may be prevented from its suspension.

If the urine be scanty the perspiration is more abundant, and has a strong urinous colour, for between the skin and kidney there seems to be a mutual understanding. In the progress of this disease the serum is sometimes poured so rapidly into the cellular membrane, and in such quantity, that the office of the kidneys becomes a sinecure. This suspension of secretion is in most cases only functional, and is restored as the action of the exhalants becomes diminished in the progress of convalescence.

But another question remains for consideration, not as regards the quantity, but the quality of the secretion. In many cases of this malady albuminous urine is secreted.

Is this peculiar quality of this fluid a certain indication of disintegration of the organs? From evidence which I can collect upon the subject the quality is functional in many cases; for patients perfectly recover, which they would not do, were the kidney itself diseased. It is probable that some disease has existed previous to the scarlatina in those cases where a granulated structure has been found on dissection. There would hardly have been time for such disintegration as has been found in some cases.

It is the fate of all new discoveries that they find more proofs of their existence than their authors claim for them. It is now too prevalent to attribute all derangements of the urinary secretions to that state of the kidney so well described by Dr. Bright; but although that disorganization which he describes is perhaps always accompanied by albuminous urine, still, the latter is not, fortunately, always a consequence of the former. The coagulable urine in dropsical effusions has been long known, and first, perhaps, fully developed by Dr. Blackall. We are informed that the organic diseases of the kidneys were not unknown to the ancients. Aretæus says they may be ulcerated without an aposteme from the rupture of a vessel, erosion by acrid matter, or the irritation of a calculus. In severe cases of scarlatina, the lining mucous membrane may be eroded and ulcerated. Bloody urine is sometimes passed in this disease. If, on the one hand, we find so many who readily adopt new discoveries, and are too willing to add to the number of proofs, we find some, on the other hand, as ready to doubt, not exactly the authority, but to deteriorate from the merit of the originality by proving that they were known long before, though it may not have been their peculiar good fortune to know when or where to find them. Thus, not only are we informed that Aretæus was well acquainted with the morbus Brightii, but we are referred to the aphorisms of Hippocrates to prove that he was also conversant with it. When bubbles appear on the surface of the urine they indicate that the kidneys are affected, and that the disease will be protracted. Then, straightforward upon this authority, we are told that Messrs. Lallemand and Pappus state that frothy and albuminous urine are identical; so that Hippocrates has all the merit of this modern discovery.

But it remains for farther observation to prove the identity in all instances between albuminous and frothy urine, before the case can fully be decided in favour of Hippocrates.

Causes of sudden death.—The very sudden manner in which some fall victims to scarlatina can be attributed only to the intensity of the poison. The system is poisoned as

rapidly as by the inoculation of the upas, or by asphyxia from carbonic acid. It is difficult to ascertain the shortest period at which death has ensued after exposure to the contagion, but certainly within the space of eighteen hours; so that we may say of this disease what a celebrated French physiologist said of the cholera,—it commences with death. "In such instances, there is no febrile reaction, and the patient sinks, indifferent to all surrounding circumstances, and like to one labouring under an overwhelming dose of poison."

In such instances no devastation is visible in the mucous surfaces, nor do any appearances of the brain, or any structural lesions, account sufficiently for the sudden exhaustion of life. "The danger of this disease," says M. Bretonneau, "is not in any proportion to the inflammation of the throat. I have known it fatal in eighteen hours from its invasion without any very distinct redness or swelling of the tonsils. Even in such cases as where the affection of the throat was the most intense, I have been convinced that it had but little influence upon the result of the complaint. Pathological anatomy has left no room for doubt that those inflammatory lesions which do not extend beyond the pharynx are never the causes of death. It is to a miasmatic poison, which leaves no traces of its nature, that death is attributable. It is to this poisoning that the frequent and difficult respiration is due, together with that quick and irregular pulse, marking the extreme disorder in the circulation which prevents it being counted for a quarter of a minute together."

The most fatal cases which I treated of this disease were in houses situated on the banks of the Neva, in a low swampy district, where typhus, remittent and intermittent fevers, were endemic. My colleague, Dr. M'Nab, lost three of his children in four days, and the fourth only survived to drag on a miserable existence for a few months longer. In these instances it is probable that a ternary compound is formed between the palludal and animal poisons.

Effusion into ventricles.—The next most sudden cause of death, and which frequently occurs unexpectedly, is the result of effusion into the cavities, and, for the most part, into the ventricles of the brain. It will sometimes occur that a child may pass through the first stages of the disease with little apparent injury, and then at the period of supposed convalescence suddenly die.

This is the walsler schlag, so well described by Dr. Golis, of Vienna. It is a sudden effusion of fluid within the brain, either occurring idiopathically, or the consequence of the repelled matter of a previous disease, or the consequence of obstructed evacuation

from an excreting organ, from which death occurs in a few hours. To this belong all those depositions on the brain which arise from small-pox, measles, erysipelas, and other febrile eruptions, &c.

In all these cases of sudden death there is found, on examining the bodies, an effusion of fluid in the head—for the most part in the ventricles of the brain itself. Of the rapidity of this Dr. Golis states:—"An infant, eighteen months old, was placed in bed playful and laughing; about ten at night its mother left it sleeping tranquilly, but the next morning it was found dead. The same happened to a healthy infant six months old, which went to sleep at the breast of its nurse, but the next morning was found dead by her side. This was a suspicious case of overlaying, but it was proved to have been the effects of disease, as two ounces of serum were found in the brain."

LECTURES

ON CERTAIN

METALS & METALLIC PROPERTIES,

Delivered at the Royal Institution,

BY PROF. FARADAY, D.C.L. F.R.S. &c.

I.—April 12.

GOLD—PLATINA—MALLEABILITY,
DUCTILITY, WELDING.

WHENEVER I appear before you I am almost sure to have troubles in my mind. One is, that I may not go so deeply into the subject as to leave you behind, and therefore fail in interesting you; another is, that I may not be so slight and superficial as to excite a feeling of indifference in those who are learned in the matters on which I am to treat. I can only say, that I have always felt encouraged, and in the end regarded myself as justified, in speaking even of the commonest phenomena of nature and the qualities of matter, by the reflection, in the first place, that nothing is so common as not to be beautiful, and, secondly, that in investigating the more common constituents of nature to the bottom, I never found an audience that did not cordially respond to the feeling, that in speaking honestly and fairly only what was known about the matter, they were sure to be interested. It is this feeling that has encouraged me to come before you with a lecture on certain metals and metallic properties.

I mean to take some little liberty on the subject, and not to hold myself strictly to metals or metallic properties, but so to treat the matter as to make it most interesting. On the one hand, I shall explain the principle of action, and on the other, make such

a reference to phenomena as may excite your attention.

In speaking of metals and of metallic products, I shall change, as it were, from one to the other at pleasure; taking up either a development of a property, speaking of all metals generally, or taking a particular metal, and speaking especially of it. The point I have in view is, not to give a complete history of all the properties of metals, but to make a selection for eight lectures; and I hope that I shall be enabled to bring forth those that are most striking and interesting.

I have taken GOLD and PLATINA first, because in these we have some remarkable properties. Gold is a metal which, by its very properties, makes more impression upon the senses in its appearance and external characters than many other metals, which have, however, their peculiar points of interest.

GOLD is found in a native state; and, through the kindness of many friends, I have the advantage of shewing you many beautiful illustrations of it, as it is obtained in a metallic state, as it is bought in shops, and as it is presented to us by the manufacturer in a finished state. Here is a row of specimens for which I am indebted to Mr. Murchison, who obtained them from the Uralian Mountains, in Russia. Here is a piece of gold in the native quartose vein, in which it is supposed by geologists to occur originally. Here are masses that are found on the Asiatic side of the Uralian chain, where gold and platina abound to a great extent. There is on the table a beautiful specimen giving the appearance of the sides of two boulders of gold. Among the largest specimens that have been found was one discovered the year before last, and one discovered at Oorlask, when the Emperor Alexander made a visit to these Russian mines. It was found at his feet, and it weighed 78 lbs. Imagine the value of it. There is a portion of gold in the case before me which weighs 78 ounces; that is worth about £300, and the other is at least twelve times its value. Here is a beautiful crystallized specimen of gold from Brazil. There are also specimens on the table of gold obtained in its metallic state from Transylvania, from the Wicklow Mountains in Ireland, and English gold from the tin works on the edges of Cornwall and Devonshire. There is also a specimen of African gold, in the shape of a cross, brought by Lord Prudhoe from the confines of Abyssinia. Gold was worked in Africa at the time when christianity first prevailed in that country.

To the magnificent colour of gold I must refer hereafter. These specimens of framework shew the mode of applying gold to a surface, and the brilliant effect produced.

There are also specimens of gold plate, which illustrate the way in which gold, by its qualities, allows of its being brought into various states and shapes.

But in speaking of this state of gold, and the manner in which it is procured, I must take you back for a moment to what is called its *malleability*. Here are specimens of gold with which I have been favoured by Mr. Pettigrew, who obtained them from cases of mummies which were opened by him. One of these is a gold plate that was placed over the mouth of a mummy, and which, according to Lord Prudhoe, is at least 3000 years old. It has preserved its brilliant yellow colour untarnished. A curious point connected with this is, the proof it furnishes that at that time persons had learned to take advantage of the malleability of gold to such an extent that they were able to cover a large space with a small quantity of metal. I have examined portions of the ancient Egyptian leaf gold that would bend to and fro; and although they did not approximate to the thinness of the gold leaf of modern times, yet they were remarkable specimens, as shewing the extent to which, in those days, they had succeeded in working this metal.

I will first take up the property of *malleability*, which attaches to metals generally, and especially to gold, by which we are enabled to extend a solid mass, as for instance that bar, which weighs 78 ounces, almost indefinitely. It can be rolled out into a long thin strip, and at last brought into leaves so light as to float in the air. Leaf-gold, such as that before you, was, at one time, neither more nor less than a mass of gold as solid, and as compact in shape and form, as the bar to which I have just referred; but it is now brought into this beautiful state, preserving, as it appears to do, all its original characters of lustre and colour without any deterioration. Why is this? It arises from an extraordinary property which many metals possess, but by no means all of them, of allowing their particles to move one from another without actual destruction of their continuity. When a bar of gold is rolled out into a plate, and by a mill or in some other way is compressed in certain directions, an extension of the particles takes place, which does not occur in wood or glass.

This fact is an extremely curious one, and I am tempted to go a little into it, in order to point out how singularly the particles of different kinds of matter are made to rise one above another in a way that you would hardly expect. Advantage is taken of this property in gold. The gold is partly rolled, and then cut into little pieces, which I have here attempted to represent in tin foil. When brought into this state, the slip is put

between layers of parchment, and successive layers of parchment and gold are accumulated until there is a large heap of them, and the whole mass is then beaten. It is found during the process of beating that the gold becomes extended under the parchment, while the parchment remains the same as before. I will illustrate it by an experiment on tin foil, and the results will be striking. Having introduced a series of plates of tin foil between sheets of paper, I resort to my old occupation, and strike it with a hammer upon an iron anvil. If a bookbinder does this with a book, he compresses the leaves, makes them denser, but he does not spread them out, or make them occupy greater space; but if you take gold, copper, or any other of the malleable metals, and strike twenty or thirty blows, to your surprise the paper comes out intact; it is not destroyed, or broken anywhere, nor is its size altered, but the sheets of metal are larger than when you commenced, and if the process be continued, they expand under the hammer, till at last the mass is beaten out as far as the property of malleability in the metal will allow. The fine membrane termed gold-beaters' skin, which is used in this process, being elastic, gives way a little, expands laterally as the hammer compresses the whole body between the anvil, actually by its fine fibres laying hold of it as with teeth. When the hammer rises, from the pressure being taken off, the thin elastic membrane retracts, leaving the gold leaf behind it; the next blow makes it travel out again, and the gold leaf being pressed on all sides, the leaf of metal at last becomes so thin that you may see through it, though not so clearly as through a piece of a glass. If I take a card, cut a hole in it, and then moisten it so as to make the gold adhere round the edges of the aperture, and then look through it at the sky, a beautiful green colour appears. Gold, when seen through, is of a pure green colour. Gold leaf is made for various purposes, and is termed either red, green, or pale gold. The latter is produced by adding silver to the gold. On looking through pale gold, it presents a dark blue colour, the colour being modified by the admixture of silver. Silver can be beaten out by the same means as gold, and therefore furnishes the same beautiful instance of the malleability of metals. Light seen through it is of a dark purple colour, and this proves that silver is a transparent body; but it is not so transparent as gold.

I have been endeavouring to obtain an estimate of the loss of gold in this country; the data are very deficient, but you may judge for yourselves of the gold applied to wooden frames, to cornices, to pictures, and other purposes of gilding. Of gold used in this way, an immense proportion must be

lost. The quantity of gold beaten into leaf is exceedingly large. In London the quantity thus consumed amounts to £40,000 to £50,000 per annum; and in Birmingham, and other large manufacturing towns, a still greater quantity is used. Another source of consumption, and that a curious one, is the employment of this metal in gilding earthenware: even common earthenware is now more or less gilded, and this must all be lost. It can never be recovered from such articles. One London house, and yet not one of the largest, supplies £100 worth of gold every week, simply for the purpose of colouring porcelain. There is another source of immense loss, which would scarcely occur to you, but which is a most important one,—I refer to the friction of gold coin in the purses or pockets of those who are fortunate enough to possess it. The following is a curious memorandum on this point. Messrs. Whitbread paid into the Bank, the gold coin received by them from the publicans in 1842 and 1843, and the loss, purely from deficiency in weight, arising, there is every reason to believe, merely from wear and tear, amounted to no less a sum than £334. There is in all probability £35,000,000 of gold coin in circulation in this country, and the Bank has in its coffers at this time £12,000,000, and you may therefore form some notion of the wear and tear that must occur in the circulation of such a large amount of coin. There was a recoinage in the years 1774, 75, 76, and 77, of the gold coin, in the reigns of Queen Anne and George the First and Second. The amount recoined was £15,000,000; and the loss upon it £749,000. From 1714 to 1842, which is as far back as data can be procured, the loss upon the gold coin was £950,000, nearly £1,000,000—worn away, and lost for ever, in the manner I have stated. Where gold forms a part of the circulating medium of a country, this must cause the largest loss of this metal which is likely to occur.

I shall not trouble you with the chemical affinities of gold, because these are very slight, and I shall speak of chemical affinity more particularly when considering those metals that are much more active in this respect.

There is a curious point, which I may, however, mention, because it will remind you of what the alchemists used to say of metals. We can dissolve gold by two acids, neither of which has any power of dissolving the metal by itself. By applying nitric acid or muriatic acid alone, no effect is produced, but having mixed them, I introduce gold leaf about the 240,000th part of an inch in thickness, and you perceive how rapidly it is dissolved on simple agitation. Except platina, there are no other common metals that require this mixture of acids for their solu-

tion. By this means we obtain a solution of gold.

Gold is not so interesting in its chemical relations as other metals; but there is a singular effect on which I may touch, as to the manner in which gold acts when exposed to heat. If a solution or compound of gold be dropped on the hand, it stains it of a very dark purple colour. I have here a piece of parchment that was used to contain a solution of gold, and on looking closely to it, it is found to be magnificently coloured, and in appearance resembles glass coloured by gold. The colour produced in thin parchment stained with the chloride of gold, when viewed by transmitted light, is exceedingly beautiful. The five specimens of glass on the table, of a rich red colour, have been coloured by this metal. If the finely divided gold be fused carefully with the glass, the latter comes out tinted with the compound of gold. We have beautiful examples of this in many of the specimens of Bohemian glass. If heat be applied to a compound of gold, there is not a sufficient tendency in the solution to retain its compound state; its chemical affinities are destroyed; the gold is set free, and comes out in a pure state, with its usual yellow colour; but if the compound of gold be brought in contact with vitreous matter, that does not occur. Many of the metals colour vitreous matter, but gold gives to glass the most perfectly transparent red colour—a red colour that emits a great deal of light through it. I point this out, because it helps me to an experiment to prove that leaf gold is transparent, and not a sieve with holes in it, admitting the light through minute apertures. I have here a piece of glass on which have been placed sheets of gold, and by darkening the room I will endeavour to shew you the transmission of a ray of light through the leaf of metal. My lectures will be nothing, unless I prove, by experiment, the particular points on which I dwell. You can learn by reading all that I have to communicate orally; the only advantage I possess is that of demonstrating the truth of the facts by experiment. Here is a frame of glass used by the Trinity House in their lighthouses, for the purpose of giving notice to mariners. It gives a white light on the one side, and on the other a red, and is the only coloured light on which a mariner can really depend. I have here a layer of gold leaf, which I intend to place before the apparatus on the table [an apparatus for transmitting the oxy-hydrogen light], and by a mirror inclined at a certain angle, I am enabled to cast the ray of light coming from the lens upon the ceiling. There is a curious point connected with this, which is to me a proof that gold is transparent, and not, as I have said, a sieve with holes in it. The

Trinity House proposed to discontinue the use of gold or red glass, and to employ red serge or bunting, under the idea that those substances would produce a red light; but they were mistaken. On looking through a piece of red stuff the light appears as yellow as it was before. The fabric is red, and on holding a sheet of paper at a small distance from it I obtain a slightly reflected red light upon it; but on removing the paper a foot or farther from it, the red light which is supposed to pass through the fabric is gone, and it is now white—the white light traversing the meshes or apertures in the stuff. I pass a ray of light through gold leaf, and you now observe on the ceiling its green colour, shewing that the metal is really transparent. It is not transparent to any very great extent, but it is certainly permeable to light, and modifies its colour. [The light thrown on a screen of ground glass at a few feet distance, through gold leaf, was of a rich sea green—through a sheet of red glass coloured by gold, of a deep fiery red—through red serge, of a yellowish white, with no tint of red colour.]

In this lecture I have to discuss two substances very nearly related to each other, and I must therefore now pass from gold to speak of PLATINA. It is curious to observe the resemblance between gold and platina, both of which are found, under very similar circumstances, in the same strata. It is true that the gold dust which comes from Africa is not mixed with platina; but in Brazil, and the Uralian Chain, the mountains from which platina is obtained are exactly like those in which gold is found. There are on the table several beautiful specimens of platina, for which I am indebted to Mr. Murchison and others. It occurs more abundantly than gold, but in a mixed state. A large quantity of platina might be procured from Russia; but as it is not made an article of commerce, it is not found in the market. Here are two or three platina coins which have been made, but not circulated.

Platina, though a different substance from gold in its external appearance, being of a pale white instead of a yellow colour, is yet like gold in almost all other properties, and is so near to it, that, when considering them as a class, we are almost bound to put them together. There are, however, differences which will come before us in treating of this substance.

I will first state how platina is obtained. We dissolve the native platina ore in the same mixture of acids as that required for gold, and by processes principally derived from the experiments of Dr. Wollaston, we learn what are the best methods for procuring it in a pure state. There are no less than thirteen or fourteen different metals, in

a native state, mixed with the ore, and he discovered four or five that were never known before.

Platina, when obtained in solution in this way, appears in the state of a red liquid like that before you; and we procure it thus:—We put this solution into a glass, or any vessel fitted to contain it, and add a solution of sal ammoniac, or muriate of ammonia; there immediately falls down a fine yellow precipitate, which is a compound of platinum with muriate of ammonia. It is essential to observe, that in mixing these compounds together, we have nothing but volatile substances except the pure platina itself. The muriate of ammonia is volatile by heat, and we add nothing to the platina, which can assume a fusible form or remain fixed: all can be driven off by heat. If I take a large portion of this yellow powder or precipitate, and heat it as I am now about to do, an abundant white vapour goes up into the air. In fact, all that is volatile is passing away into the atmosphere, and there will remain behind a fine greyish-white powder—a peculiar spongy and apparently metallic substance, which is pure platinum in a finely divided state. The particles of the metal have been divided by the acid, and certain impurities taken away by it; the platinum is precipitated by the sal ammoniac, and now, by the application of heat, the sal ammoniac is given off, and here is spongy platinum left behind.

This brings us to another point which is important in considering the properties of platinum, and how chemical results are affected by it. If I take a sheet of paper and dip it into a solution of platina, and heat it,—the paper is no more a fixed substance than was the sal ammoniac,—I can soon dry it; and if I apply heat it will burn away, but the platina will remain. Here is an abundant ash; the charcoal is burning away while the metal is red hot, but when it is gone there is pure platinum left behind. If I take gold and treat it in the same way, it melts into a ball, but the platinum remains as before; and no heat of a furnace can melt that substance in a sensible quantity. Here are specimens that have been thus heated; and though thereby partly aggregated, you cannot melt them. Here is an almost unique piece of platinum; it weighs 501 ounces, and is worth about £800. It is a single ingot, intended for the manufacture of vessels for chemical purposes, where every particle of the platinum is in perfect continuity, without our having the power, as we have in gold and other metals, to fuse it down and run it together. Unless platinum possessed the property called *welding*, we could make no use of it; and this would alter many branches of manufacture. It is remarkable, however, what has

been done through the power of platinum; vessels have been made of it which resist chemical action far more than gold; and this is effected by means of welding. If I take two pieces of platinum wire, make them pretty clean, heat them in this way, and then strike a sharp blow on a clean anvil, the two pieces become one. The effect is due to this property of welding, which occurs so beautifully in platinum when perfectly clean, and which is necessary to produce one mass out of the myriads of masses in which it is supplied to us. The old experiment is a very good one, *i. e.* of making two clean surfaces of lead cohere by pressure. When we have clean surfaces, we may succeed by simple means in making two pieces one; but it requires a steady hand and a little patience. If the knife with which the edges of the leaden surfaces are pared is dirty, there is no chance of succeeding.

I will now proceed to give an account of the way in which we can make spongy platina cohere. The metal is brought up to a high temperature in a pulverised state; it is then squeezed together in a flat mass, and after that we can work it and roll it to a great degree of fineness. You here see leaves of platina. It is very different from gold. If I take leaf-gold I can melt it in a moment, it runs up in the flame as fast as possible; but you may make platina of a white heat and not fuse it.

Having referred to the non-chemical action of platina, I may now mention that it is one of the heaviest substances known. The following table exhibits the specific gravities of various metals:—

Platina . . .	20·98
Gold . . .	19·26
Mercury . . .	13·57
Lead . . .	11·35
Silver . . .	10·47
Copper . . .	8·90
Iron . . .	7·78
Tin . . .	7·30
Zinc . . .	7·09

Thus, platina is at the head, being nearly 21. A ball of iron would float in mercury, whereas platina would sink to the bottom instantly, the latter being nearly three times as heavy as the former. There are here a number of solid cylinders, consisting of various metals—platina, tin, iron, copper, bismuth, antimony, and lead; they are all of the same weight and diameter, but you observe the vast disproportion in their length, which thus serve to measure their specific gravities. At the head stands platinum: *i. e.* it forms the shortest cylinder, while potassium and sodium, here represented artificially, form the longest cylinders.

There is one strange circumstance about platina which I must notice, especially since I have taken gold and platina as being amongst those metals which have the least chemical action, and are the least acted on by other bodies. It is a curious thing, when you come to consider the different properties of metals, to find a mass in which these qualities are almost deficient come into play, in other conditions, in a manner the most beautiful to him who looks on to watch nature, but most unimportant to those who regard it without bringing their knowledge to bear upon it. I am referring to the strange power that many substances possess, but platina in perfection, to bring about a chemical action in which, somehow or other, they take a part, but not a direct part. I have here produced a quantity of spongy platinum, and I will exhibit the effect which a small portion of it is capable of producing. Here is a vessel containing hydrogen gas; and by applying a jet of flame to ignite it, I can make it combine with oxygen and produce water; but the moment I extinguish the flame no more water will be produced, although the hydrogen is still escaping—the glass which is now held over it will remain dry. If I now apply the platinum over the current of gas, there is no chemical change in it; but I can shew you that water is now produced, and the two bodies are made to combine by the intervention of the metal: the dew is now appearing at the upper part of the glass. Here are the two gases which I have allowed to remain mixed together for nearly a week, and no combination has been produced; but if I introduce into the bottle inverted a small portion of spongy platina, previously dried, although the metal itself remains unchanged, yet upon its introduction inflammation takes place, and there is an explosion. The platina itself has no direct concern in it; it comes out just as efficient for the same purpose as it was at first. There is a strange power in this body of causing chemical combination while the substance remains unchanged. Many theories have been adduced to explain this, but none of them are satisfactory. Some have considered it electrical; but we do not understand it, nothing arises from our knowledge of the metal that will explain it. All we know is this: that platina in a spongy state, before it has cohered into a mass, produces this extraordinary result. Gold has the same effect, but to a far less extent. I will end these observations by saying, that those metals which have the least direct chemical action in themselves, have the greatest effect in producing that action on third particles.

Original Communications.

SOME OBSERVATIONS ON THE USE OF THE TROCHAR AND CANULA IN THE OPERATION OF TRACHEOTOMY.

With Cases.

BY EDWARD COCK,

Fellow of the Royal College of Surgeons, and
Assistant-Surgeon to Guy's Hospital.

PERHAPS there are few operations which the surgeon is called upon to perform that have been attended with so little ultimate success as that of tracheotomy. Indeed, we rarely meet with a case of laryngeal obstruction presenting so favourable a combination of circumstances as to promise permanent and efficient benefit by establishing an artificial opening into the trachea. If we except those instances where the impediment to respiration results from accident or injury, we shall seldom meet with a pure case of obstruction in the larynx. It is almost always more or less combined with mischief in the pulmonary organs, either coexistent with the original laryngeal disease, or supervening upon it as a consequence.

The admirable work of Mr. Porter has embraced in so masterly a manner the whole range of diseases and casualties to which the larynx and trachea are liable, together with the application of medicine and surgery in their treatment, that little or nothing remains to be added to the completeness of his statements. He points out with distinctness and truth that there are few cases of laryngeal and tracheal disease in which the operation of tracheotomy can be had recourse to with reasonable prospect of ultimate success. The nature of the operation itself, repugnant alike to the feelings of the surgeon, the patient, or his friends, and the moderate advantage which has hitherto attended its performance, has, perhaps, often induced the medical adviser to decline its advocacy, and shrink from the use of the knife, even in those cases where it might be considered available. The practice has, indeed, been condemned and reprobated by some of the most eminent men, as useless and disastrous, the results not

compensating for the difficulties and hazards, and not calculated to increase the credit of the proposer.

On the other hand, tracheotomy has found its advocates in those who recommend its frequent performance as an easy and efficient remedy for many forms of laryngeal disease, and for obstruction of the passage of air into the lungs from whatever cause, provided an opening can be made below the seat of mischief.

Without sifting the merits of controversial argument, our most prudent line of practice will probably be obtained by adopting a medium course between the two extreme opinions. Cases will assuredly occur in the practice of a surgeon in which he will find himself not only justified, but imperatively called upon, to open the trachea, either to save the life, or to procure a temporary alleviation to the sufferings of his patient. He will find it his duty, in the one instance, to recommend and urge the operation as affording a fair chance of a successful issue; and in the other, to comply with the wishes of the patient or his friends to relieve the sufferer from the horrors and struggles of impending suffocation, to prolong life, perhaps with a possibility of ultimate preservation; at any rate, to render dissolution more gradual and less terrible. Thus, we may find ourselves called upon to operate under two distinct circumstances or conditions: first, with a view to the ultimate benefit of our patient; secondly, with no other expectation but that of alleviating his immediate sufferings.

In summing up the chances of a successful issue to tracheotomy, we must not be too sanguine in our expectations, as we are seldom or never called upon to perform it except in the last extremity, when all other remedies have failed in arresting the symptoms.

The cases in which we may most reasonably anticipate success are those in which the affection of the larynx is of recent occurrence, and where we may expect its speedy subsidence, provided we can keep our patient alive for a certain period. Examples of such cases are—1st, acute laryngitis, terminating in effusion in the sub-mucous cellular tissue about the glottis and rima; 2d, the effects of mechanical injury to the glottis, produced by taking boiling water, mineral acids, or any

other irritating fluid, into the mouth; 3d, the introduction and lodgment of foreign bodies within the cavity of the larynx. In all these instances our object is to prolong life and to gain time, order to allow of the subsidence or removal of the mischief either by nature or by art.

In cases of chronic disease we must always be prepared for much trouble, anxiety, and difficulty; and if the patient finally escapes with life, the recovery must necessarily be tedious. Not only must we await the return of the larynx to a healthy, or, at any rate, a puerious state, but we shall have to combat the effects of the operation itself, generally supervening in a constitution least able to bear them.

Independently of the popular prejudice naturally entertained against tracheotomy, which must almost always render it available only as a last resource, two objections exist which have hardly received sufficient attention and consideration. The one belongs to the operation itself, the other to the consequences which it entails. The one is the difficulty and embarrassment which the surgeon often experiences in making a prompt, efficient and available opening into the windpipe; the other is the almost inevitable bronchitis which ensues from the admission of unwarmed dry air into the lungs.

Those who have practised the operation, or seen it performed, must be well aware of the difficulties to be encountered from the accidental configuration of the parts concerned, the frequent depth of the trachea, the effusion of blood, the constant motion of the parts, the want of proper assistance, the convulsive action and violent excitement which frequently attend the first incision into the windpipe, the entrance of blood into the air-passages, which may perhaps choke the patient at the very moment that we have succeeded in fulfilling our intentions for his relief. All these, and many other casualties, must be anticipated and provided for.

The length of time which is required for the ordinary operation of tracheotomy, and the difficulties to be overcome, must always be a great objection to its performance, and not unfrequently form an insurmountable obstacle to its success. The directions laid down in most surgical works for opening the trachea, will be found to

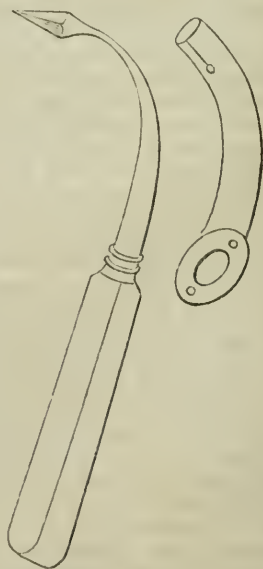
include the following items. The patient is to be placed opposite a strong light. His head is to be held back by an assistant, and, if it be a child, more hands will be wanted to secure his arms and legs; the sides of the wound are to be kept open by retractors, and additional assistance will be required for sponging, securing vessels, &c. &c. The operator is directed to divide the different tissues which cover the windpipe layer by layer, carefully avoiding the veins which lie in his way, and perhaps tying the arteries which he may accidentally divide. When at length the trachea has been exposed at a distance varying from one to three inches from the surface, he must wait until the hæmorrhage has ceased before venturing to open the tube, and even then he will be fortunate if a certain quantity of blood is not sucked in at each inspiration, adding much to the distress of the patient, and counteracting the benefit he would otherwise derive from the free admission of air into his lungs. Thus, the operation requires good daylight, some half dozen assistants, and a considerable time for its performance, during which the patient is retained in a position most calculated to complete the suffocation which it is intended to relieve. In relation to the above description and catalogue of essentials, let us place the simple fact, that we may be called upon to open the trachea at a moment's notice, in the middle of the night, and without the aid of any of the means and appliances just enumerated. It is not surprising that, under such circumstances, the operation should be avoided, postponed or altogether abandoned in those very cases where its speedy adoption might have saved the life of the individual.

Experience has taught me that the operation may be rendered much more simple, and many of its difficulties and embarrassments avoided, by making use of the trochar and canula, instead of opening the trachea with the knife.* The plan I have been led to adopt, is to cut boldly and fearlessly down until the trachea is laid bare, and can be felt distinctly under the finger; the trochar may then be introduced without much difficulty.

The principal advantages of using

* Mr. Porter has adverted to the use of the trochar and canula, but, I think, does not attach to it that importance, in a practical point of view, to which my experience tells me it is entitled.

this instrument are the saving of time, and consequent saving of blood (which, in a child, is of great importance), and the opportunity afforded of easily checking the hæmorrhage by pressure. The object is gained of at once placing our patient in a state of safety, and the canula may be subsequently removed at an earlier or later period, as soon as its presence becomes inconvenient. We may then, under more favourable circumstances, enlarge the opening into the windpipe to any desirable extent; thus affording a free passage for the admission of air and the expectoration of mucus. It is no slight recommendation to the use of this instrument that it enables the operator to effect his purpose without much assistance from others. In more than one instance I have opened the trachea at night with the aid of a single person to hold the candle. The curved trochar which I have here figured is the one which, after several trials with different instruments on the dead subject, I found best adapted for the purpose of tracheotomy.



The second objection and drawback to the ultimate success of the operation, viz. the supervention of bronchitis, or the persistence and aggravation of that which may already exist, is not so easily overcome. It will always prove most troublesome, and not unfrequently fatal, whenever the state of the larynx

for which the operation was performed involves the necessity for maintaining the artificial opening during a lengthened period.

The following cases, which I have selected from my note-book, may serve to illustrate some of the observations which I have made, and to point out the beneficial application of the trochar and canula.

CASE I.—A—H—, æt. 39, admitted into Martha ward, July 12, 1843, under the physician. Her case afforded no very distinct history, but it appeared that for the last six months she had been affected with chronic thickening and alteration about the glottis, and latterly with bronchitis. Her condition was probably connected with an original syphilitic taint, aggravated by the use of mercury.

Sarsaparilla and iodide of potassium were ordered, but her respiration, particularly the inspiratory act, became more and more impeded.

The fauces, as far down as a view could be obtained, presented nothing abnormal. A blister was applied over the larynx, but without affording relief.

July 24th.—I was called to her at 10 P.M., and found her in immediate danger of suffocation. I proceeded to open the trachea, exposing the tube at the upper part by cutting through a portion of the thyroid gland, and passing in a trochar and canula about three-fourths of an inch below the larynx. She lost but little blood. The introduction of the canula was succeeded by a violent fit of coughing, during which she discharged a large quantity of thin mucus through the tube. She then breathed freely and regularly through the canula, and, as the lungs were inflated, the presence of mucus in the bronchial ramifications became evident, which, previous to the admission of air, was not discoverable. She was greatly relieved, and continued during the night to discharge mucus through the canula.

July 25th, (the next day).—The canula had become in a great measure obstructed with inspissated mucus, which I had considerable difficulty in removing. She was evidently suffering from accumulation of bronchial secretion, producing frequent fits of coughing and great distress.

July 26th.—Had been coughing violently all night, and the tube had be-

come nearly closed. I now withdrew the tube, which gave immediate relief, and finding the opening it had left in the trachea not sufficient to allow a free exit to the accumulated secretion, I without much difficulty removed a portion of two of the cartilaginous rings with a probe-pointed bistoury and a pair of forceps, thus establishing an opening which would admit the end of a little finger. The trachea lay at the depth of about an inch and a half from the surface. She now breathed much more freely, and continued to improve, taking eight ounces of wine and four of brandy, with other fluid nourishment daily. Masses of tenacious mucus were continually coughed up, and got rid of with great difficulty, on account of their adherent nature and the depth of the wound, which required to be well cleared out at least three times a day.

August 4th; eleven days after the operation.—Much improved in strength and general condition. Continues to expel much yellow tenacious bronchitic mucus from the wound, besides a quantity of more fluid secretion from the mouth. If the laryngeal opening is closed she experiences immediate distress, and the glottis seems almost impervious. Was ordered mucilaginous mixture, with Oxytel of Squills and Tincture of Hyoscyamus.

12th.—Continues to improve in health and strength, and takes solid food with good appetite. The original disease, however, the chronic thickening about the rima, appears to exist undiminished, and no adequate respiration can be carried on through the larynx. She complains of a constant feeling of irritation referred to the larynx, as if she had something sticking there, which produces frequent and distressing cough. The mucous expectoration from the wound is much diminished, but within the last few days the granulations have had a constant tendency to close the aperture, and the mucus becoming dry and hard clogs up the opening, so as to render the cleaning out of the wound and its dilatation frequently necessary in order to prevent distressing symptoms of dyspnoea. I therefore introduced a straight silver tube, about an inch and a half long, into the wound, which nearly touched without entering the trachea, and she breathed through it with increased comfort.

14th.—The tube requires frequent removal to clean it, and also to clear away the inspissated mucus which collects about and within the opening of the trachea, which she cannot get rid of by her own efforts.

21st.—The great tendency which the wound has to contract renders its constant dilatation with a pair of forceps necessary. I have in great measure succeeded in preventing the accumulation of hardened mucus by placing a wet sponge over the mouth of the tube, and still more by letting her frequently inhale the steam of hot water, which seems to allay the irritation of the air-passages, as well as to allow of more easy expectoration.

Sept. 1.—She is now nearly free from bronchial symptoms, and was ordered—

℞. of Nitro. Mur. Acid in Inf. Gent.
and Syr. Aurantii, t. d.

She wears the tube constantly.

Oct. 6.—Has continued slowly to improve, and the larynx seems to be regaining its natural functions. There has been the greatest difficulty in maintaining the tracheal opening, owing to the unconquerable disposition of the wound to close. Within the last few days, in spite of all efforts, it has contracted so rapidly and firmly as to expel and prevent the reintroduction of the tube which she has hitherto worn; but, at the same time, respiration to a certain extent is beginning to take place through the larynx, which has not been the case until now since the operation. The total closure of the wound is prevented by the frequent introduction of a bougie, and the occasional retention of a small gum elastic tube. She still suffers from chronic bronchitis, and expels mucus, although with difficulty, through the wound. Still complains of fulness and sense of obstruction about the larynx, as if (as she expresses it) some foreign body was lodged there. Directed—

Tincture of Iodine to be applied over the larynx.

20th.—The wound is now entirely closed, notwithstanding all our efforts and schemes to keep it open. She now, however, breathes with tolerable ease through her larynx, which seems to be slowly recovering its tone.

From this period her improvement was progressive. She continued her tonic medicines, and I have reason to

believe, derived much benefit from inhaling the fumes of æther. She left the hospital on November 21st, well in health, and breathing with perfect ease, although she had not recovered her voice. Was perfectly well a year afterwards.

The above case presents a well-marked instance of obstruction in the larynx supervening on old chronic disease, and accompanied by bronchitic affection, which, no doubt, became aggravated by the admission of unwarmed dry air into the lungs through the artificial opening in the trachea. It illustrates the unremitting care, vigilance, and attention, which are required to bring a patient through such a complication of evils. The canula was also retained too long in the wound, and the accumulation of mucus in the tube and in the windpipe occasioned much unnecessary distress, which might have been avoided by an earlier removal of the instrument. I should always recommend an early withdrawal of the canula, and at the same time an adequate enlargement of the tracheal opening by the removal of a portion of one or two of the cartilaginous rings, unless in such cases where the cause of obstruction should have rapidly ceased, and respiration become restored through the natural passage. Much vigilance is required during the first twelve or fifteen hours succeeding the operation, as the canula is liable to become gradually choked with mucus, and no delay should then take place in withdrawing it. A neglect of proper precaution under such circumstances probably tended to a fatal result in the case which I will next relate.

CASE II.—Mr. —, residing in the neighbourhood of London, aged 30, of weak delicate constitution, had frequently suffered from sore throat, cough, and bronchial affection. Two or three days previous to my seeing him, after a lengthened exposure to cold and wet, he had become the subject of an attack of acute laryngitis, commencing in the usual way with dry husky cough, painful and somewhat difficult respiration, accompanied with extreme anxiety and restlessness. His breathing soon assumed the sonorous whistling character, indicating the passage of air through a narrowed rima glottidis. The usual remedies, such as bleeding, leeches, blisters, calomel, antimony, &c. had

been used, but without effect. The disease ran its course, until the increasing dyspnœa, and the subsidence of the sonorous respiration, seemed to indicate that œdematous effusion had taken place under the mucous membrane of the glottis, rendering the rima nearly impervious to air. It was at this period of the disease that I was sent for, and on my arrival found him in a state approaching to coma. The struggle between life and death was over: he appeared worn out by the lengthened conflict, and lay powerless and insensible, breathing at lengthened intervals, and scarcely receiving any air into his chest. The thorax, indeed, was in a state of expiration; the ribs drawn down; the diaphragm raised, so as to render the abdominal walls collapsed and hollow, clearly defining the margin of the false ribs. His countenance was livid, and his arms and legs were suffused with a blue colour, which I have not observed in any other case. Previous examination of the chest had led to the belief that the mischief was confined to the larynx, and that the lungs were in no way materially involved. It was evident that no time was to be lost, and I immediately laid bare the upper part of the trachea, and passed a full-sized trochar and canula into the tube. On withdrawing the trochar, two or three irregular respiratory attempts were made, followed by a sudden and deep inspiration, which filled the chest with air. The breathing then became calm, regular, and efficient, but accompanied by a mucous râle, of which previously the chest, for obvious reasons, had given no indication. In less than five minutes the blue colour had entirely faded from his arms and legs; his countenance became animated and cheerful; he sat up in bed, smiled, and, making signs for paper, wrote down some expressions indicating his extreme delight at the relief which had been afforded him.

So far all was satisfactory, but even the little experience I had had in tracheotomy rendered me aware, that much more remained to be done before he could be considered in safety; that the bronchitic secretion, increased by the admission of unwarmed dry air into the lungs, would in the course of some hours accumulate in the tube, and render its removal, together with an enlargement of the opening, necessary

to allow of free expectoration. As it seemed uncertain whether an opportunity would be afforded me of efficiently carrying out these measures in person, I directed that the patient should be carefully watched, and that the tube should be removed if his symptoms of obstructed respiration should become alarmingly distressing before assistance could be procured. I heard nothing more of my patient until the afternoon of the following day, when I was informed that he had died about twenty hours after the operation. It appeared that he had slept for some time after I left him, and passed a tolerably good night. In the morning he began to expectorate mucus through the canula, which by degrees accumulated and stopped up the tube. Fruitless efforts were made with a probe to clear out the instrument; the obstruction became complete, and he gradually sank and died. The canula was removed after death, and when returned to me I found it choked up by a plug of firm tenacious mucus. The fatal result under the circumstances was inevitable, and was the more to be regretted, as the case was one which had presented a fair and favourable chance of ultimate recovery.

CASE III.—Laryngeal obstruction from boiling water taken into the mouth.

Redmond Prenderwell, æt. 5, a fine fat healthy boy, admitted into Esther, Feb. 14, 5 o'clock, P.M.

About an hour and a half previous to his admission he had sucked boiling water from the spout of a kettle. Symptoms of inflammation about the glottis rapidly set in, respiration became difficult, and when I was first called to him, about two hours and a half after the injury, he was completely asphyxiated, and in a state of suffocation. His face was swollen and livid; his eyes projecting, and a frothy mucus covered his mouth. His struggles had ceased, and he breathed slowly, evidently receiving scarcely any air into his chest. There was some little delay in procuring the instruments, and before I could commence the incision his attempts at respiration had entirely ceased. The introduction of the knife was immediately followed by a most profuse venous hæmorrhage, which flowed over both sides of the neck into the bed, and at

once obscured all the parts. The child's neck was short and fat, the trachea small and deeply seated; and before I could at all reach the tube so as to feel it with my finger, some ounces of blood had been lost. Laying bare the windpipe as well as the untoward circumstances would admit of, I passed in the trochar and canula, but on withdrawing the former, found to my mortification that not the slightest ingress of air took place. Imagining at the moment that I might possibly have missed the trachea, or that the canula might have become accidentally obstructed, I withdrew the instrument and reinserted it, but with the same result. The true cause of failure, however, depended on the fact that the child was no longer capable of the effort of respiration, for on applying my mouth to the tube, I inflated the lungs with great ease. This was repeated a few times, when the child began to show symptoms of revival, and commenced breathing by natural efforts.

The hæmorrhage was easily checked by some lint applied round the canula, and by approximating the edges of the wound. The child continued to breathe well and easily through the tube, and had no difficulty in taking nourishment and some stimulus. The back part of the tongue and the fauces appeared to be scalded, but by no means severely. In all probability none of the boiling water had been swallowed, and the local injury certainly appeared very slight, compared with the rapid mischievous effects produced by it.

A few doses of calomel and ipecacuanha were given, the bowels freely acted upon, and the canula was left in the wound until the morning of the 16th, when it began to be choked up with mucus, and was removed. Respiration up to this time had been carried on entirely through the tube, but after its removal the child breathed partly through the mouth, and partly through the opening left in the trachea. In a few hours it began to respire entirely by the mouth, although for a few days mucus continued to be expelled at intervals through the wound. This soon ceased, and the wound rapidly contracted and granulated. Left the hospital quite well March 13*.

The foregoing case illustrates the efficiency of the trochar and canula in effecting a speedy entrance into the windpipe when the delay of a few seconds may render the operation abortive. Had any other form of incision been adopted, the child I think must have perished, either from hæmorrhage or suffocation, before the trachea could have been opened; to say nothing of the probable mischief that would have ensued from the inhalation of blood, which always takes place to a greater or less amount when the operation is completed by the knife. It must also be remembered that the introduction of the canula affords an easy and efficacious means for carrying on artificial respiration, if, as in this instance, such a process should be found necessary.

The cases I have related will serve to illustrate the application of tracheotomy in three forms of disease or laryngeal

newspaper, was made the subject of a silly and abusive article in one of the Dublin Medical Journals.

[The attack referred to by Mr. Cock appeared in the Dublin Medical Press, for April 9th, and it has since been copied into, and circulated in, an English medical journal. We fully unite with our Dublin contemporaries in their abhorrence of everything at all approaching to quackery, whether emanating from professional or unprofessional sources; but in this instance their over zeal and implicit confidence in a mere newspaper paragraph have led them into the serious error of casting blame unjustly, and upon insufficient grounds, on an upright professional man. We should have supposed that the editors of medical journals were aware that the surgeries of all our large hospitals are daily frequented by persons who report coroners' inquests, catastrophes, &c. for the newspaper press. Every striking and unusual accident, (and now and then, in want of better material, one of the commonest kind), receives its description from these gentlemen, who, in their eagerness to excite wonder, and in their perfect inability to appreciate the real facts, usually add tenfold to any circumstances which may appear to them to be remarkable in the case. The perfectly erroneous and absurd nature of nine out of ten of these newspaper tail-pieces, proves that the hospital authorities have nothing at all to do with their fabrication.

The paragraph which formed the subject of the harsh comments alluded to, doubtless arose in this way. Those who knew Mr. Cock could not have supposed him to be the author of it, and those who did not know him, were certainly bound, before imputing the insertion of it to him, and then proceeding to condemn him as if they were dealing with an established fact, to have ascertained whether or not there were any grounds for the imputation. The charge is headed "Curiosities of Medical Literature:" to us, we must confess, it does appear a perfect curiosity in medical literature, that the conductors of a respectable medical journal should found a harsh attack on the reputation of a professional brother, upon no better ground than a penny-a-line paragraph in a newspaper!—Ed. GAZ.]

* I have been informed that a notice of this case, which, amongst other hospital casualties, found its way, without my intervention, into the *Times*

obstruction, where a reasonable degree of success may be expected from the operation, viz. in cases of chronic affection of the larynx, uncombined with irremediable disease of the lungs. In acute laryngitis, where a speedy subsidence of the original mischief may be confidently anticipated. In cases of mechanical injury to the larynx, when the circumstances and probable results will be similar to the last. The chief object is to prolong life, and allow nature to restore the rima and glottis to their normal condition.

I have operated with the trochar and canula in four other instances with scarcely any other hope or expectation than that of arresting the distressing and horrible struggles of suffocation, and have always succeeded in accomplishing this object. Two of these cases were croup in children, on whom tracheotomy was performed as a last resource. The relief was immediate and manifest, but temporary; for the little patients gradually sank from the extension of inflammation to the lungs, and the accumulation of bronchitic secretion.

The third case was that of a man who was found lying under one of the dry arches of London Bridge, insensible from long exposure to cold, and want of sustenance. He rallied under appropriate treatment, but soon after his admission into the hospital, was threatened with suffocation, from rapid inflammatory effusion taking place about the mouth, tongue, fauces and larynx, the whole of the neck becoming at the same time puffed up by œdematous infiltration into the superficial and deep-seated cellular tissues. To relieve his struggles I opened the trachea, and he continued to breathe through the canula until he died, about sixteen hours after the operation. Both his lungs were affected with pneumonia and consolidation. There was also recent pleuritis, with effusion on each side the chest.

The fourth case was that of a gentleman in the neighbourhood of London, aged 65, of broken-down constitution, who for the last three years had been the subject of chronic affection of the larynx, with loss of voice. His lungs were probably extensively damaged by previous attacks of disease, and for several weeks he had laboured under

bronchitis, with a gradual but decided breaking up of his powers.

Under this condition, laryngeal obstruction took place, probably from œdematous effusion about the glottis and rima. His sufferings and struggles during impending suffocation were so great, that, by his own solicitation and the wish of his family, I introduced a canula into his trachea, and on withdrawing the instrument a few hours afterwards, enlarged the opening by removing a portion of the cartilaginous rings. His improvement for the first few days was very decided; he continued to breathe through the aperture, and expelled large quantities of mucus. The accumulation of bronchial secretion, however, soon proved too great for his feeble powers to get rid of, and he sank five days after the operation had been performed.

In conclusion, I may be allowed to say, that having on former occasions both witnessed and experienced the difficulties and embarrassments to be encountered by cutting into the trachea with a knife, I can duly appreciate the advantages to be derived from the use of the trochar and canula, when followed up with vigilance and attention.

In cases which promise fair, it increases the chances of success, and by diminishing the risk, pain, and terror of the operation, it enables us to give temporary relief, even in those instances where but slender hopes of eventual benefit can be entertained or encouraged.

CONTRIBUTIONS TO THE PHYSIOLOGY OF THE HUMAN OVARY.

Second Series.

By CHARLES RITCHIE, M.D. Glasgow.

IN reverting to this field of investigation, the writer proposes to limit his observations to subjects of inquiry which are more immediately involved in the former series; and in arranging the materials of the present contributions, his chief object has been to bring into view, in as succinct a form as is consistent with the copiousness and diffuse nature of the various details, the precise amount of our knowledge in this department of physiology, and at the same time to state and support

his own opinions on the topics which are treated of, in such a way as the structure of his former paper, which was almost wholly a detail of facts, alike prevented and requires. This he would attempt under the following sections:—

- I. Female sexual organs.
- II. Sexual character of the ovaries.
- III. Fallopian tubes.
- IV. Uterine ovum.
- V. Vesicles of the ovary.
- VI. Formative function of the ovary.
- VII. Seat of conception.
- VIII. Evolution of ova.
- IX. Evolution of ova from ovaries in connection with the rut in quadrupeds, and with menstruation in man.
- X. Theory of menstruation.
- XI. Corpora menstrualia vel periodica.
- XII. General conclusions.

I. *Female sexual organs.*—The female organs of generation were not supposed by the ancients to differ from those of the male, otherwise than in situation.* Retained within the pelvis by an imagined arrest of development, the effect, as was believed, of a relatively low degree of organic power, the ovaries were reputed as the analogues of the testes, the spermatic vessels being the types of the vasa preparantia, while the fallopian tubes† with some, and with others‡ the ovarian ligaments, and with some again§ the uterine and tubal branches of the blood-vessels of the ovaries, and with others certain imaginary passages believed to lead|| from those glands to the cervix vesicæ, or to the os uteri¶, or to the clitoris**, were regarded as the counterparts of the vasa deferentia.

II. *Sexual character of the ovaries.*—Hippocrates‡‡ ascribed an absolute parity of function to the female with the male testis; and Empedocles'§§ notion

of the pre-existence in each parent of different portions of what after conception merged in the fœtus, if not admitted as the prototype of the union of the spermatozoon and ovum of modern physiology, may at least be allowed to indicate distinctly the correspondence in function which was then supposed to exist between the seminal glands of the respective sexes. The effects, in the destruction of the sexual passion and otherwise, of the removal of the ovaries from animals and women, were known to Aristotle, and have been insisted on by most succeeding writers on these subjects; while Galen, although ridiculing in strong terms the weak points of the hypothesis of Empedocles, has wrought out* a lengthened ratio-cination in favour of the specifically parallel functions of the two sexes in the act of conception, founded on the alterations of species which result from the engendering of animals of different kinds, as of the horse and the ass, or of the dog and the wolf, which would serve as an excellent *à priori* argument in the present day for the existence of a female ovum. It may also, perhaps, serve to shew the identity of character with the testis, which Vesalius† believed to attach to the ovary as the primary sexual organ, that, in speaking of yellow bodies which he had found within the ovaries of four unmarried women, this distinguished anatomist traces to their influence the strangulation of the uterus, the amenorrhœa and chlorosis, which the parties had suffered from before death.

Hippocrates‡, followed by Galen§, and the school of the latter, till the period of the discovery of ova in the tubes, maintained that the blood in the spermatic veins became converted, by its combination with the spirit in the accompanying arteries, while these lay entwined together in their serpentine course towards the ovaries, into a white-coloured viscid semen; while Aristotle§ and the Peripatetics, and afterwards Pliny¶, and some of the Arabian writers, substantially denied this in the case of the female, and ascribed to the semen masculinum the sole agency

* Galen. de Usu Partium, lib. xiv. cap. 6.

† Galen. de Semine, lib. ii. cap. 1.

‡ Spigel. de Hum. Corp. Fab. p. 261. Mauriceau, by Chamberlayne, p. 25.

§ Vesalius, lib. v. cap. 12, 15. Spigelius, lib. viii. cap. 20. Bartholinus, lib. i. cap. 27.

|| Herophilus, in Galene de Semine, lib. ii. cap. 1.

¶ Riolan. Anthrop. lib. ii. cap. 35. Laurent. lib. vii. cap. 9. Revived by M. Gartner, of Copenhagen, and Dr. Dewees, Syst. of Midwifery, p. 73.

** Diemerbroeck, pp. 223-4.

†† De Genitura, p. 12.

§§ In Galene de Semine, cap. 3.

* De Semine, cap. 1. a, b.

† De Corp. Hum. Fabrica, lib. v. cap. 15, p. 460.

‡ De Genitura, p. 12.

§ De Usu Part. lib. xiv. cap. 10.

¶ Hist. Anim. lib. i. cap. 20; lib. ii. cap. 4.

¶ Nat. Hist. book vii. chap. 15.

of conception, or divided this under various modifications* with the catamenial fluid.

III. *Fallopian tubes*.—The uterine tubes, which have been so recklessly pronounced by a modern writer† to be impervious before puberty, and after critical age, reviving the obsolete notion of their cæcity‡, which was asserted by some§ to be situated at their distal, and by others|| at their uterine extremity, were demonstrated by Galen¶, and, after another long interval of belief in their imperviousness, again by Fallopius**, to be patent throughout their whole extent; and from finding their proximal ends in the quadrupeds he examined, as their distal in women commonly are, to be filled with a white fluid, the former writer considered the tubes to be true seminal ejaculatories, and mistook their normal secretion (described in the former series of these Contributions)†† for the semen fœmininum, as the same material has repeatedly been since‡‡ for that of the male. The impossibility of demonstrating the manner in which the presumed semen, however, passed from the testes to the tubes was, previous to the discovery of ova in both organs, and§§ the apposition of the one upon the other in animals at the time of rut, a source of much|||| perplexity to anatomists; some, as has been seen, supposing it to be effected through the tubal arteries¶¶, and others more recentlyβ, and even after the vesicular structure of the ovaries was understood, imagining that the seminal fluid was absorbed into the tubes from the ovarian cells by means of the fimbriæ, or directly by their abdominal orifices.

The curved and sacculated configuration of the tubes near the corpora fimbriata, where their peculiar fluid in

general collects, so as to distend them into a triangular pouch, and, perhaps, also, by its action on the fimbriæ, to aid in shutting their open ends, was early* observed and described as vesiculæ seminaria. In occasional instances, both of women who have borne children, and of such as have been mothers†, one and sometimes two portions of this vesical-like process project from the line of the tube in the form of well-defined chambers or recesses. These affect a globular shape externally, and are sometimes so thin as to be translucent, while, internally, the muscular fibrils of the tube are gathered into bundles around the neck or orifice of the little chamber, the whole forming a structure not unlike a miniature hernial sac, and communicating the impression that the muscular layer of the canal had gradually given way under some mechanical force, such as that of the fluid of the tube frequently and strongly compressed,—distending the mucous lining and separating the muscular

* Diemerbroeck, *Anatom.* p. 220. Hartmanii *dubia de Genur.* in *Hallere Disp. Anat.* tom. v. p. 152.

† —, aged 20, died of fever. Believed to have been a prostitute and amenorrhæic. Tubes healthy, and each having a triangular pouch in far end, adjacent to open mouth. This cavity appeared, when the tube was slit open, to be formed by the muscular fibres being gathered into thick closely-set pillars, as a kind of embankment all round the neck of the sac, the bottom of the latter being thin and destitute of fibres. On pulling out the fimbriæ, some of them were seen to terminate at the edge of the sac by a broad triangular base of longitudinal fibres, arranged in bundles, and on each side of that of the left tube, a slender fleshy band was continued internally, from the uterine aspect of the sac along either side of the latter, like a pair of ropes or the strings of a purse, to the abdominal mouth of the tube, where they were slightly adherent, and then terminated each in a free extremity. In the opposite tube, the sacculated form was not so well defined externally, but internally, in the same situation as in the other, the muscular fibres were arranged around a thin expanded portion of the tube just as in the right side, except that here the two fimbriated side bands were situated without on the peritoneal surface.

—, aged 45, a widow for six years, two children. The tubes very large, and full of mucus. In one of them the apex of the usual triangular pouch-like portion near the infundibulum, was extended into an acute point of about two-eighths of an inch in its long axis, and, nearer still to the fimbriated end, was another similar but smaller rising of the tube, separated from the first by a hollow notch; and internally, both of the sacs appeared to be produced by a thinning of the walls of the tube, at these points, connected with an arrangement of the muscular fibrils into bundles near their bases. In the second tube the sacculated form of the portion of it near the infundibulum was well marked, but there was no antrum, and the arrangement of the fleshy fibres was more equable, and did not leave any part of the walls of the canal thinned or deprived of a muscular covering.

* Drelincurtius, de Concep. pp. 30, 32, 35.

† Gendrin, *Traité Philosoph. de Méd. Pract.* tom. ii. Paris, 1839.

‡ Herophilus, in Galen. de Disscet. Uteri, cap. 9.

§ Spigel. de Hum. Corp. Fab. lib. viii. cap. 20.

¶ Galen. de Semine, cap. i. ii.

|| Ibid. lib. ii. cap. 1; De Graaf, de Organ. Generat. p. 312.

** Institut. Anatom. tom. i. p. 438.

†† LONDON MEDICAL GAZETTE, vol. 1843-44.

‡‡ Fallopius, in De Graaf, p. 344; Ruysch, *Thesaur.* vi. p. 15; Ruysch, *Observationes*, p. 60; Morgagni, *Adversar. Anat.* iv. 79.

§§ De Graaf, op. cit. cap. 16.

¶¶ Fallopius, op. cit. tom. i. p. 438.

β Plazonius, in De Graaf, p. 333.

β Barthol. lib. i. cap. 27.

fibres, till at length the inner and outer, or peritoneal, coats were protruded beyond the muscular layer, after the manner of a direct ventral hernia, the fleshy fibrils of the latter being found arranged around its neck.

This modification of the form of the tube, which, if the above view be correct, is a morbid lesion, is more observable during advanced pregnancy, when the rest of the tubes are drawn out into nearly straight lines, than at other times, and was described by Roederer* under the name of Antrum Tubæ, and, although erroneously, was supposed by him to be produced by the detension in it of some of the fluid escaped from the walls of the ovary.

The ejaculatory function attributed by the ancients to the tubes has been noticed, and their structure, consisting, as was supposed, of an inner long, and an outer shorter membrane, connected by loose cellular tissue, the lining membrane terminating in muscular fibrils having a systolic and diastolic power, and the interposed parenchyma admitting of turgescence and erection by whatever increased their contained blood; as also their conducting nature, and the property possessed by their fringed appendages of grasping and compressing the ovaries, were all familiar to physiologists in the 17th century†; while their fibrous structure, composed of a longitudinal and circular layer, was afterwards described by Santorini‡, and has been confirmed by anatomists§ of the present day.

[To be continued.]

DEFINITION OF INSANITY.

As the practitioner's own mind must be the criterion by which he infers the insanity of any other person; and when we consider the various and frequently opposite opinions of these intellectual arbiters, the reader will be aware that I have not abstained from giving a definition of madness without some reason. There is indeed a double difficulty; the definition ought to comprise the aberrations of the lunatic, and fix the standard for the practitioner.—*Haslam.*

* *Icones Uteri Hum. Grav. de Tubo, passim.* Montgomery, Signs and Symp. of Pregnancy, p. 247.

† *Dreincurtius de Tubis*, p. 111. *Ibid.* De Conceptione per. v—ix. Haller *Elem. Physiolom.* vii. p. 102.

‡ *Obs. Anatom.* p. 228.

§ *Velpeau, Traité des Accouchmen.* t. i. p. 85.

POINTS

IN THE

PHYSIOLOGY AND DISEASES OF THE EYE.

BY JAMES JAGO, M.B. Oxon.

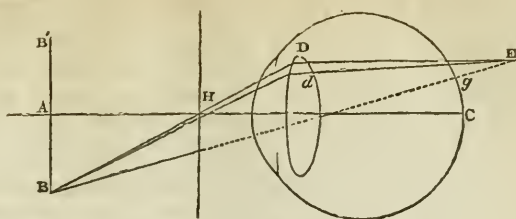
(For the Medical Gazette.)

Magnifying by a Pin-hole.—Everybody knows that, in order to read a book, or see any small thing distinctly with the naked eye, the head may approach too near, as well as recede too far; that there is a minimum as well as a maximum distance. And most people know, too, that if a small hole (as a pin-hole) be made in a card, a minute object may be seen very distinctly through it at a distance much less than the minimum distance of the unassisted sight; and that the object is even magnified by the interposition of the perforated card.

Several attempts have been made to account for this phenomenon; see Müller's *Physiology* by Baly, p. 1151. The following explanation by Henle is undoubtedly the right one; and indeed may be shown to be so. I shall give it in effect, but in my own manner, and that for a reason which will appear. (See diagram, next page.)

The plane of the paper is that of a section of the eye through its axis AC; B'AB, a small object in this plane, and too near for distinct vision; E, that point behind the retina where the rays from B tend to converge after having undergone the different refractions in passing into and through the eye. It is evident that the rays from B will be spread over so large a circle on reaching the retina that they will be mixed with the circular areas of rays formed on the retina from the neighbouring points of the object, and there will be consequently *indistinctness* of vision.

Now let the card with the perforation at H be interposed. All the rays from B, except a few, as BDE, BdE, are interrupted by the card, and these few occupy but a very small circular area—so small as not to interfere materially with those of the points adjacent to B. Hence by means of the card vision is rendered *distinct*. Again, if the unaided eye had the power to bring the rays from B to a focus on the retina, g, in the line BE, would be that point, whereas the actual place of the image,



when the card is used, is at a greater distance from C. Hence B'AB is magnified.

If this explanation be true, it may be said that the image of any point B, on either side of the axis AC, is formed, in this experiment, entirely of rays, which cross to the other side of AC, near H; and that the rays which go to form the image of any point nearer to A than B is, and on the same side of AC, will, after they have passed to the other side of AC, as well as before, be nearer to AC than those which go to form the image of B, and this difference in distance from AC becomes greater as you pass from H towards the eye.

It would follow from what has been just stated, that if a second card, not perforated, were introduced between H and the eye, being always kept parallel to the one at H, and near the eye to render the experiment easier, and in the direction parallel to B'AB and the face, that the object B'AB would begin to vanish from the opposite direction, that is, that B would first disappear, and B' last.

These considerations led me, whilst regarding the flame of a candle through a pin-hole in a card with my right eye, the other being closed, to pass another card (the first being about an inch from the eye) very near the eye from right to left, and parallel to the former. I immediately observed the candle to disappear from left to right. If I passed the card downwards, the candle vanished upwards, and so on always in the opposite direction. The distance of the candle is, of course, of no consequence in this experiment*.

* This experiment occurred to me the first time I read Henle's explanation, and may, for aught I know, be common to others; but it must have been overlooked by Henle and Müller, or they would certainly have adduced it. Indeed, it is hard to conceive how the solution above could have originated for the first time with Henle; for though physical writers on Optics, as far as I have been able to refer, do not notice magnifying by a pin-hole at all—a curious fact—yet they notice and investigate analogous facts;

It is very obvious, that this phenomenon, and that of magnifying by looking at near objects through a pin-hole, are owing to the same principle, and mutually explain each other.

Partial obstructions to the transmission of light to the retina existing in the eye itself.—I have often been struck with the want of a general means of determining the place in the eye occupied by a small body throwing a shadow on the retina, or even of distinguishing satisfactorily such shadows from spots in the retina itself defective in nervous energy; insomuch that Müller cannot say whether the convoluted figures called *muscæ volitantes* “are owing to particles floating in the aqueous humour, or contained in the vitreous body,” and that “these are by some writers confounded with certain symptoms which accompany the development of amaurosis;” and there is a variety of such difficulties.

I hope to show that by what has just been proved, aided by another principle resulting from it, and which I shall by and by enunciate and prove also, the above object may be accomplished.

Let us suppose the pupil to be dilated to its maximum, and any portion or spot of the crystalline lens to become opaque; the consequence of this would be a general impairment of vision, because from every point of the field of vision rays would be intercepted in passing in that direction.

But if the patient were desired to look through a pin-hole, the impairment would no longer be general, but a certain spot of the field of view would be invisible altogether. If the centre of the lens were impervious to light, (by centre I mean any point in its axis), the centre of the field would be invisible. If any other point of the

as the formation of an inverted image by a diaphragm with a very small aperture, and other facts in connection with images by eccentric pencils. It is necessary to what follows that there should be no doubt of the correctness of Henle's explanation.

lens were thus diseased, there would a dark spot appear in the field, and not in its centre. The spot in the field and that in the lens would of course be in the plane passing through them both, and the axis of the eye, but on opposite sides of the axis. Thus, if a dark spot appear above the axis, the disease in the lens is below it; if to the right, to the left; and so on.

Whether this spot in the field in such a case be positively invisible or not, must depend upon the size of the diseased portion on the one hand, and on the smallness of the pin-hole, and its distance from the object and eye on the other.

The same holds good with respect to the capsule of the lens, the aqueous humour, and the cornea.

And, with very little modification, with respect to the vitreous humour also; it being observed, however, that a small spot in it losing its transparency, if it be situated very near the retina, will cause always, without any intervention of a perforated card, a dark, or nearly dark, spot in the field; but the nearer the spot (always considering it of the same size) is to the lens, the less dark will the spot in the field appear without the card; and with the card (one may say) it will cause, in every case, a dark spot in the field.

In connection with the above it must be borne in mind that any part of the retina insensible to light will at all times cause a dark spot in the field, and, if the insensibility be perfect, will appear less dark, comparatively, with the card than without it, because it gives always a totally dark spot; and there being less light admitted with the card, the other parts of the field are less bright, or the difference between them and the dark rendered less. If the sensibility of any part be merely impaired, this will occasion the same relative dimness with the card as without it.

If we suppose a particle of given size to be shifted successively to different parts of the cone of light passing from the aperture in the card to the retina, its shadow will be larger and more distinct wherever the section of that cone perpendicular to its axis (or axis of the eye, if the aperture be held right in front of it) is smaller.

I have shown above that the card punctured with a pin must not be

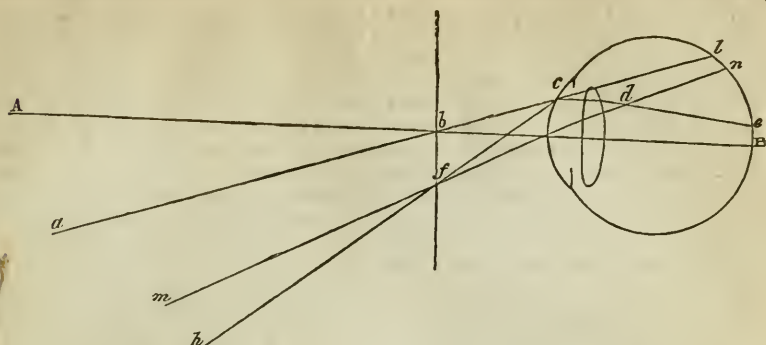
regarded as an ordinary diaphragm with a smaller aperture; for diaphragms are commonly used to shut out the more eccentric rays, and not to prevent that every point of the field of view be seen by rays which pass through all points in the cornea alike. All the reasoning which has been hitherto employed, or which will be employed by and by, depends upon the fact that, with a minute aperture, all the points in the field of view, except the central one, are seen exclusively by rays which cross the axis of the eye before entering it, so that in every section of the eye perpendicular to its axis each point is, as it were, set apart—made sacred—to a ray from a particular point of the field; hence, when a point in that section is opaque, its particular point in the field is unseen, or dark—not the whole field slightly dulled, as without the card, for then each point (except for sections near the retina) receives a ray from all the points in the field.

Moreover, I have proved, in case of any partial obstruction existing in the eye, that we may determine whether it be in the axis or not; and if not, in what plane passing through the axis it is, and on which side of the axis: thus we have, as it were, the meridional plane, or longitude. To this I will add that it would be possible, if we wished to do so, and if we knew the latitude and also all the optical conditions for an individual eye, by observing the angular distance of the obscurity in the field of view from the axis of the eye at the cornea, to calculate the angular distance of the obstruction causing it.

Now, were it possible to determine the distance of the obstruction from the retina, or cornea, or any other fixed point in the eye, we should have also the latitude, and consequently the exact place in the eye of the obstruction would be found as any point on the earth's surface, or within it, is fixed by the same means.

By the aid of a geometrical principle which I shall at once proceed to explain, the determination of the latitude may be accomplished.

Let the above figure represent a section of the eye through its axis *AB* *a b c d e* the course of a ray of light in this plane, through the pin-hole *b*, to the point *c* on the cornea, and, after



traversing the textures of the eye, meeting the retina in *e*; *d*, any point in this line in the interior of the eye. Now, whether we suppose an obstruction to light to exist at *c* or *d*, or *e* to be insensible to light, a dark spot will appear in the same plane of the field of vision, the angular distance of this spot from *A C* being determined by the distance of *e* from *B*.

Again, let us suppose the pin-hole to be shifted in a line perpendicular to the axis so as to be at *f*, join *f c*, and produce *c f* to *h*, then *h f c* is the course of that ray which now falls on *c*; and it is manifest that since this line falls within *a b c*, that its continuation through the eye *c l* must fall without *c e*. Moreover, let *h f d n* be that ray which, entering through *f*, passes through *d*; it is plain that *f m* must fall within *f h*, and *d n* between *c e* and *c l*.

It follows, from the above reasoning, that if, when the card has its orifice at *b*, an obstruction at *c* would be dark on the retina at *e*, and that an obstruction at *d* would be dark at the same point, and that the card be removed so as to have its orifice at *f*, the obstruction at *c* would be dark at *l*, and that at *d* would be dark at *n*, so that *n* is without *e*, but not so far as *l* is. Hence, the further from the retina the obstruction is that causes the obscurity in the field, the further will it appear to move on a given cross-movement of the card.

Also, inasmuch as an ordinary eye has the power of bringing parallel rays to a focus on the retina, the ray from the field which falls on *e*, after that the orifice is placed at *f*, will be parallel to the ray *a b c*; hence the obscurity due to an imperfection of the retina will not appear to move at all on the motion

of the card. Even if an object be looked at too near to give parallel rays, provided that it be not within the adjusting distance, this will be true; and even for an object within that distance may be considered so for practical purposes.

Hence an obscurity, owing to an imperfection of the retina on a movement of the card across the axis of the eye, will not appear to move, but one due to an obstruction in the vitreous humour will move according to its distance from the retina, one to an obstruction in the capsule or lens still more, one to an obstruction in the aqueous humour even more yet, and one to an obstruction in the cornea most of all: though these variations according to distance from the retina do not follow the law of proportion.

Again, inasmuch as the size of the cone or pencil of light which enters the eye from the pin-hole is determined by that of the cornea (or at least the assertion is near enough to the truth for my purpose), or, in other words, the cornea is the base of the cone, it follows that the place in the field of view of the shadow of an opacity in that part will remain the same for all positions of the hole; hence the shadow always seems to move exactly with the hole, as if its cause were fixed in it. Thus the fluid on the conjunctiva might make us imagine that the card had not been punctured clean.

The shadow of anything outside of the eye, as that of an eyelash, moves faster than the hole, or rather the apparent motion of the hole.

The result of the above proposition may be placed in another light. Suppose that, instead of the pin-hole being moved, as in the figure, from *b* to *f*

two holes, *b* and *f*, to be pierced in the same card. Then there will be two distinct shadows of *c*, viz. *e* and *l*; also two distinct shadows of *d*, viz. *e* and *n*. The apparent distance between *e* and *l* will be the same in every case as that between the centres of the two holes (for *c l* always equals the segment of the retina occupied by the space *b f*). The distance between *e* and *n* will be less as *d* is closer to the retina, and when *d* reaches the retina it will equal zero.

By a number of holes properly placed, a number of shadows of a small obstruction, situated in the more anterior parts of the eye, may be projected on the retina. The number of shadows possible is less for an obstruction near the retina.

The number of shadows that may be projected will depend also upon the nearness of the obstruction to the axis of the eye.

If the holes in the card be at a greater distance from one another than the diameter of the pupil, or, which is the same thing, if the fields of view due to the holes do not encroach upon one another (or the holes themselves seem to do so), any shadows that may be thrown must be perfectly distinct and well defined; but for certain purposes the holes may be placed much nearer with great advantage.

By fixing a graduated segment of a circle behind a light, or towards the sky, so that the eye might be in its centre, and observing how many graduations or degrees the obscurity passes through on a given number for the card (or for a given distance between two holes), we might, were we so disposed, make very nice calculations as to the exact place in the eye occupied by a small obstruction projecting a shadow on the retina; that is, supposing we knew the exact indices of refraction and other optical conditions of the different media of an individual eye; all the data for such a calculation being then present.

But nothing of this kind is required in practice; the only requisite being to determine the structure in which the cause of an obscurity exists. I shall proceed to show an easy practical way, in certain cases, of applying the above principles to do this.

If we make a very minute puncture with the point of a needle through a

card, and look through it at a bright light—say a large candle-flame, or the sky, we shall find that a hair passed between it and the card (as those of the lid), a tear on the eye's surface, if there be any, or other fluid there, even minute globules, perhaps what are termed *muscae volitantes*, give their characteristic projections on the retina.

I shall first make a few remarks on obstructions to light anterior to the conjunctiva.

The eyelash sometimes interferes with the field of view. It seems to be the under, and is therefore really the upper; and this interference may be avoided by pulling up the brow, or by holding back the head and looking in a downward direction. Tears, like drops of water on a window, or other fluid on the conjunctiva, like clouds horizontally shaded, parallel to the lids and caused by them irregularly or regularly waved or streaked, or even blotted very distinctly, appear with the card, though by no means visible without it. The nature of these fluids by which the shadows are thrown may easily be recognised either by the optical laws laid down above, or by their disturbance on moving the lids. Sometimes this fluid is so suffused over the conjunctiva as to cause to the eye without the card a halo round a light, and with the card, on moving it across the eye rapidly from side to side, an appearance as if the light were armed with wings or fans of light, and that it revolved about its axis with great rapidity. These humours are often troublesome to the microscopic observer.

[To be continued.]

CHARACTERS OF INSANITY.

DR. HASLAM gives the following account of one of his patients, a man aged 30. When a new patient was admitted, he generally enticed him into his room on pretence of being an old acquaintance; and as soon as he came within his reach, he immediately tore his clothes to pieces. He was extremely dexterous with his feet, and frequently took off the hats of those who were near him with his toes, and destroyed them with his teeth. After he had dined he generally bit to pieces a thick wooden bowl, in which his food was served, on the principle of sharpening his teeth against the next meal. He once bit out the testicles of a living cat, because the animal was attached to some person who had offended him.

ON THE PATHOLOGY OF THE NERVOUS SYSTEM.

BY R. ROWLAND, M.D.

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THE obscurity in which many points in the pathology of the nervous system are still involved, may perhaps be considered a sufficient excuse for the present attempt to investigate some questions connected with this very important branch of medical literature.

The portion of the nervous system most open to our observation is the nerves. We have frequent opportunities of witnessing the effects of morbid action in them, either arising from accident or disease. We can observe the nature and extent of such lesions, and note their immediate effect, and the concurrent symptoms to which they give rise, and by applying knowledge thus obtained, to the explanation of morbid phenomena affecting the nervous centres, we might be conducted to a plausible explanation of some obscure symptoms. I propose therefore in this and one or two subsequent papers to enter upon this inquiry.

The first step in this undertaking will be to show that all portions of the nervous system are similarly affected by similar lesions—that a morbid process which occasions a certain train of symptoms when affecting a nerve, would produce analogous symptoms in the brain or spinal marrow. These would, indeed, differ most essentially in their external characters, and would be varied according to the function of the part in which the morbid action is going on; but there are certain laws which seem to be generally applicable in all such cases, which are sufficiently evident as affecting the nerves, and almost equally so when applied to the nervous centres.

The first circumstance that strikes us in disease or injury of a nerve of some size, is, that the symptoms are not referred to the precise seat of the lesion, but are felt principally in the minute ramifications of the affected nerve. This is a result so frequently observed that it must be regarded as the rule in such cases. There may, indeed, be obscure aching pain in the immediate vicinity of the injury, aggravated by

pressure, or any other irritation; but the chief suffering is almost invariably at a distance from the actual seat of the disorder, and even when the diseased portion of the nerve is pressed upon or irritated, the aggravation of the symptoms thus induced, is still referred to its remote branches.

Precisely the same course is observed in some affections of the brain and spinal column. The symptoms referred to the nervous centres themselves might be so trivial as scarcely to attract the patient's notice, while in some organ more or less remote the signs of disorder are urgent and distressing. These secondary affections, when seated in external organs, are more readily recognised as arising from disease in the nervous centres, than when internal parts are similarly affected. It would be easy to cite cases, where the evidence of organic disease in an important viscus was apparently so complete as to have deceived even physicians of skill and experience, where the symptoms were subsequently proved to have arisen from cerebral or spinal disease.

Another circumstance, usually observed in these secondary affections, is, that they are paroxysmal, coming on in fits of occasional violence, and again subsiding for a period. Thus it often happens, when a nerve is injured, that a certain degree of pain or tenderness is always excited by pressure. The violent remote pains are not always elicited even by roughly handling the injured part, whilst at other times the slightest irritations, even the contact of the clothes, or a stream of cold air, are sufficient to bring on a paroxysm. It would appear from this, that at certain periods some unknown change occurs in nerves thus affected, during which their various remote sympathies are excited into action, and a paroxysm of suffering more or less intense ensues. So it is in incipient disease of the brain. Some evidence of disorder is perhaps generally traceable in such cases, although sometimes only faintly delineated, and occasionally not recognised, excepting when reflecting on the past history of cerebral affections, after their real nature has been unequivocally manifested. There might, for instance, be some sensation of weight or numbness, some change in the feelings or temper, some perversion in the senses of vision or hearing, or some similar

symptom, existing permanently, and denoting a certain degree of cerebral lesion. But, besides these signs, there are occasional accessions of violent acute symptoms, which after a period subside, and the disease is again confined within its legitimate boundary. These occasional incursions of the disorder might be announced by various signs. Sometimes a paroxysm of neuralgia is produced; in others an epileptic seizure results from this cause; or fits of maniacal violence might occur, in patients who at other times scarcely show a sign of intellectual disorder.

As happens in the injured nerve, therefore, the more violent symptoms connected with practical disorganization of the brain are paroxysmal; they do not necessarily result from the nature of the injury, but are capable of being restrained and kept in abeyance by carefully avoiding all causes likely to irritate the primary disease.

A reference to what often obviously results from irritation of nerves will show that these deductions are not merely problematical. We often see, for instance, that the functions of the brain are impaired from an injury to a nerve or nervous twig, or from pressure on a nerve by a tumor or otherwise; and it is therefore easy to imagine that a very moderate structural disease of the brain would be sufficient to light up those occasional irradiations whose outward manifestations might be convulsions, epilepsy, mania, &c.

Another point, to which I am desirous of calling attention, in the diseases of the nerves, is, that when their local irritation has existed for a considerable time, the sphere of their sympathetic action becomes widened. For example, it might happen that at first the only secondary effect perceived is in the remote branches of the injured nerve. Subsequently, other parts become affected, having no direct communication by nerves with the seat of the injury, except indeed through the medium of the nervous centres. Thus the opposite limb to that where the diseased nerve is situated might become the seat of acute suffering, coming on in paroxysms, and evidently occasioned by any circumstance that aggravates the original disorder; or, this irritation, instead of being transmitted through the brain, may apparently be retained by it, and its effect then would be disturb-

ance of the cerebral functions in the manner before alluded to.

The same process is observed in affections of the brain. At first, the paroxysmal symptoms are usually moderate, and affect the patient similarly at each return. It might be a neuralgic affection of the face or extremities, or convulsive movements of certain muscles. Afterwards, symptoms denoting more extensive sympathies appear; such as epileptic paroxysms, convulsions, maniacal violence, and the like.

This pathological principle in reference to nervous complaints appears not to have been hitherto carried out to the extent of which it is capable. Its application is perhaps universal in this class of disorders. When slight irritation is kept up for a little while on the skin by pinching or tickling, we begin to feel sensations in parts more or less remote from the part thus irritated. How many remote sympathies are excited by gastric irritation, by uterine disturbance, and by many other causes!

We are sometimes able to trace the successive steps by which such irritations are conveyed from one part of the nervous system to another. In the curious affection termed spinal irritation, we can often observe the excitement of the uterine organs reflected on the spinal column, marked by pain or tenderness over certain portions of it. These points of spinal tenderness become themselves the source of various remarkable symptoms, through the agency of the nerves emanating from the affected portions of the spine. Similar marks of irritation are sometimes evident on the nerves themselves, at least in their larger trunks, and perhaps in their minute ramifications. This might coexist with spinal irritation, or it might be wholly independent of it. It is very commonly present in hysterical girls, who suffer from those troublesome pains under the left mamma which are so common in those patients. By tracing the intercostal nerves from the spine towards the sternum, a spot will frequently be found, towards the angle of the rib, where tenderness is felt on pressure, and at the same time a paroxysm of pain in the breast is excited. This spot is not painful, except when it is pressed, and indeed the patient has generally not noticed it before the examination has been made. A few leeches, or a blister,

or rubbing a strong liniment over the tender point of the nerve, will often remove all the symptoms. I have sometimes observed the same thing in sciatica, the irritation being perceptible at different points of the affected nerve, but more or less remote from the seat of the principal suffering. In facial neuralgia, also, this kind of irritation sometimes exists.

The affection now alluded to differs essentially from the painful spots observed by M. Valleix in neuralgia, which are themselves the chief seats of suffering during the paroxysms; and from these spots the shooting or lancinating pains apparently proceed. The spots which I now speak of are, on the contrary, unaffected during the paroxysm; they are even in general unknown to the patients until they are pointed out; they are, in short, similar in every respect to the spinal irritation. And, moreover, it is sometimes found, both with regard to this affection of nerves and spinal irritation, that pressure over certain portions of the spine, or certain points of a nerve, will cause an aggravation of suffering in remote parts, although no feeling of pain or tenderness is experienced over the part of the spine or nerve where the pressure is applied.

This irritation may pass from one point of a nerve to another, without occasioning any evident disturbance in the intervening portions of the nerve. It may pass also from one region of the spine to another, or be present at the same time in two or more points of that organ, whilst the space between those points exhibits no symptom of disturbed function. Irritation might also originate in an injury of a nerve, and be transmitted through the medium of the nervous centres to a nerve, or set of nerves, on the opposite side of the body, without apparently in the slightest degree disturbing the functions of those organs. There are many important deductions to be made from the application of this principle, but at present I will confine my remarks to the subject in hand.

It might *à priori* be expected that actions which evidently take place in the spinal column and the nerves would likewise influence the other parts of the nervous system, particularly the brain, and there are many reasons for believing that this is really the case. I

have frequently been able to detect spots of extreme tenderness over the cranium in neuralgic and epileptic patients. These are sometimes present, at others altogether absent, and occasionally I have fancied that the paroxysms of those disorders were moderated or retarded by the application of remedies to these cranial irritations. There is, indeed, sufficient proof of this action in some cases of cerebral disease. For instance, the patient might have suffered for many years from a neuralgic affection of the scalp, or from intense pain in a certain point of the head, occasionally recurring, but disappearing for periods of more or less duration. After death, dissection shows disease of the brain, but in parts remote from those where the cranial tenderness had been observed.

With regard to the secondary irritations, whether arising from organic lesion or functional disturbance, no uniformity of results can be traced. For instance, an injury to a nerve precisely of the same nature would excite a set of symptoms totally different in different individuals; or, what is more frequently observed, the irritation of a carious tooth irritating the gum at the same point in various patients, would on one occasion cause facial neuralgia; in another, pains of some remote organ; in a third, partial paralysis or amaurosis; and in a fourth, epilepsy.

These variable results seem to be determined by previous predisposition, whether innate or acquired. Thus, such irritations occurring in childhood are generally manifested by cerebral disturbance. The brain, instead of transmitting the morbid excitement onwards to other parts, retains it to the disturbance or destruction of its own functions. The same result is observed where there is any disease pre-existing in the brain, when any source of excitement is sure to become manifest in an augmentation of the cerebral disorder. Where the heart is diseased, or peculiarly formed, it will become affected by such irritation and palpitations, or symptoms of angina pectoris would probably ensue. We may frequently observe this tendency unequivocally displayed, in an old cicatrix, or a limb that had been broken becoming the seat of neuralgic pains, in consequence of uterine or visceral disorder; and by artificially exciting a part,

those pains might be withdrawn from their original seat to the parts thus irritated.

One of the most curious circumstances connected with the pathology of the nervous system, is the proneness, in its diseases, to assume an intermittent and often a perfectly periodical type. Various have been the theories to account for this remarkable phenomenon. Latterly, it has been suggested that such paroxysms might be explained by the successive generation of a morbid poison within the system, exciting for a time diseased action, until the effects of such a poison have been expended—after a certain lapse of time to be again renewed. The successive crops of eruptions observed in the febrile exanthemata have been adduced in favour of this theory, and the paroxysms in ague have been explained on the same principle. But this theory, however ingenious, is hardly in accordance with facts.

Let us take, for example, a slight injury to a nervous twig. A sharp sensation of pain occurs at the moment of the accident, and for a day or two afterwards there is more or less pain constantly present. But afterwards the pain becomes intermittent, and, in many cases, perfectly periodical, returning at the same hour on each day, or on alternate days, or at still longer intervals. Where is the poison in such a case as this? How frequently, also, do we observe intermittent actions dependent upon organic disease of the brain, and from many other causes, in which there is no possibility of suspecting the existence of a morbid poison? It is in the nervous action itself that the source of intermission must be sought; and if this is true in the cases cited, it must be equally applicable to all parts of the nervous system; for it would be absurd to imagine the presence of a poison in some cases, when it is shown that the same effects are observed in nervous diseases without such agency.

Intermittent actions, in reference to the nervous system, are of two kinds: the first consisting of the periodical return of symptoms just noticed, and the second of the repeated return and cessation of action during the paroxysms. Thus, in a neuralgic attack, when its progress is carefully analysed, it will be found not to consist of one

prolonged pain, but of several separate attacks, usually commencing gradually, arriving at its acme of severity, and then declining. After this, there is a momentary cessation, and then the same course recommences. A similar course is often apparent in an epileptic or convulsive paroxysm. The fit does not always consist of one continued struggle, but manifest remissions appear, in which the convulsive movements are moderated, or cease. The same process is observed in hysteria, and in tetanus; even the maniacal paroxysm is capable of this subdivision (in some instances at least), although the intellectual faculties might remain clouded throughout.

But all intermittent paroxysms are not necessarily periodical. Frequently, in nervous diseases, the intervals are uncertain and irregular, and even when these disorders, at their commencement, observe a regular type, their character might be changed subsequently, and their periodicity destroyed.

Let me again return to the injured or diseased nerve, which has been made the basis of these remarks. When the symptoms connected with this lesion have put on the periodical type, if any circumstance should occur by which a new source of irritability is created in the system, the periodical character of the symptoms is very commonly destroyed. Thus, in females, this occurrence is frequent enough upon the appearance of the catamenia, the periodical character of the nervous complaint being lost at these times, and renewed upon the cessation of the discharge. Disorder of the digestive functions, mental agitation, a catarrhal or slight febrile accession, have likewise a tendency to destroy periodicity. When these intervening irritations are removed, the nervous paroxysms become again regular and periodical. It is observed, also, that when intermittent fevers are improperly treated, and some additional disturbance is excited, they frequently become irregular, and pass into the remittent type; and, by administering remedies which remove this additional burden, the ague paroxysms resume their periodical character.

From these facts, we might, I think, argue that the natural tendency, in nervous diseases, when undisturbed by other influences, is to have accessions

at regular periods, and that this character is, in doubtful cases, evidence that a complaint is one of the nervous system.

There must necessarily be an obvious distinction between those symptoms dependent upon the destruction of any portion of the nervous tissue, either from disorganization or otherwise, and those which are merely secondary, or sympathetic of that condition. The former, when the disorganization is complete, must be fixed and permanent, whilst the latter might be transitory and changeable. Thus, when a limb becomes paralytic in consequence of structural disease of the brain, the paralysis is of course permanent, although there might be other symptoms varying in form and intensity, and assuming new characters from hour to hour. In extensive disease, these different classes of symptoms are perceptible enough, and, by separating the permanent symptoms from those that are only occasional, we might be guided to important conclusions as to the seat and nature of the malady. In a minor degree of cerebral disease, this distinction of its symptoms is less obvious, and it requires care and discrimination to discover permanent loss of function when it exists only to a certain extent; and such symptoms might readily be overlooked in a crowd of more remarkable, although less enduring signs. But it is always useful, and sometimes very important, to separate the permanent symptoms in these cases from those which are only occasional; and it is even more important to do this in cases where the lesion is confined to a small space, than where it is more extensive. In the one case, its further progress might be arrested if early discovered; in the other, a cure is all but hopeless. If, for example, there is never-ceasing numbness in some part of the body, or slight distortion of vision—a constantly-dilated pupil of one eye, or partial weakness of an extremity, or similar symptoms,—they, in reality, more unequivocally announce the presence of formidable cerebral disease than the more striking and agitating signs that might appear from time to time in the progress of the disorder.

There is an apparent contradiction to this law in the intermission that often takes place in nervous disorders

dependent upon structural disease; so that there are intermittent symptoms and a permanent lesion. But when such cases are closely examined, it will be found, either that the destructive process has not entirely annihilated the functions of the diseased part, or that the intermittent symptoms belong to the class of secondary irritations, and are not immediately connected with the functions of the diseased part.

If a nerve is only partially divided, or if a tumor presses upon it, its functions are impaired or perverted, but not destroyed; and the symptoms connected with an accident of this description, denote rather an exaltation of function than its diminution or destruction; and, under such circumstances, they are commonly paroxysmal and intermittent. These symptoms cease when the nerve is completely divided, and the parts in connection with it are deprived of sensation. So, when disease is progressing within the cranium, it is often announced at first by an exaltation of the sensibility on parts which subsequently, in a more advanced stage of cerebral disorganization, are entirely deprived of sensation, and become permanently paralytic; and when the mental powers are impaired from this cause, the course of the disorder is similar. At first, there is wild incoherence with maniacal ravings, occurring occasionally, which are finally replaced by complete fatuity.

We might sometimes obtain valuable hints, by watching the progress of these cases, respecting the successive steps of the cerebral lesion. Symptoms formerly intermittent are observed to give place to permanent loss of function in the affected part, whilst new intermittent actions commence in other organs. For instance, an arm might, for a considerable period, have been the seat of frequently-recurring neuralgic pains, which subsequently cease, and the limb becomes palsied. Then, the leg of the same side is attacked with similar pains of an intermittent type, which likewise cease after a period, when complete hemiplegia ensues.

There are some curious facts respecting the effects of certain morbid influences acting generally on the nervous system. Under such circumstances, there is a manifest tendency in the disorder to shew itself principally in connection either with the upper or lower

terminations of the nervous centres, or in both those situations at the same time. It would be needless to adduce many instances of this law. The headache that results from disorder of the *primæ viæ*, the pains in the back, and the cerebral oppression of febrile attacks, are examples of this kind; the same tendency is observed in the most striking symptoms of epilepsy, hysteria, trismus, hydrophobia, and many other affections. When neuralgia arises from exposure to wet and cold, or from any debilitating influence, it usually takes the form either of facial neuralgia or sciatica.

In other cases the irritation is first manifested in the upper division of the nervous system, and afterwards gradually passes downwards, its progress being marked by various symptoms. It is by no means uncommon to observe nervous pains first attack the face, and gradually pass along the trunk to the lower extremities, their intensity usually diminishing as they descend. Would it be an improbable conjecture that the poisons of the febrile exanthemata are likewise influenced by this law? These poisons lie dormant in the system for a certain time without necessarily causing any symptoms; the first signs that announce their activity prove that the nervous system is deeply implicated, for symptoms arise which could exist in combination from no other cause, viz. rigors, vomiting, convulsions, headache; and it would almost appear that until the poison begins to act upon the nervous centres no sensible effects are produced.

Now, it is worthy of remark, that the eruption in these affections first appears in the upper parts of the body; and the same remark applies to the mucous membranes. Would this be the case if the course of the eruption were determined by the circulation alone? It would be difficult to imagine that the poison should exist in the blood at the upper part of the body, and there manifest itself, whilst the blood in the lower portions of the body remains uncontaminated. The directing power which determines the course of the eruption must necessarily, it appears to me, be lodged in the nervous system, and there seems at least a probability that it is guided by the same law in this, as in the other instances alluded to.

It might be suggested that there is something in the nature of such poisons themselves which disposes them to seek in preference the upper portions of the body. But the same course is observed in common catarrh, where there is no poison. This complaint usually begins with coryza. The irritation then travels downwards until it reaches the bronchi. This is supposed to be owing merely to the extension of the inflammation along the mucous membranes, without having any more occult cause. But this explanation is hardly satisfactory. It is more probable, that from the commencement an impression is made upon the nervous system, and that the mucous membrane, which subsequently becomes the seat of inflammation, undergoes, at that time, some change of innervation by which it is marked out for that process. How otherwise can we account for the chilliness, depression, and other febrile symptoms, that announce a catarrhal attack? These symptoms would hardly result from inflammation of the mucous membrane of the nostrils; nor would such inflammation, when excited by local causes, be likely to pass down the air-tubes. But I have already greatly exceeded the intended limits of this paper, and for the present I conclude.

COLOUR OF THE HAIR IN THE INSANE.

ON the suggestion of a medical gentleman, I was induced to ascertain the prevailing complexion and colour of the hair in insane patients. Out of two hundred and sixty-five who were examined, two hundred and five were of a swarthy complexion, with dark or black hair; the remaining sixty were of a fair skin, and light, brown, or red haired. What connection this proportion may have with the complexion and colour of the hair of the people of this country in general, and what alterations may have been produced by age, or a residence in other climates, I am totally uninformed.—*Haslam*.

CURE OF INSANITY.

PATIENTS who are in a furious state recover in a larger proportion than those who are depressed or melancholic. A hundred violent, and the same number of melancholic cases, were selected: of the former, sixty-two were discharged well; of the latter, only twenty-seven. Subsequent experience has confirmed this fact.—*Id.*

MEDICAL GAZETTE.

FRIDAY, MAY 9, 1845.

WITH one portion of the new Medical Reform Bill we cannot help expressing our unfeigned satisfaction. The Home Minister has announced his intention of henceforth making provision, in all parts of the United Kingdom, for an examination in midwifery; and that there shall be in the registration a distinct mark that the party has undergone examination in midwifery, and has so passed. To all who reflect upon the great importance of this branch of the profession, it must appear extraordinary that it should have been allowed to lie so long neglected, both by the Colleges of medicine and surgery, as well as by the Legislature: we say neglected, for although an attendance upon lectures has been for some years rendered compulsory on candidates for a diploma, yet, if we except the recently established University of London, there has been no attempt made to test their competency by a proper examination. The College of Physicians, the College of Surgeons and the Society of Apothecaries, appear to have abandoned this as neutral ground; for we are not aware that any effort has ever been made on the part of these bodies to call to their aid, in conducting their examinations, men of experience and standing in midwifery: and, without such aid, the examinations would be a mockery. We believe that by their Act, the Society of Apothecaries is legally disabled from calling in assistance of this kind, since it is absurdly required, under the statute, that the examiners should be of necessity, members of the civic guild of Apothecaries of the city of London—as if the qualifications required for an ex-

aminer were necessarily bound up with civic or corporation privileges*. So far as we know, the Colleges of Physicians and Surgeons in London have never attempted to examine in midwifery, candidates for their diplomas; and with respect to the College of Surgeons, it has manifested a decided unwillingness to confer the privileges granted by its recent charter, upon those of its members who followed the practice of this branch of the profession. The requiring attendance at lectures on a subject on which no examination is instituted, is, we do not hesitate to declare, one of the worst features of what has been designated “the certificate system.” If the subject on which attendance is imperatively required be of practical importance, unquestionably the knowledge of a candidate should be tested by one or more experienced men, even although they may not happen to belong to a civic guild, or a chartered college; and no diploma should be issued except to those candidates who showed a competent knowledge of the subject. It appears to have been forgotten that midwifery forms a large part of the daily duties of a general practitioner: yet in his College examination, while he has been probably called upon to describe minutely the relative position of muscles, fasciæ, blood-vessels and nerves, in respect to operations which he may never be required to perform, no question has been asked upon the means to be adopted in difficult and complex labours, requiring surgical skill.

The public have generally regarded the possession of a medical diploma as

* We are glad to perceive that this privilege is to be abolished under the new bill. The absurdity of legally enforcing such a regulation, however, becomes more glaring when we consider that the examiners belong to a society, the admission to which may be by purchase or inheritance, without any medical knowledge or examination.—(Vide Sir J. Graham's Speech, Feb. 25th, 1845.)

a sufficient guarantee of a man's knowledge of midwifery ; but they are little aware that, so far as this branch of the profession is concerned, the document merely shows that its possessor has been compelled to enter to certain courses of lectures on the subject. It establishes nothing with respect to the number of lectures that he may really have attended, or the amount of obstetric knowledge which he may have acquired. The diploma of the University of London is an exception to this rule ; for candidates are there required to undergo a distinct examination by a competent examiner, who is a professor of midwifery. The number who pass this examination is very limited, and thus the acquisition of a knowledge of this subject is now entirely left to the good sense of the student, who may be alive to its importance, and who may carry his views of professional knowledge a little beyond the subjects of examination laid down by the Colleges. Independently of this feeling, which we believe prevails extensively among the present race of students, the study is encouraged by the formation of obstetrical societies in some of the hospital schools,—the drawing up of reports, the tabulation of cases, the offering of prizes ; and by the frequency of examinations by professors and teachers. The mischief which might result from the non-examination of candidates by the Colleges, is thus in great part counteracted by the good sense of the students, and the energy of the teachers ; but still this does not prevent many from entering the profession, who are wholly unfitted to practise midwifery, although they may possess the diplomas of the College and the Hall.

Our attention has been painfully called to this subject by the recent occurrence of some cases which appear to reflect strongly on the profession,

and which stamp some of its members with a degree of ignorance, in reference to midwifery practice, for which the public will not fail to hold the examining bodies to a certain extent responsible. The destruction of life by want of skill in the performance of a difficult surgical operation, positively sinks into nothing, compared with the revolting details which have lately come before the profession and public, in reference to malapraxis in midwifery, by certain so-called members of the profession. Verdicts of manslaughter will not check the occurrence of these cases. The Legislature should rather strive to prevent the wholesale destruction of life thus occasioned by ignorance and incompetency, than attempt to remove the evil by the punishment of the perpetrators.

At the last Norfolk Summer Assizes, a person of the name of Garland was tried and convicted of the manslaughter of a female named Dent. It appears that the deceased, who supposed herself to be in the third month of pregnancy, imagined from certain symptoms that she should have a miscarriage. The prisoner was called in to attend her. Whether he held any diploma as a regular medical practitioner or not, does not appear ; still he practised as such ; and from the evidence adduced, it seems that in his efforts to bring away what he considered to be the child, he tore out and removed from the body, about six yards of the small intestines ! The woman died in seventeen days ; and, on inspection, the uterus was found in a normal and unimpregnated state ! The vagina had been extensively lacerated, and the intestines had been drawn through the laceration. The prisoner was sentenced to one month's imprisonment !

We do not know whether the prisoner was a licensed practitioner or

not; but he had so little knowledge of midwifery, that he was unable to distinguish the unimpregnated from the impregnated uterus! This case at any rate demonstrates the necessity for some strong legislative restriction in the practice of the obstetric art.

At the last Derby Winter Assizes, a man of the name of Gallimore was tried and convicted of the manslaughter of a female, whom he was called to attend in labour. It appeared in evidence, that the deceased was suddenly delivered, and that the placenta had been expelled with the child. The prisoner, from ignorance or incompetency, imagining that the placenta had not come away, tore the uterus out of the body of the deceased, and in a few hours afterwards, she died. The Judge, in charging the jury, said that if there was evidence to prove misconduct arising from gross ignorance or criminal inattention, then undoubtedly the person so acting, was guilty of manslaughter in case death ensued. The prisoner was convicted, and sentenced to six months' imprisonment.

This individual was described as a surgeon in extensive practice, but whether he held a license from any of the Colleges did not appear.* The details of this and the preceding case show that the practice of midwifery among the poorer classes of society, is in some localities, in the hands of men wholly ignorant of the subject. We cannot, however, go the length of saying, with some of our cotemporaries, that cases of this description occur only among unlicensed practitioners, or of arguing that the license, as it at present stands, whether obtained from the Royal College of Surgeons or the Society of Apothecaries, can be any test of competency to practise this branch of the profession. The acquisition of

a practical knowledge of this subject is, as we have already seen, almost optional with the student. The examiners of the College and Hall require a certificate of his attendance on lectures and practical instruction, which it is well known he may procure without much difficulty, whether that attendance have been regularly given or not. The candidate knows that he has no rigorous ordeal to undergo in the shape of an examination; and he is therefore induced to bestow more attention upon the differences among drugs and the botanical characters of medicinal plants, a knowledge of which is considered far more necessary to his success in obtaining a diploma.

It is impossible to deny, that the cases which we have adduced, afford a strong argument against permitting ignorant and incompetent persons to practise midwifery; but, as the law at present stands, a man may be a qualified practitioner, and yet know little or nothing of this branch of the profession. In a future number, we shall endeavour to establish this by reference to another case of more recent occurrence.

Reviews.

Guano Streams. An attempt to suggest a Method of Preserving the Refuse of the Drains of Towns for the purpose of Manure: in a Letter to His Grace the Duke of Buccleugh, K.G. Chairman of the Committee appointed by Government to inquire into the Sanatory State of Large Towns. 8vo. pp. 22. London: Smith, Elder, and Co. 1845.

WE are induced to notice this letter, not merely from the ingenious suggestions contained in it, but from the very great importance of the subject in relation to the health of the inhabitants of large towns and cities. Of late years, commissions have been issued to inquire into the sanatory state of towns

* We understand that he certainly was not a Licentiate of the Apothecaries' Company.

and populous districts, as well as for the purpose of determining the influence of bad draining, imperfect ventilation, and, lastly, of intramural interments, in adding to the number of diseases, and increasing the rate of mortality, in crowded populations. As a result of these inquiries, several reports have been issued, which clearly show that we are a long way behind perfection in all these matters. Of intramural interments it is not, at present, our intention to speak; we can only regret that those persons upon whose influence the success of any legislative measure in relation to this subject must mainly depend, should have recently declared so strongly that there were no grounds for altering what most people regard as both an indecent and unhealthy practice.

The Commission has discovered—what might have been anticipated—that fevers and other epidemics abound in those localities which are badly drained and badly ventilated, and many important suggestions have been made for remedying these two evils. The Commission, however, has chiefly directed its attention to the best methods of getting rid of the soil, or, as the author of the pamphlet before us calls it, of the “cloacine,” rather than to a method of disinfecting it, and rendering it usefully applicable as manure. Undoubtedly, if, without injury to health, and by economical processes, we can thus employ the contents of the drains and sewers of great towns, we shall be reaping a double advantage; *i. e.* preserving the health of the community, and furnishing a fertilizing manure.

The great principle which the author advocates is that of bringing the refuse, or cloacine, in contact with the free oxygen contained in aerated water. Our chemical readers need not be informed that all water contains oxygen in a perfectly free state, and the respiration of fish is well known to depend on the washing of the gills by this oxygen. It is remarkable, also, that nature appears to have created a strong affinity between water and air. It is only after very long boiling, or long exposure in vacuo, that water can be made to lose the air which it ordinarily contains. Dalton found that less than two hours' boiling would hardly deprive water of its air. Recently distilled water is also

well known to absorb air with great rapidity. Free oxygen may be easily detected in it in a very short time after distillation. Again, what is further remarkable,—the admixture of water with alkalies, acids, and saline substances, does not deprive it of this property of retaining air. Lime-water, diluted sulphuric acid, and the solutions of all common salts, will be found to contain as much air as the corresponding quantity of water*. This is important, because it shows that the presence of foreign substances in water will not interfere with the chemical action of the free oxygen.

The author's attention was first directed to the effect of aerated water on common manure, and he was led to infer that the gaseous and saline matters were here not only dissolved, but that all offensive effluvia were destroyed. He then quotes an experiment which bears out his view on this subject. The most offensive compound met with in decomposing ordure, or “cloacine,” is well known to be the hydrosulphuret of ammonia. If this compound be exposed to aerated matter, and the vessel frequently agitated, it sooner or later undergoes a chemical change. The water loses its offensive smell, and a mixed compound of sulphate and hyposulphite of ammonia results, the latter being the transition-stage of the hydrosulphuret to sulphate. This fact has been confirmed by the observations of Boussingault and Payen; and so far the principle upon which the author proposes to bring about the decomposition of animal matters in drains and sewers, must be considered as established. The following extract, while it fully explains the author's principle, shows that he is no mere theorist, but that he has based his views upon the

* It may be as well to mention the test for free oxygen in water. Add to the water protoferrocyanate of iron. (This is a milky-white compound obtained by precipitating pure protosulphate of iron by ferrocyanide of potassium. The protosulphate of iron may be obtained sufficiently pure by agitating bright iron filings for a few minutes with a solution of sulphurous acid.) As this compound diffuses itself in water, it absorbs the free oxygen, and passes to the state of Prussian blue, even at the bottom of the vessel, where there can be no air, except what is really contained in water. By the same experiment, it is easy to discover free oxygen in lime-water, in sea-water, and other liquids.

According to Dalton, 5000 cubic inches of water will yield 100 cubic inches of air, composed of 34.2 oxygen, 55.8 nitrogen, and 10 carbonic acid.

actual observation of what takes place in nature :—

“It is the application of this principle (the admission of *oxygen*) to the decomposition of cloacine, that I venture to suggest as the most, and perhaps the only, effective mode of preserving it as a manure, and preventing the enormous waste that for want of some such process is allowed to take place. It had been for some time applied under my direction to the manure-heap with satisfactory results; but the possibility of applying it to the refuse of drains with a view of preventing fetid decomposition, seemed to be hopeless, until the observation of what takes place in the slow-running streams that receive the refuse of drains and sewers into their current, of which there are many examples in my neighbourhood, led me to conclude that nature employs, on a large scale, the same principle of aeration in purifying the cloacine.

“Every one must have observed black offensive streams issuing from drains, and mingling with the pure water of a small current. At first the rapidity of the current may prevent the condition of the mingled streams being closely examined; but soon the stream expands, and then flowing more gently, the water appears as a dark lake, depositing its dark mud in its bed. Slowly flowing along, it is seen to become more and more pure, until, having deposited the whole of its suspended materials, it appears as a clear stream, as free from all impurities as if nothing had polluted its course. The water that conveys such refuse seems to the eye unfit for any purpose save that of manure; the black bed of the stream gives it a dark colour, and the whole mass of water looks like a black unwholesome lake. But if some of the water be taken from the stream at some distance from the drain, after it has had time and space to deposit its freight, it is clear to the eye, and free from any unpleasant odour. If the stream becomes narrow as it passes onward, it sometimes will appear as a clear pellucid current, fit for any of the ordinary purposes of life.”

The effect of running water is then adverted to. This consists not merely in mechanically suspending matters, and carrying them onward, “but there is good reason for supposing that it

modifies the chemical changes that are going on, by presenting to the nascent nitrogen, sulphur, and other elements, the means of forming new combinations.” p. 12.*

The conditions required for carrying out this principle are then stated. It is shown that the supply of waste water for the purpose, so far as concerns the metropolis, is ample; and it only requires the ingenuity of some experienced engineer to contrive a sufficient length of underground channel to bring the principle into operation. It might be difficult, in many places, to construct new sewers for the purpose; but under the proposed system of legislation, there would be good opportunity for trying the experiment on a large scale, whereby alone, as the author admits, its value can be properly tested. The present practice consists in conveying the filthy refuse by the nearest channel to the Thames—thus contaminating the water which is again used for the supply of large sections of the metropolis. The plan which it is here proposed to substitute is to convey it, in contact with an abundance of aerated water, throughout a long channel at a sufficient depth to prevent the exhalation of foul effluvia; and then, after it shall have deposited the animal matters, acidified by contact with oxygen, and forming salts by combination with bases in the bed of the stream, to convey the residuary clear water into the river, or some other outlet. It is a remarkable fact, that we are daily throwing into the Thames, to the contamination of the water, a quantity of valuable manure, while we are dispatching ships, at great cost, to Africa and South America, for the sake of importing the excrement of birds!

We have noticed this pamphlet at

* It may be curious to inquire what quantity of water is required to furnish free oxygen in order to combine with given weights of sulphur, phosphorus, and nitrogen. About twenty-two gallons, or 5000 cubic inches, of common water, contain $34\frac{1}{2}$ c. i., or $11\frac{1}{2}$ grains of oxygen. The quantity of oxygen, therefore, contained in 170 gallons of water (*i. e.* 84 grains) will suffice to acidify entirely 16 grains of sulphur, a like quantity of phosphorus, and 14 grains of nitrogen. Of the acidification of sulphur, we have a proof in the decomposition of hydrosulphuret of ammonia as above mentioned. Of the acidification of phosphorus we may convince ourselves by entirely immersing a quantity of finely divided phosphorus in common aerated water tinted by litmus, when it will be speedily reddened; and of the acidification of nitrogen we have evidence in the formation of the nitrates of lime potash in the vicinity of manure heaps

some length, owing to the very important influence which the questions propounded in it must necessarily have in relation to medical police, and the health of crowded populations.

Hospital Reports.

LONDON HOSPITAL.

A Case of Tubular Aneurism undergoing spontaneous cure: with Observations.

By J. LUKE, Esq. Surgeon to the London Hospital.

WILLIAM DOBBINS, aged 31, dock-labourer, a stout muscular man, in the enjoyment of good general health, and temperate in his habits, was admitted into the London Hospital, Feb. 19th, 1845, on account of a tumor which occupied the upper part of the right thigh. The tumor was of an oblong form, extending from Poupart's ligament down the thigh between three and four inches, in the direction and situation of the femoral artery, and projecting anteriorly more considerably near its lower extremity than at its upper. The transverse measurement of the tumor, immediately beneath the ligament, was about two inches, increasing in its descent to nearly three inches. There was very strong pulsation uniformly over its whole surface, which caused the finger to be raised perceptibly when laid on it. The tumor enlarged at each pulsation equally in all directions, so that the fingers were forced asunder during each pulsation, and were again approximated at its termination. A lymphatic gland or two lay anteriorly, but the tumor was otherwise compressible, and capable of being emptied of its contents, yet filled again on the remission of pressure. There was not any sound or bruit discovered when the stethoscope was applied, nor did the patient complain of any pain in the part. He however had a feeling of weakness in the limb generally, which prevented him from carrying burdens such as he had been accustomed to carry. He also experienced a slight lameness, and an occasional cramp in the muscles of the calf. The temperature of the limb was not diminished, and the arterial trunks below the tumor pulsated as strongly as in the opposite limb. There was an old cicatrix of a bubo in the groin.

He stated, that the first discovery of the tumor was made about a year before his admission, when undergoing an examination before entering into a club. It did not then give him any inconvenience, nor can he assign a cause for its origin, but thinks it probable that it was produced by lifting

heavy weights. He is of opinion that it was as large when first discovered as it is at present. He thought nothing of the tumor for six months, at the end of which, when running, he was suddenly seized with cramp in the muscles of the thigh and calf, and pain in the groin, which latter induced him to put his hand to the part. Although not enlarged, he found the swelling pulsated more violently than before. From that period the leg had become stiff and weak; slight exercise also brought on cramp, with an increase of pulsation and pain in the tumor. There was also an occasional feeling of coldness in the limb.

With a conviction on the mind that the tumor was aneurismal in its character, it was thought improper to place implicit credence in the patient's statement, that it had not increased in size since its first discovery. He was therefore placed in bed, with the intention of determining by personal observation whether or not it underwent any increase in its dimensions; the determining of this point being necessary to guide the opinion and the advice as to the course best to be pursued in his case. It was thought that the application of a piece of adhesive plaster spread on leather, and of a spica bandage over it, was quite compatible with these intentions. They were accordingly applied over the tumor March 3d, and not again disturbed until the 8th. On their removal on this day, it was found that a considerable change had been effected in the tumor. Instead of being soft and compressible, and capable of being emptied of its contents, it was hard and unyielding, and slightly painful on pressure. It was further observed that its pulsation had entirely ceased, as well as the pulsation of all the arterial trunks of the limb; the femoral, popliteal, and anterior and posterior tibial arteries, having in turn been examined. The foot and leg felt colder to the hand than the opposite, although the thermometer did not indicate any actual diminution of temperature. While collecting information respecting a state of things so unexpected, the patient stated that when the plaster and bandage were first applied he experienced considerable pain in the tumor for about half an hour, attended by an unusually violent throbbing, which perceptibly raised the bandage. At the end of that time the throbbing ceased, and there had not been any return. The plaster and bandage were reapplied, and the limb was wrapped in wool.

On the 22d of March the tumor was still hard, consolidated, and without any pulsation. There was apparently an obliteration of its cavity, the contents of which had undergone some diminution from absorption. Mercurial ointment spread on lint was

applied, and the patient allowed to move out of bed.

April 2d.—He has walked about, and, he states, with greater ease and freedom than when admitted; but the pain in the calf remained.

19th.—Has left the hospital for about ten days, but, as requested, paid the hospital a visit to day. He still complained of pain in the calf, especially when going up stairs. There was also numbness of the foot at times. The circulation was apparently restored sufficiently for the proper nourishment of the limb, yet pulsation had not returned in any of the arterial trunks. The size of the tumor had undergone very considerable diminution, and the aneurism had been without doubt cured.

In the intentionally brief remarks which I propose to make upon the above very interesting case, I would wish to first call attention to the unsatisfactory use of terms employed to distinguish the different kinds of aneurismal diseases from each other. It may be generally asserted that any change of terms in common use is decidedly objectionable so long as they convey definite ideas; but when they fail to do this, a change becomes desirable. It is for this reason that the terms *true* and *false*, and *diffused*, as applied to aneurisms, are unsatisfactory; because they fail to convey a meaning uniformly of the same import to all, and require some circumlocution for their explanation. Thus, some surgeons employ the term “true” to designate all kinds of aneurism in which a sac is formed as a result of disease; while others restrict it to dilatation of the tunics only. Again, others exclude the uniform dilatation of the tunics altogether, and mean merely by the term a partial dilatation of one side of an artery. So also the term “false” is used to designate all aneurisms without previous dilatation of the tunics, whether they are the result of ulceration, rupture, or wound; while some apply the term “diffused” to aneurisms arising from the latter cause. However much I may generally be indisposed to change of terms, I think these may with advantage be allowed to become obsolete, especially as others may readily be found which will designate the particular forms of disease by their own import.

Thus the different kinds of aneurism may conveniently be thus designated:—1st, To the most common kind, characterised by the existence of a sac, the term “saccated” may with propriety be applied as simply indicative of that fact, without entering into any speculations as to the means by which the sac is produced. If we wish to make distinctions of the saccated form, we might use the term “traumatic” for those forms

of it which are the result of wound. 2dly, There is a form of aneurism characterised by a pretty nearly uniform dilatation of the tube of the artery, of which the case above related forms an example. This, by some surgeons, has been considered not to be aneurism at all; while by others it has been regarded as the true form of that disease. From the circumstance of the tube of the artery undergoing a pretty uniform dilatation, I think that the term “tubular” would not be inappropriate, and would express adequately the kind of disease meant to be designated. 3dly and 4thly, The terms “dissecting aneurism” and “varicose aneurism,” are sufficiently expressive of the forms of disease to which they are at present applied, and need no further observation. But 5thly, The term “aneurism by anastomosis,” as it involves an hypothesis, may be advantageously changed for “capillary aneurism,” as merely conveying an idea that the minute or capillary vessels are the structures affected. Thus we have—

1. Saccated aneurism, including traumatic,
2. Tubular aneurism,
3. Dissecting aneurism,
4. Varicose aneurism,
5. Capillary aneurism;

under which terms may be embraced every known variety.

With regard to the case above related, the first circumstance which calls for comment is the external form of the tumor. In this respect it is generally by no means so globular as the saccated disease, but is usually oval, or rather fusiform, with the long axis lying in the course of the arterial trunk. The external form results from the manner in which the disease is developed, which, in cases similar to the above, is by a limited but pretty uniform expansion of the arterial tunics, with a corresponding enlargement of the area of the vessel at its dilated part. The extent of the vessel so dilated varies, but above and below the diseased part the artery retains its healthy dimensions. From this state of things arise some important considerations.

It will be recollected, that in saccated aneurism the blood is thrown out of the course of the circulation into the sac, where, probably, the influence of the current is so far diminished in certain cases as to allow the contents to become partially quiescent, and thereby disposed to coagulate. In the tubular form, however, the whole force of the current passes through the centre of the dilated part, and must obviously tend to counteract any disposition to coagulation of the blood contained therein. It is to this cause that the absence of solid contents has been usually attributed, as well as the

greater softness of the tumor, and its capability of being entirely emptied by pressure. We might also be disposed to think that in this circumstance we see a cause tending to counteract any disposition which might exist towards a cure.

Another circumstance worthy of observation is the usually very low rate of increase of the tumor in such cases. This is in accordance with what should be expected when the resistance of the arterial tunics and the force of the current of blood are nearly equal in amount; and we might infer that they are so in this form of disease by simply witnessing the fact of this slow increase. But it might be supposed that as the tunics become thinner by expansion, their resistance would become less able effectively to oppose the force of the current of blood, and that consequently they would yield proportionably more rapidly as the tumor became larger. I believe the reverse to be the fact, arising from the force of the circulation upon the interior of the expanded part being diminished in a greater ratio than the resistance of the vessel, from well-known causes which in hydraulics influence the force of currents passing from small tubes into those of larger dimensions. It is not difficult to imagine that, in the progress of tubular aneurism, a status may at last be arrived at, in which no further increase of the tumor would take place; simply from the influence of the dilatation upon the force of the current at the part. Nor am I satisfied that, in the above case, such a status had not been attained; for it was remarked by the patient that he had not observed any increase of the swelling during the twelve months which he had cognizance of its existence.

The last and most important consideration is that relating to the means by which the cure in the above case was effected. It must be evident, however, that little positive information can be gained upon this subject, and we must consequently be content with mere surmise, or form our opinion from general considerations. It is the common practice in such cures, and in those which take place in the saccated form of disease, to attribute them to the occurrence of coagulation of the blood within the artery or within the sac, which, by occlusion of the vessel or sac, prevents the ingress of fresh blood, and consequent increase of the disease. I am disposed to think that such explanation is unsatisfactory, both in reference to the case related and to aneurisms generally, when they undergo spontaneous cure.

The question is one of some moment, and perhaps may merit a few observations, particularly as it has a practical bearing. It is well known that, in examining the sac of an aneurism, it is not unusual to find both

fluid and solid contents, the first being blood, the last being generally supposed to be blood in a coagulated state, but changed in its character. By attending to the last, it will be found (as pointed out by Mr. Wardrop in the *Cyclopædia of Surgery*), that it consists of two portions; the one coloured, the other nearly colourless. The coloured portion being undoubted coagulum, retains the common characteristics of that substance, and usually, but not always, occupies the central part of the sac. It is to the colourless, or what I have called the colourless portion, that I wish to direct attention, because it is on this that the curative process mainly depends. This portion mostly adheres to the interior of the sac, but the adhesions are easily separable; so that it is sometimes found partially or wholly separated, probably by causes exterior to the sac. It is formed in layers, and the laminated arrangement is easily seen when a section is made. These layers are sometimes but loosely connected with each other, and being imposed on each other, are necessarily concentric. The common explanation given of their formation is, that they are produced by successive deposit, from the blood flowing through the sac: thus Mr. Hodgson, in speaking of the spontaneous cure, says, "*the cavity of the sac is gradually filled with layers of coagulum.*" Mr. Wardrop, however, has adduced some reasons for supposing that these layers are the result, not of coagulation, but of an action taking place in the parietes of the sac. The reasons which he adduces may perhaps fail of carrying conviction to the mind (a fate which may also attend the additional reasons which I shall presently adduce), yet they are sufficiently cogent to deserve serious consideration. Those which he principally relies on, are the "great difference in the anatomical characters of a common clot of blood and a fibrinous concretion;" "the concreted fibrine having its interior surface smooth and polished;" and the "vascular connection," which he has every reason to believe exists between the fibrinous concretion and the sac. The additional reasons, which have convinced me that the common explanation of these formations is incorrect, are derived from the examination of the fibrinous layers themselves, and the occasional interposition of coloured coagulum between them, or between them and the sac. It is not in every case that these interpositions are found; but when found, their relations to the colourless laminæ are most important, if not conclusive evidences for the elucidation of this subject.

If we adopt the common supposition that the whole solid contents of a sac are mere deposits from, or coagulations of, the blood, the explanation of the arrangements in the production of the colourless laminæ

with respect to these coloured masses is almost unintelligible; for we cannot explain how it happens that, if the whole mass be the result of one process of formation, parts of it, which lie close together, or are inclosed the one within the other, acquire different characters, such as these coloured and colourless contents possess. Under a real similarity in the process of formation, it seems most highly probable that they would present also a similarity of appearances, and that they would be either entirely coloured, or entirely colourless, but not with the coloured and uncoloured parts intermixed, as we sometimes find them.

I think, therefore, we must discard the opinion that the solid contents of an aneurism are the result of one process only of coagulation, as failing to afford a satisfactory explanation of the phenomena. All difficulty, however, vanishes if we assume two separate processes. There can be little doubt that the coloured contents are coagula of blood, as they retain appearances sufficiently characteristic for their recognition as such. It is in looking to the position which these occupy with respect to the uncoloured or fibrinous concretions by which they are surrounded, that we are led to a satisfactory explanation of the manner in which the latter are produced. When we look at these clots, we find them either entirely surrounded by colourless fibrinous concretion, and excluded thereby from the fluid blood passing through the sac, or lying between the fibrinous concretion and the sac itself,—in which latter situation they may or may not be excluded from contact with the fluid blood. When in the former of the two positions, we cannot account for their insulated situation, unless by supposing the clot to have been formed upon the surface of a fibrinous mass, and becoming subsequently inclosed by new deposits of fibrine, gradually augmented until the clot becomes central with regard to the whole mass. But in the latter situation blood may be insinuated between the fibrinous concretion and the sac, when, as before mentioned, they become separated by an accidental cause, in which case blood so insinuated will coagulate, and retain its characteristics.

Having determined these points, we have next to discover on which surface of the fibrinous concretion these minute clots are really formed. If it be on the interior, or that surface which is in contact with the circulating blood of the sac, it is then no doubt derived from that blood; and the fibrinous concretions, by which it eventually becomes inclosed, are equally derived from the same source. On the contrary, if it be on the exterior, or that surface in contact with the sac, the fibrinous concretions which subsequently inclose it are, with equal certainty, derived from the sac; since, by the

formation of new adhesions after the clot has formed, the circulating blood becomes excluded, and no other source remains than the sac, from which any accretion of new matter can be derived.

I am disinclined to the former supposition, from my belief that had the clot been so formed, the subsequent deposits, by which it becomes inclosed, would be of the same character and colour as the clot itself; and a wholly different appearance from that which we actually find would result therefrom. On the other hand I adopt the latter supposition, not only as more in accordance with our general ideas of the reparative process, but also, and more particularly, from the observations I have had an opportunity of making upon the aneurismal contents. Thus a small coloured clot had formed between the sac of an aneurism and the fibrinous concretion contained within it, arising, I believe, from the passage of blood into a space left by a slight separation of the two from each other. The further ingress of blood had been prevented by new adhesions, and the process of inclosure had commenced by the deposit of a thin layer of fibrinous matter upon its exterior surface, which matter adhered to the sac, and had no doubt been formed subsequently to the coloured clot. A similar inclosure had occurred to another clot in the same aneurism, but which, by the deposit of a greater number of fibrinous layers, had become more deeply buried within the fibrinous mass, and consequently more centrally with respect to the aneurismal tumor.

Taking the order of sequence of the deposits to be as I have stated, it follows that, the blood not having access to the exterior fibrinous layers, by reason of their adhesions to the sac, any increase which accrued to them could not have been derived from the blood, but must of necessity have been derived from the sac itself, with which alone they were immediately connected. Granting this mode of formation of the exterior layers, a proof of a strongly presumptive kind is established, that the whole of the fibrinous layers were formed in a similar manner, and that the whole were the result of successive formations, each pushing its predecessor forward upon the cavity of the sac, and being itself in turn pushed forward by its successor, and enclosing a portion of coloured coagulum which had fortuitously become congealed upon the surface.

This may perhaps be sufficient to shew the general tendency of this argument to prove the sac itself, or more properly its vessels, to be the efficient agents in these fibrinous formations, although much else may be adduced both from examinations of the aneurismal contents, and the analogies of other diseases.

The space I have already occupied must be my excuse for not proceeding further upon this point. It must be evident, however, that if the fibrinous concretion be derived from the sac, and not from the blood, the order of increase must be different from that which is generally supposed. Instead of growing by deposits on its inner or central surface, the increase must take place from the exterior surface which lies in contact with the sac. The action itself by which the vessels deposit the fibrinous accretion is probably of the plastic kind, and bears a certain analogy to the adhesive processes in other parts. Such being the probable means by which nature attempts to cure in these diseases, we are furnished, by the knowledge of them, so to conduct our treatment as at least not to counteract her efforts. We may thus assign a reasonable ground for objecting to a practice which experience has already shewn to be injurious, and can view the abstraction of blood not as a means of promoting coagulation of the blood, but as a means merely of diminishing the force of the circulation, and its consequent disturbing influence upon the sanitary plastic actions of the vessels of the sac. We therefore learn to avoid the enormous abstractions of blood formerly, and even sometimes at present, so injuriously used, from a conviction that, although they diminish the disturbing influence of a perhaps too powerful circulation, they also to the same, if not to a far greater extent, diminish the reparative action of the vessels of the sac, from which alone any permanent benefit can reasonably be expected. Neither shall we have the same dread as formerly of the slight inflammations which occasionally arise in the sac, since by such inflammations the curative action is likely to be promoted. Thus, while we learn to direct our endeavours to diminish the disturbing influence arising from the force of the circulation, we at the same time learn to avoid weakening the powers of the system by the use of means which induce extreme inanition.

GUY'S HOSPITAL.

Hysterical Epilepsy and Paralysis.—Malinger, &c.—Cause doubtful. (Reported by Mr. J. C. FOTHERBY.)

E. S., aged 17, admitted into Mary Ward, Guy's Hospital, under the care of Dr. Hughes, Dec. 11th, 1844, for paralysis of the right leg. She was a short stout girl, with dark hair and eyes; pallid complexion; full face, expressive of strong animal propensities, and had been latterly engaged as a servant. She stated that her health had not been good since she was eight years of age, when she had an attack of scarlatina, from which time, according to her own assertion, she had never been entirely free from anæmia of the lower extremities, and occa-

sionally of the whole body. Catamenia first appeared at the age of ten, and had since recurred with few exceptions every week, and continued from one to three or more days, and occasionally for as many weeks. They were at first natural in colour, and had latterly been dark, with coagula. Two years since she was first affected with fits simulating epilepsy, preceded by headache, accompanied by foaming at the mouth, and biting the tongue, but not followed by sleep. She has frequently been affected with loss of power in different parts of the body, aphonia, globus, and other symptoms of hysteria. Seven weeks since, on recovering from a paroxysm, it was found that she had lost the power of motion, and the feeling of her right side. Both had been partially restored, and upon her admission the right leg was the only part affected. She was able to move the affected limb in bed, and upon investigation it was soon evident the feeling was not deficient. She complained of pain in her back, but no headache; the tongue, skin, and pulse, were natural; appetite good; she was at first cupped upon the loins, and took saline purgatives, with evident or apparent benefit.

On the 20th, the catamenia appeared, with increased pain in the back. These occasionally ceased, and reappeared, till Jan. 4th, 1845, and were sometimes accompanied with coagula. On their temporary cessation, it was considered important to ascertain if any disease or growth existed in the womb. The obstetric physician was therefore requested to see her, and reported that she was free from disease, but expressed an opinion that the menorrhagia was not improbably caused by unnatural excitement of the sexual organs. This being ascertained, and completely coinciding with opinions formerly expressed, she was desired to keep out of bed, and to move about as much as she was able. Tonic medicine, with aperients, combined with electricity, were prescribed. She improved slightly, but slowly. As it now became tolerably evident, as had been throughout strongly suspected, that her affection was in part at least feigned, or that she pretended to be more disabled than she really was, the shower-bath was ordered to be used every morning. Though she was, or professed to be, quite unable to support herself during progression without assistance, and could not get down stairs to the bath, she jumped out of the bath at the approach of the shower, ran unassisted across the bath-room, and managed to put the nurse who attended her in her place, and gave her a good ducking. To a repetition of the bath she strongly objected, but the physician was firm; she submitted more quietly, improved daily in her power of progression, walked down to the bath, and in twelve days walked out comparatively well, if not absolutely cured.

Proceedings of Societies.

MICROSCOPICAL SOCIETY.

April 23, 1845.

A New Genus of Sponge.

A PAPER, by J. S. Bowerbank, Esq., F.R.S., entitled *Description of a New Genus of Calcareous Sponge*, was read.

The subject of this paper was found attached to the stem of a new species of *Coralina*, received by the author from Mr. George Dunsterville, surgeon, of Port Elizabeth, Algoa Bay; after whom it has been named. It was found on the beach at Cape Relief, about ten miles from the town. Its description is as follows:—

Dunstervillia. Generic character sponge; calcareous outer surface arranged in polygonal plates, or compartments; body composed of simple straight angulated canals, radiating from the central axis of the sponge.

D. elegans. Sponge sessile, sacculate, compressed; ventral orifices single, terminal, surrounded by a single or a double fringe of erect, simple, asbestiform spicula. External oscula indistinct. Spicula of the body simple, double pointed, triradiate.

Although closely approximating to the genus *Grantia* of Dr. Fleming, its structure is so peculiar as to justify the author, in his opinion, in making it the type of a new family; and the more so, as, although he is acquainted with no recent analogue, yet there is a fossil to which it appears to be very closely allied. The fossil alluded to is the *sphaerionites tessellatus*, the outer surface of which presents a tessellated structure, closely resembling this sponge. It must, however, be remarked, that there exists much doubt as to the real nature of this fossil, but as the external appearance of the plates or compartments in it is precisely like that of the recent sponge, and as certain peculiarities of the internal structure are apparently to be met with in both, and also as the microscopical examination of the outer and inner surfaces of the fossil present appearances which strongly favour the idea of its spongy origin, Mr. Bowerbank does not hesitate in referring both to one and the same genus.

A second paper, by the same gentleman, being a description of a new genus of fresh-water sponge, was also read. The singular and highly-interesting sponge the description of which forms the subject of this paper, was found at Tenby, S. Wales, by a poor man who collects fresh-water shells to sell to the visitors. It occurs in a large muddy ditch, in the vicinity of Tenby, which, although very near the sea, has no communication with it. To this sponge, Mr. Bowerbank

gives the name of *somatisspongia*, and its generic and specific descriptions are, sponge, with a central, round or oval coriaceous body, surrounded by three winged keratose fibres, which spring from its surface.

S. pulchella.—Sponge, free; body covered with reticulations, the areas of which are depressed; furnished with two mammæ, opposed to each other either in the long or short axis; in the latter case, with a deep sinus intervening. Fibres flexible; reticulations polygonal, without interstitial fleshy matter or spicula. This beautiful little sponge is more or less of an oval form. It rarely exceeds half an inch in length, from one extremity of the fibres to the other, and the central body is about four lines in length. The fibres are of a greenish amber colour, the body partaking of the same hue, but much deepened by its greater degree of density. When denuded of its surrounding fibres, the body appears to be divided into numerous nearly equal-sided polygonal areas, which are most frequently five- or six-sided. From the angles of these reticulations the fibrous structure springs, preserving the same form of reticulation as that of the parent surface. Its internal structure also presents many interesting peculiarities, which were fully detailed in the paper.

Selections from Journals.

PATHOLOGY.

UNUSUAL FORM OF INTUSUSCEPTION OF THE COLON.

DR. HARRISON detailed, to the Surgical Society of Ireland, the particulars of a very unusual case: he had himself never met with a similar one, nor had most of the authorities upon the subject alluded to an exactly parallel occurrence. Some time since a patient had been sent to him, who was then much emaciated, and with a countenance expressive of great suffering and distress, such as is observed in internal malignant disease. Vomiting was so incessant that the patient could hardly speak. On examination a tumor about the size of an orange was found near the umbilicus between it and the ribs of the left side. It could be moved up and down, and was free from pain at times, except on pressure. It appears that this case lasted nearly three months: at no period was there any complete obstruction of the bowels; they were slow, but acted every second, if not every day. The vomiting, which was at first obstinate, abated much during his stay in the hospital, so much so that four and even five days passed without any. The man was at times very free from suffering, but at others he would scream out and say, "Kill me, or cut me open!" Most of

the remedies employed completely failed to give the slightest relief. The only medicine that at all benefitted him was opium, which he continued to take until his death. On examination of the abdomen after death very little appearance of disease presented itself at first. There was no general inflammation of the peritoneum or omentum, but, on raising up the latter structure, and examining the colon, an intus-susception of this intestine was seen to have taken place, its descending portion being carried up to the transverse arch, probably for an extent of three or four inches. The transverse arch being laid open, Dr. H. exhibited the lower portion of the intestine lying in the upper, with its orifice resembling an os uteri projecting into a dilated vagina; this contracted state of the orifice might, he thought, in some degree account for the violence of the pain that had been suffered. The intus-suscepted portion of the intestine was found in an ulcerated condition, accounting for the unhealthy discharge that had existed during life. Various opinions respecting the nature of the case were entertained, not one who saw it having diagnosed it, except, indeed, Dr. Law, who, when he first examined the patient, at once observed that he knew of nothing it resembled so much as intus-susception. Had an opening been made in the right lumbar colon, a little above the cæcum, Dr. Harrison thought it might be reasonably expected that the man would have survived. During the discussion which ensued, Dr. O'Beirne remarked that in cases of intus-susception, whether progressive or retrogressive, that had come under his observation, the intestine above the intus-suscepted portion was considerably dilated, while the part below it was much contracted, and that the sigmoid flexure of the colon, instead of lying in the iliac region, lay in the pelvis, doubled over the rectum, and to its left side. Reference was made to a plan of treatment recommended by Mr. Gorham, of Tunbridge, in cases of this description. It consisted in throwing air into the rectum in such quantities as to cause the intestine to unfold itself.—*Abridged from the Dublin Medical Press*, March 5th, 1845.

[Mr. Gorham (in the 3d volume of Guy's Hospital Reports) advocated the treatment upon the authority of three successful cases reported in the American Journal of Medical Sciences. Nos. 25, 26, and 30; "it consists merely in introducing the nozzle of a common bellows into the rectum, and gradually inflating the intestine."

Where the colon is implicated in intus-susception, which is far more frequently the case in infants than in the adult, the invagination is usually of the "progressive" kind, and the parts commonly involved are the end of the ilium, cæcum, and a larger or less

portion of the ascending, transverse, descending, or even a part of the sigmoid flexure of the colon.—*Ed. Gaz.*]

MIDWIFERY.

ON THE EXPULSION AND EXTRACTION OF THE PLACENTA BEFORE THE CHILD, IN PLACENTAL PRESENTATIONS.

DR. SIMPSON, of Edinburgh, has bestowed much research in elucidating this question. Dr. Radford, of Manchester, also entertains similar views on the subject. The latter gentleman's opinions have already appeared in the *GAZETTE*. Dr. Simpson draws the following conclusions; his data consisting of 135 cases.

1st. That the complete separation and removal of the placenta before the child is very seldom followed by any great hæmorrhage.

2d. That, on the other hand, the previously existing hæmorrhage always ceases from the moment the placenta is perfectly and completely detached from its connection with the uterus.

3d. That the cessation of the hæmorrhage is explicable, not on the idea that the descending head of the child acts as a plug or compress upon the exposed orifices of the uterine sinuses, but on the mutual vascular economy of the uterus and placenta, and the circumstance that the hæmorrhage principally comes from the partially detached surface of the latter.

4th. That the placenta may be, and ought to be, detached from its connection with the uterus in some varieties of unavoidable hæmorrhage, and that these varieties are, for the most part, exactly those in which our present recognised methods of treatment are most inapplicable and most unsuccessful.

5th. That, under such circumstances, the practice would in all probability be attended with much saving of maternal life.

6th. That this treatment has been, in repeated instances, accidentally followed with complete success, when had recourse to by midwives and others, under supposed mismanagement, and in defiance of the established rules of treatment in this special complication. And,

7th. In one very dangerous case, in which the previous hæmorrhage was great, and continued in despite of the evacuation of the liquor amnii, and where the os uteri was imperfectly dilated, he adopted, as a matter of principle and choice, the plan of separating and extracting the placenta, with complete success, the bleeding immediately ceasing, though the child was not expelled for about two hours, and the mother recovering without one bad symptom. Appended are the minutes of a meeting of the Medico-Chirurgical Society of Edinburgh, among which the following remarks occur. "Professor Simpson gave a communication on the ex-

pulsion and extraction of the placenta before the child, in cases of unavoidable hæmorrhage. He showed, that in common cases of presentation of the placenta, when managed according to the rules generally followed under the circumstances, the mortality among the mothers was very great. Out of one hundred and seventy-four cases tabulated from different authors, by Dr. Churchill, this complication had proved fatal to forty-eight mothers; and a more extensive table of three hundred and thirty-nine, drawn up by Dr. Simpson himself, presented a mortality of one hundred and fifteen mothers; or, one out of every three died.

In contrast with these statistics, Dr. Simpson brought forward a number of cases, (some previously recorded, and others collected from private sources,) in which the placenta had come away before the infant, either expelled by the natural efforts alone, or in consequence, in several instances, of the reputed bad management of the accoucheur. The number of cases collected was one hundred and twenty in all. Out of these only eight mothers died, or one in fifteen. In two of these, the cause of death was not stated by the reporter; in three the patient perished from puerperal fever; and two only were alleged to have died from hæmorrhage. In one of these two last cases, the hæmorrhage ceased as soon as the placenta was separated, but too late to save the woman.

The same cases also show that, though much blood may have been escaping before the placenta comes away, yet, as soon as the separation is complete, the hæmorrhage usually ceases, or becomes very trifling. A complete separation of the placenta is thus proved to be far less dangerous than a partial one,—a fact that, at first, may appear somewhat paradoxical, but which is readily explained by the structure of the foetal placenta. The hæmorrhage comes chiefly from the placenta itself. When it is only partially separated from the uterus, the blood enters freely by the adherent portions, and escapes as freely from the surface of the portion of the placenta that is detached.—*Provincial Medical and Surgical Journal*, Feb. 5th.

A PLEA FOR SOMNAMBULISM.

IN one of the letters of the "Ellis Correspondence," dated December 11th, 1886, is the following. "At the Old Bailey, Lord Culpeper's brother was brought in guilty of manslaughter, for killing one of the guards (and his horse to boot) with a blunderbuss, as he rid by in the morning on the *patronille*. Mr. C. owned he might have done the act, but says he did it in his sleep, and produced half a hundred witnesses to prove how he often committed those extravagancies in his sleep, which he much abhorred when awake."

Medical Intelligence.

MEETING OF GENERAL PRACTITIONERS.

ON Tuesday evening a meeting of the National Association of General Practitioners in Medicine, Surgery, and Midwifery, took place at the Hanover Square Rooms, to receive the report of the Committee relative to the proposed new College. Mr. Pennington was in the chair. The report recommended the application for a new charter, in preference to any compromise with the College of Surgeons. The majority of the votes of members was in favour of a five years' franchise for electors, and fifteen years' qualification, for a seat in the Council of the proposed College. The report was adopted by a large majority; and it was announced to be the avowed object of the National Association to apply for incorporation under a new charter.

CHANGES IN THE PHYSIC AND SURGERY BILL.

ON Wednesday evening, Sir James Graham announced the changes which he intended to introduce into the measure for regulating the medical profession. In the first place it may be observed, the general practitioners are to have a charter of incorporation, and are to form a distinct College for the examination of candidates. The age of the candidate is fixed at not less than 22. He will first have to go before a joint board of examiners, composed of six from the College of Surgeons, and six from the College of Physicians. This board will have the power of granting permission to the candidate to undergo examination by the College of General Practitioners. At the age of 26, any candidate will be permitted to go before the examining board of the College of Physicians or Surgeons, according to whether he wishes to practise as a physician or a surgeon. The Apothecaries' Company will merge in the new College, and the power of putting down illegal practice, to the extent to which it now exists, will be placed in the hands of the Council. It will not, however, be allowed to interfere with any practitioners who obtain a right to practise from the English, Scotch, or Irish Colleges under the new bill. This, of course, is simple justice; the great principle of the measure—that is, an equal privilege to practise in any part of the United Kingdom—is retained; and from the discussion which ensued, we are glad to find that an equality of qualification will be required to entitle a candidate to examination.

ROYAL COLLEGE OF SURGEONS.

Gentlemen admitted Members.

Friday, May 2d.—W. S. Rootes.—F. W. Barnes.
—W. C. Hunt.—A. P. Cahill.—T. Hall.—F. R.
Hoghton.—N. C. Hatherly.—W. B. C. Maxwell.
—R. Bentham.

Tuesday, 5th.—J. W. Bradshaw.—C. Husband.
—H. Winterbottom.—E. Nolloth.—J. Fraim.—
W. H. Young.—W. Andrews.—J. Gabb.—H.
Wilson.—J. Evans.—G. W. B. Calcott.—
W. Collyns.—J. J. Cole.—W. A. Barr.—G. I.
Gunthorpe.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

Thursday, May 1st.—John Gabb, Bewdley,
Worcestershire.—Wm. Byers Sealy, Downend,
Bristol.—Wm. Withall James, Exeter.—Robert
Sage Ellis, Swavesley, near Cambridge.—George
Turner, Sherborne, Dorset.—George Williamis,
Hampstead, Middlesex.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturd. April 26.

BIRTHS.		DEATHS.		Aver. of 5 yrs.	
Males...	689	Males...	448	Males...	491
Females...	610	Females...	456	Females...	472
	1299		904		963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James.....	157
NORTH—St. Marylebone; St. Pancras; Islington; Hackney.....	180
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; City of London..	154
EAST—Shoreditch; Bethnal Green; White- chapel; St. George in the East; Stepney; Poplar.....	168
SOUTH—St. Saviour; St. Olave; Bermond- sey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich..	245
Total	904

CAUSES OF DEATH in the Week ending May 27.

Col. A. Weekly Averages of 5 Springs; Col. B. of 5 Years.

	A.	B.
ALL CAUSES	904	888 963
SPECIFIED CAUSES	903	880 954
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	142	163 184
Sporadic Diseases, viz.—		
2. Dropsy, Cancer, &c. of uncer- tain seat	102	99 106
3. Brain, Spinal Marrow, Nerves, and Senses	149	155 159
4. Lungs, and other Organs of Respiration	297	267 292
5. Heart and Blood-vessels	38	24 24
6. Stomach, Liver, and other Organs of Digestion	81	63 71
7. Diseases of the Kidneys, &c. ...	13	6 6
8. Childbirth, Diseases of the Uterus, &c.	7	9 10
9. Rheumatism, Diseases of the Bones, Joints, &c.	3	6 6
10. Skin, Cellular Tissue, &c.	1	1 1
11. Old Age	56	61 70
12. Violence, Privation, Cold, and Intemperance	14	25 26

REMARKS.—The total number of deaths is less than the average of the years, but greater than

that of the seasons. The great increase, both in respect to the years and the seasons, is in diseases of the lungs and organs of respiration. There is a considerable decrease in zymotic (epidemic or contagious) diseases, both with respect to the average of the years and seasons, and, as usual, about six-sevenths of the deaths from these diseases have occurred in children under fifteen years of age. The great increase in the weekly mortality has taken place chiefly in the northern and western districts of the metropolis. Among the deaths by violence are three from drowning, two of hanging (suicide), one of suffocation by food, and two from burns.

ROYAL OBSERVATORY, GREENWICH.

METEOROLOGICAL SUMMARY

For the week ending Saturday, April 26.

	Max.	Min.	Mean.
Height of Barometer ^a	29.94	29.37	29.67
„ „ Thermometer ..	65.9	37.2	51.2 ^a
Self-registering do.	94.6 ^b	23.5	
„ in the Thames water ..	55 ^c	47 ^c	

^a From 12 observations daily. ^b Sun.

Rain, in inches, 0.18: sum of the daily observations taken at 9 o'clock.

Meteorological.—The Barometer underwent but slight fluctuation. The mean temperature of the week was that of the climate of London for the year. The extreme range in the Thermometer was 67°. The quantity of rain which fell was less than the fifth of an inch, and the whole fell in two days.

NOTICES to CORRESPONDENTS.

Mr. J. Coventry's paper on Agriculture, &c. is left with the printers. We regret that we cannot give it insertion.

Mr. David Haidinger writes to inform us that the work now selling as the Third Edition of Lawrence on Diseases of the Eye, is nothing more than the 2d Edition with a new title-page.

We quite agree with Machaon. We do not insert his letter, because the subject is now closed, but we think that he will not have any reason to complain in future.

Mr. F. Calder's paper is unavoidably postponed until next week. We shall be glad to receive the others of the series, so as to make arrangements for their regular appearance.

Mr. Farr.—Dr. R. D. Thomson's paper, on the Digestion of Vegetable Albumen and Fat, shall be inserted.

Dr. Lhotsky.—We shall bear the request in mind.

F.R.C.S.—Although the 32d clause is clumsily worded, we apprehend that every member of the College, who registers himself as a "Surgeon," will pay the same fee as a Fellow.

Mr. C. H. B. Lane.—We shall be happy to receive the communication referred to.

We will make every arrangement to meet Dr. Dick's wishes.

Received.—Dr. R. Lee.—Mr. John Wickens.—Mr. C. Colton.—Mr. H. Lee.—Mr. H. Johnston.—Mr. A. T. Dodd.—Mr. G. M. Gane.—Dr. Barlow.—Dr. J. W. Griffith.—Mr. B. Phillips.—Dr. Ritchie.

We must apologise to many correspondents for the delay which has taken place in the insertion of their papers. All original communications are inserted in the order in which they are received.

ERRATA in part of last week's impression.—Page 21, col. 2, line 59, for rallying, read rolling.—P. 31, c. 1, l. 25, f. preparations, r. proportions.

Lectures.

CONTRIBUTIONS TO MICROSCOPICAL MORBID ANATOMY,

*Selected and Translated from the German
Work of*

DR. JULIUS VOGEL, of Göttingen,
Entitled "Erläuterungstafeln zur pathologischen
Histologie."

By W. S. KIRKES, M.R.C.S.L. &c.

Microscopic Examination of the Tissue of Nutmeg Livers.

CASE I.—A middle-aged woman, with a very narrow chest, goose-breasted, and with a right lateral curvature of the dorsal vertebrae, died in the Munich Hospital without our being able to determine exactly what was the disease which caused her death. On a post-mortem examination, the left lung was found infiltrated throughout with miliary tubercles. The right lung was universally adherent to the costal pleura; the pleura itself was much thickened, being about a line and a half in diameter. In the lung were found numerous vomices, about the size of walnuts; the pulmonary tissue intermediate between which, was atrophied and slate-coloured. The divisions between the upper, middle, and lower lobes of this lung were wanting, the whole lung forming one complete mass. The right cavities of the heart and the pulmonary arteries were dilated. The liver presented very distinctly those changes which are commonly designated as the nutmeg-like degeneration; thus it had the following appearance: the individual lobules were of a yellow colour, and very distinctly separated from each other by narrow reddish-brown intermediate spaces, so that the cut surface of the liver, when viewed with the naked eye, gave the appearance of a yellow basis-substance, traversed by an irregular net-work of reddish-brown vessels (fig. 9*). On examining, when mo-

Fig. 9.



derately magnified, fine sections of the substance of the liver, made with a double knife, the individual lobules (fig. 10, A A) were seen very distinctly circumscribed, and separated from each other by an intermediate

substance (B B), of a colour different to that of the lobules themselves. The substance of the lobules appeared bloodless, and of a yellowish-white colour, whereas the tissue intermediate between them had a reddish colour, and seemed quite filled with blood. These fine sections of the hepatic substance, when washed with water, became freed from blood, and on examining them in this condition with a higher magnifying power, it was observed that the substance of the individual lobules was abundantly infiltrated with fat (fig. 11, A A). In the middle of each lobule, however, there was a small portion which contained a less abundant quantity of fatty matter; this portion had a paler colour, was more homogeneous and transparent than the other parts of the substance of the lobule, and presented within it some yellowish-brown spots (B B).

In order to determine accurately what share the hepatic cells (which are the essential elements of the substance of the liver) had taken in this degeneration, some small pieces were scraped from fresh sections of the liver, and examined under high magnifying powers. It was now observed, that each of the cells was more or less transformed (fig. 12); they were almost all filled with fluid fat (a a); some contained a dark brownish granular substance (c c), and these latter were in all probability the cause of the yellowish-brown spots at B B, fig. 11. Almost all the fat was contained within the hepatic cells; there were very few free drops of fat observed (b b). The results of this examination, when taken together, led to the following conclusions:—

1. That the nutmeg-like appearance of this liver was caused by the contrast which the fatty, bloodless, yellowish substance of the lobules formed with the deep-red interlobular tissue, which was loaded with blood.
2. That on the whole, the liver was very rich in blood; but that this richness was confined to the interlobular substance (and consequently to the larger venous vessels), the lobules themselves containing but little blood.
3. That the substance of the liver presented an unusual abundance of liquid fat, and consequently approached very nearly to what is called a fatty liver; but this fat did not form (as is usual in the case of fatty livers) free drops of oil, but was rather infiltrated into the hepatic cells.
4. That besides those cells filled with fat, there were also a few others, which contained within them some deposits of small brownish granules (bile-colouring matter?) These deposits were found especially in the cells situated towards the middle of the individual lobules.

Fig. 10 illustrates the appearance presented by a fine section of the hepatic substance, when magnified 17 diams. A A, He-

* The light parts represent the yellow lobules; the dark ones the reddish-brown vascular inter-spaces.

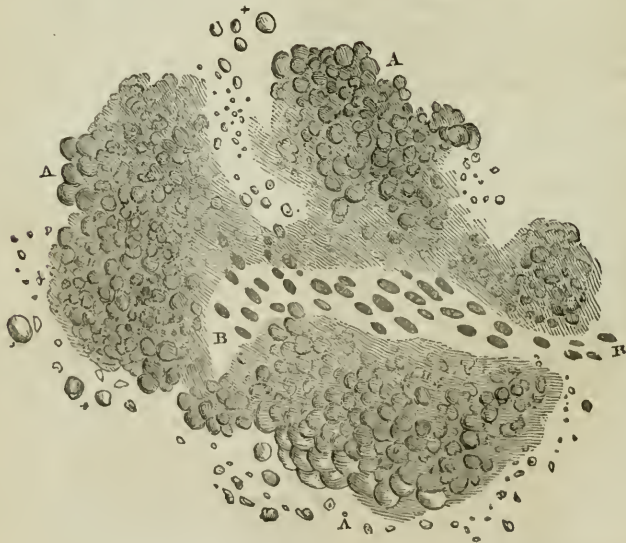
Fig. 10.



Fig. 12.



Fig. 11.



patic lobules, divided in different directions. *nn*, The very wide interlobular tissue, which was loaded with blood.

Fig. 11 (magnified 90 diameters) illustrates the appearance presented by a fine section of an individual lobule of this liver, after being washed with water. Towards the middle (*nn*), was an homogeneous transparent substance, containing numerous yellowish-brown spots. Towards the surface (*AA*) the substance of the lobule was universally infiltrated with fat, but there were only a few free oil-drops apparent (+ + +).

Fig. 12 illustrates the appearance presented by the individual hepatic cells, when magnified 220 diameters. Almost all these cells were completely filled with fat (*aa*), by which the nuclei were for the most part concealed; some were filled with a brownish granular mass (*cc*). A few drops of fat were scattered between these various cells (*bb*).

CASE II.—In a soldier who died from dilatation of the heart and aorta, the liver was found to have the nutmeg appearance, though it was of a somewhat different kind

to the one last described. The liver in this case exactly resembled the preceding one in the appearance which a fresh section of it presented to the naked eye, as also when such section was examined with a power magnifying 17 diameters. There were observed on it the bloodless hepatic lobules, widely separated from each other by the surrounding interlobular substance, which was loaded with blood. A further examination, however, of the substance of this liver shewed that there was an important difference between it and the preceding one. The substance of this liver, for example, presented not a trace of fat; considered as a whole, four-sevenths of it were made up of an uniform colourless mass, whilst the remaining three-sevenths were composed of brownish-yellow granular spots, exactly like those observed in the other liver (fig. 13). The individual hepatic cells, when viewed under high magnifying powers, shewed not a trace of fat; instead of it, they were more or less filled with brownish granules. Between these cells were some scattered spots of an intensely yellow colour—deposits of bile-colouring-matter. Scarcely any drops of fat were seen. There was hardly any fibro-cellular tissue discoverable in the fine

sections of this liver, and it was only in the interlobular portions that any traces of it could be found; and even here it was intimately woven together into bundles of an uniform width, which in all probability constituted the blood-vessels and bile-ducts. Even on treatment with ammonia, whereby the entire substance of the liver was rendered paler and more transparent, no further signs of cellular tissue became visible. Thus the view which attributes the formation of a nutmeg-like appearance of the liver to an hypertrophy of the cellular tissue, is as erroneous as the theory advanced by Hope (*Principles and Illustrations of Morbid Anatomy*, p. 102), that it is dependent on an hypertrophy of the white substance of the liver.*

Both of the above cases prove that this appearance results simply from the contrast presented by the very pale substance of the hepatic lobules, to the intensely reddened interlobular tissue, which is loaded with blood. These two cases, however, differ from each other in this particular, that in the first there existed a considerable infiltration of fat into the parenchyma of the liver, which in the second was entirely absent.

Fig. 13.



Fig. 13 illustrates the appearance presented by a thin section of the substance of this liver when magnified 90 diameters; it offered a tolerably homogeneous mass, consisting of hepatic cells densely aggregated, with some yellowish-brown, rather closely set, spots, which latter were especially abundant towards the middle of each lobule. When magnified 220 diameters, most of the individual hepatic cells appeared to be either filled with, or covered by, a brownish gra-

nular mass; whilst between them were scattered some intensely yellow spots—deposits of bile-colouring-matter.

Cases of fatty degeneration of the liver, with microscopic examination of the tissue of the organ.

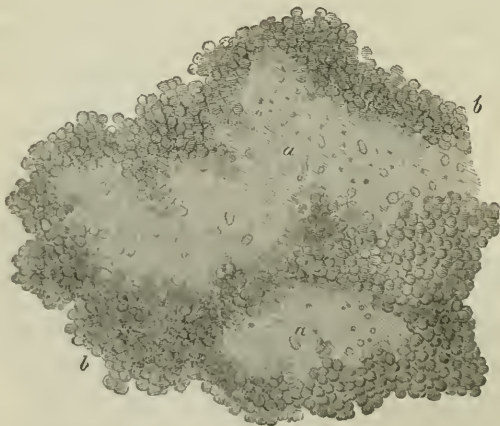
CASE I.—A young woman became attacked with "phlegmasia alba" shortly after par-

* [This was the view entertained also by Andral. *Précis d'Anat. Patholog.* tome ii. p. 585.—Tr.]

turition. There was swelling of the right thigh, with fluctuation, which proceeded to the formation of an abscess, extending from the knee upwards as far as the right inguinal region. She died. On examining the body, a quantity of yellowish pus was found in the abscess in the thigh; the walls of the abscess were of a blackish colour. These walls presented some granulations which, microscopically examined, were found to consist of a dense network of vessels. All the parts in the immediate neighbourhood of the abscess, including the muscular as well as the cellular tissue, appeared, under the microscope, covered with an immense number of small granules. The cellular tissue immediately surrounding the abscess was thickened and brawny, but this was merely the result of infiltration, not a trace of fibrinous exudation being discoverable on a microscopic examination. Both lungs were healthy, with the exception of some slight serous infiltration. The intestinal canal presented

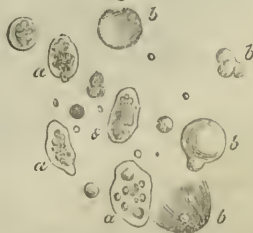
nothing abnormal. The uterus had already resumed its natural size and shape, yet its vessels were somewhat distended and filled with blood. The liver exhibited an advanced stage of fatty degeneration. Fresh sections of it gave the appearance of a bright yellowish, or reddish-white basis substance, scattered within which were numerous dark reddish-brown spots: this appearance was consequently the exact counterpart of that presented by the nutmeg livers described above, in which the dark portions were observed to surround the light ones in a kind of reticular manner. The liver contained only a very small quantity of blood. When fine sections of its substance were made with a double knife, and examined under the microscope, it was observed that all the lobules were surrounded, and consequently isolated from each other, by a very abundant deposit of fluid drops of fat (fig. 14). All those portions of the substance of the liver, which appeared of a light colour

Fig. 14.



to the naked eye, corresponded to the fat, whilst the dark portions corresponded to the hepatic cells. On examining with higher magnifying powers some pieces scraped from a fresh section of the liver, there were no perfectly normal hepatic cells to be found; all the cells were more or less filled with fat, in the form of drops and granules, whereby their nuclei were quite concealed (fig. 15, *a. a.*) Moreover there were observed very many free drops and granules of fat, several of which contained distinct crystalline heaps of margarine (*b. b.*) The fatty degeneration of the liver in this case consisted thus: 1st, in a very abundant deposit of fluid fat (elain with margarine), in the form of drops, in the substance of the liver between the lobules; 2d, in the hepatic cells themselves being more or less filled with drops of fat.

Fig. 15.



CASE II.—The liver in this case was from an individual who died of pneumonia; it differed in some particulars from the one just described. A fresh section of its substance presented an intensely yellow colour; it felt soft, and contained very little blood. On making fine sections of it with a double knife, the middle of each lobule was ob-

served to be of an intense yellow colour; we were quite convinced that this yellow colour did not depend on any substance deposited in the form of granules, but that it was the result of an uniform infiltration of fluid in the tissue of the liver; the fluid which could be squeezed out of the liver had also a yellow colour. The interspaces between the individual lobules were filled with drops of fat; the width of these interspaces was very trifling, and so, consequently, was the amount of free drops of fat deposited. On examining with high magnifying powers some portions scraped from a fresh section of the liver, almost all the hepatic cells were observed to be abundantly infiltrated with drops of fat; scattered between these cells were observed, also, a few free drops of oil.

Fatty liver: lobular pneumonia of both lungs—microscopic examination of the tissues of the lungs, and of the liver.

A little girl, 18 months old, born of scrofulous parents, herself of a strumous habit, had suffered for a considerable time from a convulsive cough, and at length died after a very severe paroxysm of coughing. On examining the body, it was observed that the child was greatly emaciated, very small and imperfectly developed for its age. The skull-cap was thick, and firmly adherent on its internal surface to the dura mater. The brain was healthy, though somewhat vascular at the base; the grey substance was well defined; there was very little serum in the ventricles. The heart was healthy; no serum in the cavity of either pleura. The thymus gland was about the size of a common bean. The larynx and trachea were healthy, presenting no trace of inflammation. Both lungs contained plenty of air, though in some places they appeared hepatized. When more carefully examined, it was observed that the summit of the upper lobe of the right lung was of a light rose tint, crepitated when cut into, and floated in water. Its substance, when examined under the microscope, exhibited a tolerable quantity of air, but very little blood; some vessels, however, were quite filled with blood. After being well washed, the fasciculi of fibres composing the pulmonary tissue were distinctly seen, the individual fibres themselves, however, not being very clearly distinguishable. The meshes, or interspaces formed by the fasciculi, were empty, with the exception of here and there containing some portions of epithelium, and a few granule-cells. Consequently there was hardly any appearance of inflammation in this portion of the right lung. The lower portion of this upper lobe appeared more of a bluish-red colour externally, and in its interior also it was of a darker colour than the summit of the lung; it scarcely crepitated, felt

firm and compact, and sank to the bottom in water. Under the microscope there was little or no air visible. There was a tolerable quantity of coagulated blood in the vessels, but the fluid, which had exuded into the surrounding tissue, contained more granule-cells than blood. On washing away the blood with water, the fibrous fasciculi were rendered visible, though not very distinctly so. Between them were observed a considerable number of granule-cells, and a very large quantity of separate granules. Besides these there were also a number of pale nucleated cells, with granules scattered over them. On treatment with acetic acid, the fibrous fasciculi were rendered somewhat more distinct.

The middle lobe of the right lung appeared quite healthy; it was of a reddish-white colour, crepitated freely, and floated in water. Under the microscope there was seen a large quantity of air, an average healthy proportion of blood, but not any granule cells. When washed with water the fibrous fasciculi were rendered distinct. The anterior half of the lower lobe was of a pale red colour, crepitated, and floated in water. Under the microscope a tolerably large quantity of air and blood was seen; on washing away the blood, there was observed, besides numerous epithelial cells, a rather large quantity of granule cells. The fibrous fasciculi were not very distinct; they were rendered more so on treatment with acetic acid; in the meshes or interspaces which they formed, there were seen a few cell-nuclei, and here and there a semi-transparent amorphous mass (fibrinous exudation?) The posterior half of the lower lobe was much darker, of a bluish-red or livid colour, did not crepitate or float in water. Under the microscope there was not a trace of air visible, but a large quantity of blood and very many granule cells were seen. The fibrous fasciculi were only apparent towards the margins of those portions viewed under the microscope; their interspaces were seen to be filled with granule cells. The apex of the upper lobe of the left lung was of a light red colour, crepitated, and floated in water. Under the microscope there was plenty of air visible, a normal quantity of blood, together with very many nucleated cells, but only a few granule cells. When the blood was washed away the fibrous fasciculi were distinctly seen; their interspaces were free. The lower lobe of this lung was of a bluish-red colour, yet it crepitated and floated in water. Under the microscope there was seen a tolerable quantity of air, a great deal of dark-red blood, and a few granule cells. On washing away the blood, the fibres of the pulmonary tissue were seen, mostly free, and their interspaces distinct.

The stomach was healthy; its mucous

membrane very pale. The spleen healthy. The liver was large, firm and compact, granular, and very deficient in blood. When examined under the microscope, with high magnifying powers (220 diams.) the individual hepatic cells were seen to be quite normal and colourless, yet many of them were either filled with, or covered by, drops of fat. (Fig. 16, a, a.) Scattered between the va-

Fig. 16.



rious cells was a large quantity of free drops of fat. Here and there were observed many nucleated cells, which were elongated into fibres, and bore considerable resemblance to spleen corpuscles, some single, others arranged together in a linear series. (Fig. 16, b, b.)* We could not learn much from the microscopic examination of fine sections of the substance of the liver, on account of the large number of drops of fat which were scattered over the field of the microscope; still we were satisfied that the fatty deposit was especially abundant in the tissue intermediate between the individual lobules. In the lobules themselves, as well as in the interlobular tissue, there was very little blood to be seen.

Jaundice, from an obstructed flow of bile, produced by a biliary calculus. Microscopic examination of the tissue of the liver.

The following case is interesting as containing the results of a microscopic examination of the substance of a liver which was altered in consistence and discoloured, in consequence of the accumulation of bile, from obstruction to its flow through the hepatic duct. The appearances presented by this liver were considered by Vogel to indicate the existence of gangrene, but the rare occurrence of gangrene of the liver, together with the almost complete absence of foetid odour in this case, would lead to the inference that the peculiar changes observed were simply the result of accumulation of bile, together with extravasation of blood, the two together producing most of the varieties of colour, and other peculiarities noticed.

* Vogel considers these elongated cells to indicate the commencing formation of fibrous tissue.

N., a watchmaker, naturally very corpulent, had been subject for about a year to frequent pain in the region of the liver, and during this period had gradually lost flesh. The pain became especially severe about four weeks before his death, and was accompanied with fever, dyspnoea, and jaundice, which continued to the time of his death; the abdomen remained painful and swollen to the last. The body was examined forty-two hours after death; the whole surface presented a yellowish green colour. The cavity of the pericardium was empty; the substance of the heart was soft; its lining membrane was of a yellowish colour, so also were the valves. The aorta and other large vessels were likewise stained of the same yellow colour. The cavities of both pleuræ were obliterated by universal adhesions. The bronchial mucous membrane was of an intense yellow colour. The upper lobes of both lungs were infiltrated with serum, they were also of a bright yellow colour; the lower lobes were filled with blood and serum, they contained no air, and were very friable. The spleen was large and soft, so also were both kidneys. The intestinal mucous membrane was quite healthy: some white faeculent masses were found in the colon. There was a hydrocele of the tunica vaginalis testis on both sides. The gall-bladder was quite collapsed and empty; in its neck was situated a brownish biliary calculus, about the size of a common bean, by which the canal of the hepatic duct was compressed and rendered impervious. The canal of the ductus choledochus was at least three times its natural width, the result in all probability of repeated dilatations from the frequent passage of biliary calculi along it. All the bile ducts in the substance of the liver, which could be found, were greatly dilated, and turgid with bile. The liver was larger than natural, and on its surface, as well as in its interior, was of a very peculiar colour, being of a dark brownish-green tint, with shades of a dark orange colour. In some places the dark orange colour especially prevailed, in others there were observed some whitish spots, which on a microscopic examination were found to consist of crystalline deposits of margarine or margarate salts. The tissue of the liver was remarkably altered; it had not the usual consistence of a healthy liver, neither was it granular, but had a vesicular appearance, being distended into numerous small vesicles or blisters; it crepitated when cut, and offered resistance to the knife, so that no good sections could be obtained for the purpose of microscopic examination. The odour was somewhat empyreumatic, though not so powerful as is usually the case in gangrene; the fluid with which the substance of the liver was soaked, had a slight acid reaction.

A microscopic examination of the substance of this liver gave the following results: with powers magnifying 90 diameters, not any distinct circumscribed hepatic lobules could be seen throughout; the whole tissue appeared of a bright yellow colour, with here and there some bluish portions; and the parenchyma generally was filled with various sized coagula of blood, which presented all shades of colour from light reddish brown to deep brown or even black. On examining portions of the liver with higher magnifying powers (220 diams.) the following results were obtained:—Not a trace of hepatic cells could be found; they are usually the chief component elements of a healthy liver, but in this case they all seemed to have been dissolved and broken up. Instead of these cells there appeared, 1. a considerable deposit of bile colouring matter, the shades of which varied from a light sap-colour to a bright orange tint. In some parts, the tissue of the liver was uniformly coloured, but in other parts the colouring matter seemed to be deposited in irregular granular masses of varying form and size. 2. Irregular grumous masses of blood, varying in colour from a reddish brown to a deep black. 3. Numerous heaps of needle-like crystals having a brownish colour. They corresponded exactly to ordinary crystalline masses of margaric and margaric acid. 4. Reddish-brown drops or globules, which were highly refractive of light, and thus appeared clear and colourless in the centre (probably coloured fat). Here and there this substance also appeared in the form of irregular granules. By ammonia, as also by acetic acid, neither the crystalline masses nor the bile-colouring matter underwent any change; by nitric acid the usual change of colour was produced in the latter.

Vogel concluded from the results of the above examination, 1. That there was decided gangrene, characterised by the extravasated blood, which was coagulated, and had undergone the usual decomposition and change in colour peculiar to gangrene, and that the crystalline concretions of fat, the destruction of the hepatic cells, and the formation of emphysema, were, in all probability, due to the gangrene. 2. That the very extensive deposit of bile-colouring matter (or rather of bile itself) which was observed in the tissue of the liver, was evidently the result of the mechanical occlusion of the hepatic duct, and that without doubt this retention of bile was the primary cause of the gangrene.

* ERRATUM.—In the number for May 2d, page 6, col. 2, line 24, after “*of turbidity*,” read “*of the different fibres*.”

LUMLEIAN LECTURES,

Delivered at the Royal College of Physicians.

By SIR GEORGE LEFEVRE, M.D. &c.

LECT. II.—*Morbid Poisons.—Scarlatina.*

Œdema of the glottis.—The infiltrations into the cellular membranes may give rise to mechanical causes of death. Cases are by no means rare, if we may judge from the descriptions which some authors give of oedema of the glottis. This condition is recognisable, in its early stages, by that croupy sound which is attendant upon this disease, and which often warrants the belief of the existence of a false membrane. This peculiar sound, which presupposes a collection of mucus in the trachea and bronchial cells, is not quieted by the emetics which are given to dislodge these secretions; neither is it diminished by local abstraction of blood, by the application of rubefacients, or the use of calomel. It is a mechanical impediment, and the degree of danger will be in direct ratio with the amount of the obstruction which is formed to the free transmission of air through the tube.

The principal seat is the chordæ vocales, and the epiglottis, and the tumefaction is produced by the accumulation of serum, or exudation of lymph from beneath the mucous membrane.

It is singular that Bretonneau should make the following statement:—“During an extensive practice of twenty years, in which I have had frequent opportunities of seeing scarlatina prevail epidemically, and which has cut off a very large proportion of those attacked, I have never met with a single case of death caused by the propagation of the inflammation to the pharynx, or the closure of the glottis.” Where oedema of the glottis is ascertained to exist in a simple form, without great devastation accompanying it, and where suffocation is threatened from impeded respiration, an operation is justifiable. I need only refer to the successful cases published by Dr. Wilson in the *Medico-Chirurgical Transactions*, to authorize this assertion (vol. xxvii. p. 134.) “This affection is not peculiar to scarlatina, but is attendant upon the paludal poisons. In the dissections of those who died of the Walcheren fever, it was found that in many cases the cellular tissue became swollen around the glottis, forming a large tumor as big as a turkey’s egg, completely closing up the rima glottidis, so that the patient died suffocated.”

It must ever be borne in mind that there is no disease in the whole catalogue of pa-

thology where it is more incumbent upon us to be prepared for every untoward symptom, than the one of which we are now treating. It is not only necessary to bring all our knowledge to bear upon it, as it presents itself, but to anticipate every possible occurrence which may demand extraordinary effort upon our parts. The rapidity with which these untoward symptoms present themselves, and proceed to a fatal issue, is so great that there is often no time for delay; and there is no disease which requires such constant attendance of the practitioner, from the necessity of changing the method of treatment, as the one in question. It is possible that the timely stopping of a leech-bite may be a cause of salvation to the patient.

From all the sources to which I have applied, I have not been able to ascertain that such mechanical pressure as would be sufficient to cause death by suffocation has ever arisen from the influence of scarlatina poison on the parotid and submaxillary glands.

It is well to bear in mind that we have artificial means of relief at hand. I have known suffocation produced by enormous swelling of the parotid from an overdose of mercury; and it is well known that a celebrated French marshal died from this cause, the glands having been attacked by a specific virus.

Although the mechanical impediment may never be so great as to cause death by suffocation, still, the prevention of the return of blood from the head is a cause of the comatose state which often attends this enlargement of the glands.

Effusion into the chest.—Dr. Gregory furnishes us with an instance of hydrothorax succeeding to scarlatina, in a gentleman who was considered convalescent from the disease, but whose recovery was neither rapid or satisfactory. The symptoms were not urgent, and attracted no particular notice. He walked out one morning to his club-house. On returning, he fell, and was carried home a corpse. His chest was found full of water.

Of the recurrence of the disease.—Some doubts still seem to exist upon a point of considerable importance, and one especially which interests ourselves, viz. whether a person once having passed through the disease be again liable to infection? Dr. Currie was himself a proof of change of opinion on this point; for he states, that he once believed that persons were liable to the infection a second or third time, but that farther experience convinced him to the contrary. He states his opinion in the following words:—It is true, persons attending on patients under scarlatina are sometimes affected with sore-throat who have themselves formerly gone through the disease. But this is not

attended with the scarlet efflorescence, or the general affection of the system by which the disease is ushered in. The affection of the throat is primary and topical, though I have known it so painful as to bring the system at large into sympathy. It seems to be produced by inhaling the breath of the patient, and is probably analogous to those partial eruptions of small-pox which sometimes appear in mothers or nurses who have had that disease from the contact of infants who are under it." Now the question regarding the possibility of being a second time affected with scarlatina is one of very great importance, and involves in a great measure the credit of the profession. There is very naturally a fearful anxiety in the public mind respecting this malady, and it is not justifiable, upon mere theoretical argument, to preach immunity from second attacks, where life may be compromised by reckless exposure. In the general definitions of scarlatina, it is stated that its whole duration varies from eight to thirty days, or more; and, being once terminated, the susceptibility of the constitution is exhausted to all future attacks of the poison. Now, I think a mass of practical evidence will not allow us to come dispassionately to this conclusion. It is often difficult to come to the truth in the investigation of disputed points, but when practitioners of high talent and ample experience assert that they have seen this disease fully formed in the same individual at different and very remote periods of life, is it warrantable, as we are responsible to our profession, and to the public, to reject such evidence upon any preconceived theory? That all such cases may be exceptions to the general law, does not render them less fearful.

To begin with Heberden, whose assertion has not been shaken, but strengthened, by experience:—"Novi quos hic morbus bis tentaverit quod tamen per paucis accidit."

Dr. Billing observes:—"I cannot too seriously caution the young practitioner against implicit reliance on the nosologists, as the exceptions to their rules are endless. For instance, scarlatina is put down amongst the exanthemata, as occurring once only in life. I have known it occur three times in the same individual, frequently twice; in one instance, in its exquisitely marked form, as to inflamed tonsils, appearance of tongue, eruption and desquamation of skin, twice within ten months."

Dr. Marshall Hall, the latest writer that I can quote upon the subject, observes:—"I had a year or two ago the melancholy task of watching a case in which when the disease had run its course, the rash, sore-throat, and fever, recurred with enlarged parotids, and led to a fatal issue. It is well known that scarlatina may recur in the same

individual at distant periods from the first attack."

In the year 1825, when I was resident in Paris, I met with a similar occurrence. After three weeks' duration of the disease, and the patient was approaching convalescence, efflorescence returned, and with this the right parotid inflamed and suppurated.

It was here that I had opportunity of witnessing the three species of the disease in the same family, as I mentioned in my former lecture. In the first instance, a young lady was so slightly attacked, that I did not see her whilst any eruption was visible. It was only when a younger brother fell ill that I was fully aware of what had been the sister's disease. He died on the third day of the purple form. The third case was the one above alluded to, similar to that mentioned by Dr. Hall. The fourth appeared in shape of the inflammatory scarlatina anginosa, of which the patient died on the fifth day; another child, of three years old, was the last attacked, and had the disease in its mildest form: a baby in arms, exposed to it all the time, escaped altogether.

These cases occurred in my own family connexion, and were attended by one of the fellows of this college, Dr. J. Wilson, Mr. Gunning, and myself. I may be allowed to say, that I have twice caught the disease from attending patients.

I have dwelt somewhat upon this matter, because I find it still contested, and I consider it one of very great importance that something like unity of opinion should exist upon such subjects. In the little sympathy which the public feels in general towards the profession, it is politic that they should not reproach it with discordancy of opinion on such important points.

As regards any evidence with respect to the probabilities of its recurrence from constitutional susceptibility, we are not in possession of sufficient facts to allow us to form any rational conclusions. We find it occurring within periods of ten months and twenty years; nor is it possible to say, *a priori*, however well acquainted we may be with individuals, that they are not again susceptible of infection, either as regards this or any other contagious malady. It will be always erring upon the right side to caution against reckless exposure.

Epidemic.—Those diseases which, arising from one and the same cause, are diffused over the multitude, are said to be epidemic; and this, in reality, implies nothing more than diffusion. With this term epidemic, however, is associated a degree of severity in the diseases themselves not occurring in isolated cases, and epidemics are all said to be severe at their commencement. We are all acquainted with Sydenham's views upon

epidemic constitutions of the atmosphere. It is a matter of general observation, that diseases assume different forms, and are mild or severe at different seasons, and we attribute this to atmospheric influence. If we recognise but one cause of a malady, the inoculation of a specific poison, why should epidemics be more severe than isolated cases? for, as far as the poison is concerned, a multitude is but as one man, and one man as a host.

Now, whatever shape the disease may assume, some will succumb in spite of all the assistance of art; others require but little interference, and some defy its influence altogether. However efficient the atmosphere may be in allowing of the diffusion of the malady, its influential power is but conjectural as regards the quintessence of the disease. It is but too common to enlist it into our service, to refer many things, which we cannot otherwise explain, to abnormal states of the air; as our forefathers reduced all that was extraordinary in physical phenomena to its greater rarity or density.

It is probable that we look too high for the explanation of what lies under our feet. The causes of evil are often furnished from malarious poisons, from choked sewers, bad drainage, stagnant water; so that what we attribute to atmospheric is perhaps due to telluric influence.

We lose sight of the poison itself in these speculations. Why are we to suppose that it is always the same in quantity, knowing as we do, with respect to small-pox, that by artificial dilution the virus is modified in its effects?

Two causes are assigned for the apparent malignancy of epidemics at their commencement. The first is attributable to the intensity of the poison, which, as it becomes more diffused, gets diluted, and is finally exhausted. We cannot otherwise account for the cessation of these epidemics, for no change of atmosphere that we can test will help us out of the dilemma.

The great severity of the disease is but conjectural in many cases; a great many are attacked, of whom a great many perish, but not more relatively to the mass than in other circumstances. There are no severer forms of scarlatina, nor any more murderous, than those which occur sporadically, when what takes place above our heads is not taken into the account.

We may understand the influence of Siberian frost upon contagious matter, and that the plague may have been so arrested, but, again, paludal poisons are not influenced by tropical heat, or mercury congealing cold. When the cholera invaded Oranburg, the cold was equal to freezing quicksilver, but that did not arrest its progress; when it reached Petersburg in the canicule, the same

ravages marked its course. It was one of the hottest summers ever remembered in that latitude; the woods in the neighbourhood were all on fire, and filled the town with clouds of smoke. The disease only ceased when it no longer found that state of things which would allow of its combination with animal matter, or till its virus was so diluted that it no longer acted as the same poison.

Spontaneous gangrene sometimes occurs epidemically in France, and has been attributed to a mixture of ergot of rye with the bread. Trousseau and Pidoux, in their late *Traité de Thérapeutique*, tried to disprove this assertion, and insisted upon it, that ergot, producing the same symptoms when administered medicinally, was identical with itself as a poison, and that the symptoms, which resemble spontaneous gangrene, bore only as much analogy to them as the rash from belladonna does to scarlet fever. That the disease broke out when the presence of ergot could not be satisfactorily traced, and that *a contra* many farmers had their gangrened flower mixed up with the rest without experiencing any inconvenience.

The Academy of Sciences has lately received two communications, which place the fact beyond a doubt. A family of seven persons partook of bread containing a known proportion of ergot; four members of the family experienced scarcely any inconvenience; slight intoxication, giddiness, weakness, &c. One of the four suffered from great prostration of strength and blotches on the skin. The two others presented all the features of the spontaneous gangrene; their lower extremities sloughing away without inflammation or fever to the knee sockets.

Here, then, we have a known and tangible poison, which, when introduced into the system, for the most part produces certain and specific effects available by those who practise midwifery. Among the persons to whom this may be administered, some may present a something, which, for want of a better term, we call idiosyncrasy, and with these, the same poison which produced such trifling effects in others generates in them the most alarming symptoms, and almost leads us to doubt the identity of the cause. A sporadic disease is thus created, and these fatal effects occur to one in a hundred; but some change takes place, and, what to-day poisons one per cent., in a week shall reign epidemically.

Thus, in many parts of France, this ergot is not separated from the rest in bread-making, and no disease occurs, whilst in other parts, from the same cause, spontaneous gangrene bursts out and decimates the population.

This is just the history of scarlatina and of most of the exanthemata. A patient is said to have caught the disease—where or

how is perfectly inexplicable. It exists sporadically, and then, all of a sudden, that peculiar constitution, which was the idiosyncrasy of the few, becomes the share of the many, and epidemic is established. Stating thus much, we have advanced nothing in explanation, except that we repudiate atmospheric influence, or any results from the commotions in the earth's bowels. The climax of such absurd speculations is to be found in Hecker's *History of the Black Death*, so admirably translated by Dr. Babington, p. 51.

Endemic influence.—That many diseases are confined to particular districts is a truth as ancient as the history of our art, and that such take their title from their locality is equally well established.

The poet Juvenal, who seems to have had a very fair smattering of medical information, has observed—

Quis tumidum guttur miratur in Alpibus ?

which we translate by the Derbyshire neck.

In my route through Poland I found the *plica polonica* confined to the borders of the Vistula; hence it takes the name of *Weichselzof*. We know that many malignant fevers are only met with at the mouths of rivers and estuaries, and that the dwellers on the highlands are free from these diseases. Hence has arisen much of the bitter dispute, the discordancy, and discrepancy of opinion, concerning the contagiousness of these disorders; so that we may safely apply to these disputants, what was said to the Montagues and Cupulets—"A plague on both your houses."

With respect to scarlatina, I have known it prevail so continually in certain districts as to deserve the title of endemic; and of one thing I am now convinced, that its nature is frequently changed by local circumstances. Whether this may arise from mere mechanical mixture or chemical combination may be matter of conjecture.

ANCIENT MODE OF TREATING MONOMANIACS.

ABOUT this time (1555, in the reign of Queen Mary) one William Featherstone, a miller's son, of the age of 18 years, named and bruted himself to be King Edward the Sixth; for which being apprehended and examined, he answered as one lunatic; and thereupon was whipped at a cart's tail, and banished into the north. But the year after, spreading abroad again that King Edward was alive, and that he had talked with him, he was arraigned and condemned of treason, and at Tyburn hanged and quartered.—*Baker's Chronicles.*

Original Communications.

POINTS IN THE
PHYSIOLOGY AND DISEASES OF
THE EYE.

BY JAMES JAGO, M.B. Oxon.

[Continued from p. 66.]

Musæ volitantes.—There exists in every human eye certain globules, very minute, with transparent centres and black margins. These may be always seen, in the healthy eye, by using a card with a small puncture.

Sometimes these occupy in myriads all the field of view, and provided the hole looked through be sufficiently small, and the light looked at bright, always do so.

We may also sometimes see chains of them, or of a kind nearly allied to them, "convoluted figures in which rows of globules appear to be contained."

In some persons these are always present in an exaggerated form, even when the eye is fully open and no pin-hole is used. These are usually called *musæ volitantes*.

These must all be in the vitreous humour, for the following reasons. Firstly, they are manifestly in a fluid, for they float or move about in the interior of the eye. When we raise the eye to look at any object, they evidently continue to move in the same direction even after the eye is stopped, and then, after balancing a moment, commence to descend again to their usual places. If the eye be kept fixed for a while, if they have not passed out of the field of vision, we observe them to become motionless also. Secondly, when the card is moved across the axis of the eye in any direction, they move in the same, but only through small spaces; that is, if we compare the spaces travelled by these, or rather by the shadows of these, to those travelled by that of a tear, or, which is the same thing, to the apparent motion of the margin of the hole. The tear passes them, on a movement of the card, with great rapidity. If we employ a card with two holes, and get a *musca* within range of both, we shall find that even for one which throws its shadows at the greatest distance from each other, the angular distance between the shadows do not even approximate to that

between the centres of the two holes as they appear in the field of view (not reaching one-eighth of the distance in my own case): whilst we may find others for which the distance between the two shadows, if we succeed in obtaining two, is almost indefinitely small; and between the maximum and minimum distances for different *musæ* there may be observed almost all values.

Hence the *musæ* are not far from the retina, and are far from the cornea; also, they are in a fluid. Therefore the vitreous is of necessity their seat.

I might give other reasons for this conclusion. The beautifully defined character of the shadows in some cases with the open or naked eye, can only be explained by supposing the *musæ* to be very near the retina. Those which are near the retina cause at all times a partial obscurity in the field of vision even without the card. But, it may happen, that a large one, by its size, even though situated further from the retina, may produce a spot in the field of vision; but then that spot cannot have abruptly defined margins; nor can it show distinctly the texture, or mesh-work of the substance, which causes it; that is, with the unassisted eye.

The eye-lids, when approximated to each other so far as just to allow of vision between them, act very nearly as a pin-hole, and, consequently, bring these *musæ* into view. In addition to this, inflection of light at the lids causes certain *musæ* more distant from the axis, above and below it, to come into view.

Moreover, the eye-lashes of the two lids resting against each other, form, as it were, a number of pin-holes, and thus some of the *musæ*, especially those most remote from the retina, are actually multiplied, instead of one appearing to be three, four, or even more. With pin-holes placed side by side, some of the *musæ* may be multiplied three, four, or more times, with beautiful accuracy; but with the natural, but irregular ones, formed as just described, the shadows are multiplied in an irregularly broken manner.

Now, a bright light makes many persons partially close the lids in order to protect the eye from the intensity of the light, and when walking against the sun on a clear summer's day, they

do this as far as they can, and still see. Hence the crowd of muscæ seen at these times; being actually more in number than the particles in the vitreous which cause these appearances. The pupil itself on these occasions is at its minimum diameter, and, consequently, aids in the effect.

Müller (see his *Physiology*, by Baly, p. 1214) thus speaks of these nebulæ. "In many individuals these appearances are not seen, while, to others, they are very troublesome. They are by some writers called muscæ volitantes, and confounded with certain symptoms which accompany the development of amauroses, but they are quite innocent in their nature, and exist in persons whose powers of vision are most acute: I have been subject to them from childhood: whether they be owing to particles floating in the aqueous humour, or contained in the vitreous body, is not known." Their true place I have pointed out, and, what is more, all persons whatever will be found to have them in some degree, if they be desired to use a small pin-hole; and, perhaps, there are few persons who, when walking under the circumstances described above, have not seen them; but, not having their attention drawn to them, they do not consider them, and perhaps have never observed their presence. When I have desired persons who have never complained of any disease in the eye, to look through a pin-hole, in order to test the assertion that these muscæ are in all eyes, I have been answered, "Oh, yes, I see them; and have occasionally observed them before, but thought they were nothing." Also, I know that many persons with exceedingly acute sight, are much troubled with them.

What the "certain symptoms which accompany the development of amauroses" with which these muscæ are "confounded" can be, I confess myself totally unable to understand. I believe no such symptoms to exist, but that the appearances complained of in the incipient state of that disease are actually owing to these particles of the vitreous humour.

Amaurosis, as the moderns use the word, means diminution, or loss of sight, from affection of the retina, optic nerve, or brain, as distinguished from that arising from obstruction to the

transmission of light through the eye to the retina; and these muscæ have commonly been considered by writers on the eye as proving a tendency to, if not an actual commencement of, such a disease. Thus Cooper, in his *Surgical Dictionary* (we may take that work as the representative of the aggregate opinion) says, (p. 13), "One of the most common symptoms of a beginning amaurosis, is an appearance, in the patient's fancy, as if gnats, or flies, were flying about before his eyes (*Visus Muscarum*, *Myo-des-opsia*). Sometimes, transparent, dark-streaked, circular, or serpentine diminutive bodies, appear as flying in greater or less numbers before the eyes, often suddenly ascending, and as quickly falling down again, and chiefly annoying the patient and confusing his sight when he looks at strongly illuminated or white objects. The substances thus appearing to fly about before the patient's eyes are termed muscæ volitantes; mouches volantes, (Beer, *Lehre*, &c. b. ii., p. 424). If what obstructs the sight be a single black speck, it receives the name of scotoma."

"This illusive perception of various substances being in rapid motion before the eyes gradually increases; the substances themselves become less and less transparent, and, at length, are so connected together, that they form a kind of network, or gauze, by which all objects are more or less obscured. This is another symptom of amaurosis, technically called *visus reticulatus*."

We might imagine, at the first glance, that Cooper means to convey the impression that these muscæ are not due to any material cause, but exist only in the patient's imagination, as much as the appearances before the eyes of those with delirium tremens exist only in theirs; but that such is not his intention is perhaps apparent from the end of the quotation.

I have, through having very excellent sight, a great number of these figures; they are of all sizes, shapes, and shades. In my left eye I have one, which looks against the sky like a bundle of cob-web, so rolled or folded together that the mesh-work is indistinguishable; I see it at all times if there be sufficient light; when reading, it follows the eye about three lines below the one I am reading. With the card it has the mesh-work, or globule appearance,

most marked, with the interstices filled up in many places, so as to look jet-black and thick. It throws out three long narrow arms, which occupy more than half the linear field of vision. This may be considered as the type of a class. With the card, or nearly closed eye, I see another kind (apparently) as if white centre spaces of considerable length, lightly shaded on either side, the great majority being vertical, or nearly so, and not much twisted. On applying the tests I have proposed, I find these to be the most distant of all from the retina, and they are, I believe, near the crystalline lens, which may account too for their peculiar appearance; (see what I have said upon the part of the cone of light issuing through the hole, in which a particle of given size is placed,) and inflection of light at the particles themselves may promote this effect.

Besides these, I have in either eye two or three spots, which are worthy of a particular consideration. These are different from the others, both in a characteristic appearance, and as to motion. They ordinarily seem to be intensely black, and one in my right eye has a narrow black ring round it. They are all perfect circles. None of them are in the axis of vision, nor correspond to the place of the punctum cæcum. As a general law, I only see them in bright sunlight, or when looking at a white surface strongly illuminated, as a white pavement, or tablecloth, on a bright summer's day (but I sometimes see one or two on cloudy days) when at the distance of about a foot, they appear to have a diameter of half a line to a line. I will confine my remarks to one only, viz. one in my right eye, placed a little without the axis. If I fix my eye on anything, as the top of a chimney, it seems to be fixed to the left of it; at least, I can perceive no dropping as with the ordinary muscæ. Nevertheless, one would think that it does move from its place sometimes, for occasionally, when every circumstance seems favourable to its appearance, I cannot find it, nor does it seem always to be at exactly the same angular distance from the eye's axis, and yet when it is present, I cannot satisfy myself, and I have tried from time to time for the last four years, that it has any motion independent of that of the eye. Sometimes I

fancy that I can detect a little floating, at other times it seems perfectly fixed; the ordinary muscæ passing it in the field of vision frequently. From these circumstances, I began to imagine, before I thought of employing the pin-hole for such purposes, though, in spite of the cases of hemiopia, and others of paralysis of a part only of the nerve of vision, I found it very difficult to credit such a notion, that it must depend upon a defect-spot in the retina, or the paralysis of a few papillæ or fibres of the optic nerve. But, on using the card, I found this spot to assume the appearance of a thick black circumference with a transparent centre space, the diameter of this being about one-third the whole. With two holes placed together, I found it possible, by moving about the eye, or the card, to obtain two separate shadows of it, certainly very close together, yet separated by a distinct interval. This alone is proof positive that the particle throwing the shadows is in the vitreous, and is not quite close to the retina. If we suppose this particle to occasionally revolve about an axis through an angle of 90° , it might account for the phenomena mentioned above. The others mentioned being further from the axis of vision, I have not examined them with the same care, for it is difficult to do so, but there is no doubt that the one described may be taken as a type of all. These spots, when I first observed them, gave me considerable annoyance, and do sometimes even now. Is this scotoma?

Dr. Jacob, of Dublin (I quote from his own mouth), makes a distinction between floating *nebulæ* and fixed, considering the latter as much more likely to lead to complete loss of sight than the former. Imagining the fixed, I presume, but I do not recollect if he said so, as belonging to the retina, and the others as due to a material cause in some part of the lenticular structure. But the fallacy of such a diagnosis is manifest from what has been stated just above.

Since these particles are in every vitreous humour, it would appear that they are essential to a vitreous humour; that the idea of a vitreous humour (I include the hyaloid membrane in this term) cannot be complete without them. But, the question presents itself, are they in all eyes in the same

proportion? This has always been answered in the negative, and, further, that this proportion varies in different eyes from zero almost to infinity. I have shown that the proportion never even approaches zero. How far, then, is the remaining part of the answer right? This is not very easy to settle.

The first time I ever noticed any *nebulæ* in my own eyes was about four years ago. I had been reading Müller, where he talks of luminous spectra to be produced by pressure on the eye. I foolishly, in testing a fancy of my own, pressed on my eyes with considerable force. A week after I observed a black spot to follow my eyes, and my attention being attracted to this, I soon found crowds of them. In this case, one would think that a great increase must have suddenly taken place, and that this was caused by pressure. However, I will mention that I had for some time previously been employing my eyes excessively in reading, and was suffering from constipation (which is not natural with me) in a great degree, resulting probably from want of sufficient exercise. I do not believe that these *nebulæ* have varied in quantity since; at least, the more troublesome ones remain as they were then. And it is so common to hear persons complain of the sudden appearance of *muscæ volitantes*, and that they tease them considerably in their ordinary avocations, that it would seem absurd to doubt that this is due to a new deposit in the vitreous humour.

I do not deny that an abnormal quantity of those particles which produce these appearances do in many cases exist. Nevertheless, I believe that in very many cases, perhaps the majority, no such increase has taken place. 1. These *muscæ* may have always existed in the same quantity but have been disregarded. 2. Any cause which makes the patient partially close the lids, as excess of light, irritability of the retina, or branches of the fifth pair of nerves, which go to the eyes; a heavy, sleepy state, such as sometimes proceeds from dyspepsia, hypochondriasis, hysteria, &c.: incomplete ptosis, certain permanent states of the iris, the result of disease, &c. may cause *muscæ* that had always existed, but unseen, to come into view.

Persons who begin to suspect their sight to be failing are too alive to

symptoms to any longer allow appearances which they cannot explain to remain unnoticed; they try their eyes under all circumstances, and carefully record every phenomenon which presents itself in connection with vision. Hence the number of fiery, dancing spectra, which they discover in the shut eye, and *muscæ volitantes* in the open. There are some *muscæ volitantes* in all eyes, and so in slowly formed amaurosis they must always be seen, even though no increase whatever has taken place. If patients with small cataracts be questioned, it will be found that they will complain of these *muscæ* also, even when the cataract has reached a considerable size, so that it can be seen by another person occupying apparently all the pupil. Many patients, when no amaurosis is present, complain of these *muscæ* as being tormenting; if they be desired to look through a pin-hole, (and they will see through it pretty well with a cataract of some size), or towards a bright light with the nearly closed eye, they will see great quantities of these *muscæ*. In further confirmation of the effect produced by a patient's attention being drawn to what passes in his own eyes, I will add, that persons never having dreamed of any disease in their eyes have, since I have drawn their attention to these *nebulæ*, seen them, under favourable conditions, in profuse quantities.

Consequently patients may be met with *muscæ*, 1st, that are essential, or exist only in the normal degree; 2d, that are accidental, or exist in an abnormal degree.

On the first case there may be no disease, but the patient has discovered their presence from some accident, or has for the first time been led to consider them. Or his being led to consider them may have arisen from some disease of the eye making him aware of failing sight, when they are a symptom of such disease. Again, certain diseases, by their effects, mediate or immediate, on the ordinary positions of the lids, &c. cause these to be seen; and here they may be considered as even more directly still symptomatic of those diseases.

In the other case they are themselves the disease. May not these particles in the vitreous sometimes accumulate to such extent as to cause a very great

obstruction to light, equal, at least, to a decided amblyopia, whilst the special nervous part of vision, and, indeed, all the rest of the eye, remains sound? This is possible, and is worth investigating.

Should an increase of these particles take place at the same time that amaurosis is being developed, for I believe this to be frequently the fact, (and the same of any other disease) it should be considered rather as a complication than as a symptom, and would be more likely to occur in connection with lesion of the retina than that of the optic nerve or brain. It is, however, no easy matter to determine whether the patient has experienced an increase or not. There is the same difficulty in determining in any given case of increase, whether a re-absorption (whether by medical aid, or by the efforts of nature) has really taken place or not.

Muscæ volitantes, as symptoms of disease, not only of the eye, but of more distant organs, hold an important place, but their true symptomatic value has never been resolved. The hope of furnishing some data to the determination of this point has led me to consider them at such length.

As a direct symptom of paralysis of the special nerve of vision, much too much stress has been laid upon them by some, who describe them, even when unaccompanied by other symptoms, almost as diagnostic of its incipency, or, at least, showing great aptness for it. This is very far from the truth, and many persons on first observing their presence are alarmed to a very unnecessary extent, though amaurosis is truly an alarming thing: I have met with several such cases. The fact of muscæ being well seen, and their motions easily followed, does not prove insensibility of the retina, but quite the contrary: or, taken alone, they show not the presence but the absence of amaurosis. That is, their being well seen shows this, as the well-being of any thing else does the same.

We must not imagine, when we see the muscæ descending after an upward motion of the eye, that they do so because they have a greater specific gravity than the vitreous humour. The contrary is nearer the truth. From the internal motions of the fluid on raising the eye they are depressed, and consequently seem to rise as well by this

motion as by the actual upward motion of the eye itself. When the eye is brought to rest, they, by their buoyancy, or, what is far more probable, by the recovery of its original form and place by the vitreous humour brought about by the connections of the hyaloid membrane, and of the elasticity of the neighbouring parts, rise again to their original places, and thus appear to sink. In like manner, if we give a sudden lateral motion of the eyes, they follow it, and then regain their places by an opposite motion; and, even if, after looking upward for a time, we suddenly depress the eyes through any angle, the muscæ will likewise be depressed, and then regain their places by an upward motion.

What can be the course of this internal motion? The greater specific gravity of the particles is out of question, and there is left muscular pressure in prescribed directions, and the vis inertia of the vitreous itself. It probably results chiefly, if not wholly, from the latter cause. But it is not so easy to decide this point by experiment. It is difficult, or impossible, to move the eye by means of the head alone, so that it be not pressed upon at all by its own muscles, by reason of sympathetic action. There cannot be anything like free motion in such a cell-divided fluid. A very small motion of a musca would cause its shadow to travel through a large portion of the field of vision: and very often, in our endeavours to watch some that are out of the axis of vision, we, in spite of ourselves, follow their motions with the eye, and thus increase their motion.

The more I consider their connected chain-like character, their figures remaining always extended, their branches thrown out in so many different directions, and to such great lengths, the different parts of these figures changing their relative positions but very little, so that each musca has, so to speak, a home in the vitreous, to which after each disturbance it finally returns, the more I feel disposed to regard them as fringes, or processes of the hyaloid membrane, or as deposits in it. In this case increase of these may result from inflammation of this membrane.

The optical principle which I have used to find the seat of the muscæ volitantes being a general one, or applicable to the whole eye, one might ima-

gine that it might be practised with great advantage to diagnose between cataract and amaurosis in their incipient stages. However, this will not be found to be so; for it is no easy matter to instruct patients to try such delicate experiments as are necessary. Besides, the ordinary cataract, though commonly commencing in the centre of the lens, is of too diffused a nature, being, in short, merely existing in the greatest degree in the centre, and gradually less and less from the centre towards the circumference, and not like a distinct seed-like spot, perfectly, or nearly so, impervious to light, occupying the central part of the lens: from this it results that there is not a distinct well-defined shadow thrown on the retina, but, in all positions of the eye, the patient sees only as it were a general mist.

Nevertheless there are certain species of cataracts true, or false, of a more partial character, in which the principle may be used. There are certain other points of the disease of the eye which it is capable of determining, and modifications of it may give us valuable information even in the ordinary cataracts. I hope to make some remarks on our means of diagnosing some of these diseases at a future day.

21, Regent Street, Cheltenham,
March 12, 1845.

CRIMINAL ABORTION EFFECTED BY MECHANICAL MEANS.

[WE are indebted to Dr. R. Lee for the two following cases, which present many points of interest.—*Ed. Gaz.*]

In the last week of February 1845, the bodies of two native women, who had died suddenly, were sent to me for examination.

A, dead for three days; body in an advanced stage of decomposition; was said to have been recently delivered, and, on her death-bed, to have accused the man with whom she cohabited, of having caused abortion.

There were no external abnormal appearances, and on laying open the abdominal cavity, the viscera at first sight appeared healthy; but on proceeding to examine the contents of the pelvis, the intestines were found to be

in a state of acute inflammation, with lymph freely effused on their surface; and floating among them, and lying transversely, was found a piece of stick, about $5\frac{1}{2}$ inches long, of the thickness of a small quill, with one end slightly sharpened, and the other looking as if it might have been broken off. On examining the uterus, its fundus was discovered to have been perforated (in the axis of the organ) by the piece of stick,—a small hole, large enough to admit of its passage, still remaining open. The contents of the uterus, which was about one-half larger than its normal size, had been recently evacuated, and the part to which the placenta had been attached was plainly recognizable. The left ovary contained a distinct corpus luteum, with its central cavity still open, which might indicate about seven months' advance in pregnancy. No laceration of the os uteri was discoverable, and it was not known what had become of the fœtus.

The introduction of pieces of stick into the uterus is here a very common mode of producing abortion (which is a very frequent crime in India); and many cases are on record in Europe, in which they have been found after death fixed in the walls of the uterus; but cases such as this, in which the stick has been forced fairly through into the abdominal cavity, must be rare. The stick may originally have been of double its present length, and been broken off by the violence employed in introducing it. The evidence went to shew, that no one but the man with whom she cohabited, could have had access to her; and it is not to be supposed that the woman herself could have used sufficient force to have pierced the walls of the uterus; it must therefore have been introduced by the man, and its passing through the axis of the uterus must have been accidental.

From native accounts, it would seem that death followed in about eighteen hours after the receipt of the injury.

Death from Violence or Disease— Extra-uterine Pregnancy.

B, dead about twelve hours; said to have received a beating from her husband, and to have died soon afterwards of cholera.

One or two slight contusions were observed over the ribs; abdomen not

unnaturally swollen; body that of a healthy woman. On opening the abdomen, it was found quite full of dark-coloured blood, chiefly fluid, but with coagula mixed. The intestines were rather pale. Proceeding downwards, the whole cavity of the pelvis was found to be occupied by a large and pretty firm coagulum. The bleeding was ascertained to have proceeded from the rupture of the left Fallopian tube. About a hand-basin full and a half of blood was removed, but unfortunately no trace of an ovum could be found. The uterus was then removed, and on examination presented the following appearances. Os tincæ: lips freely agglutinated by the secretion of the Nabothian glands; body perhaps a trifle larger than in its natural state; interior slightly vascular, and lined with jelly; no trace whatever of a decidua. A bristle was passed without difficulty along the left Fallopian tube for an inch, up to the walls of a tumor about the size of a pigeon's egg, whence the hæmorrhage had proceeded. The coats of the tube, forming the walls of the tumor, were much attenuated, and displayed a purple discoloration; there was a small rent in them posteriorly, but scarcely large enough to allow of the passage of the point of the little finger through it. The interior of the tumor was occupied by a firm coagulum, and no trace of the recent attachment of an ovum to it could be made out. Right ovary externally wrinkled, containing two old corpora lutea, one, though not the size of a millet-seed, having a distinct central cavity. Left ovary full, and vascular at one or two points, where the peritoneal covering was tense and shining, with one or two seeming holes and cicatrices on its surface, but none pervious to a bristle. It contained two corpora lutea, one old, the other recent, about the size and shape of a small bean, its yellow matter having a slightly radiated appearance, and with the lining membrane of its central cavity highly vascular,—it was probably a month or five weeks old.

Although cases like this can seldom be the subject of medico-legal inquiry, yet the question, how far the hæmorrhage may have been accelerated by the use of violence, is of some interest; and as the frequency of the existence of a decidua in the uterus, in cases of extra-uterine pregnancy, is still a "vexata

questio," its absence in this case, is worthy of being noted.

JOHN MACPHERSON,
Civil Assist.-Surgeon.

Howrah, Calcutta, March 7, 1845.

TREATMENT OF POISONING BY PRUSSIC ACID.

GOOD EFFECTS OF COLD AFFUSION.—RECOVERY AFTER LARGE DOSES.

SIR,

As the following statement appears interesting at the present moment, inasmuch as it shows, I think, the greatest length of time the human subject has been observed to be under the influence of hydrocyanic acid without producing death, I shall feel obliged by its insertion in the GAZETTE.

I am, sir,

Your obedient servant,
THOMAS TAYLOR.

Cricklade, April 13, 1845.

H—G—, aged 59, a healthy agricultural labourer, rather stout made, applied to be relieved from ascarides, and was furnished with a draught containing *Ol. Ricini*, 5vj., *Spt. Tereb.* 5ij. which he was directed to take early in the morning. His wife, at the same time, was taking prussic acid of Scheele's strength for a dyspeptic affection. The wife's bottle contained sixty minims of Scheele's acid, diluted with three ounces of distilled water, of which she took one tea-spoonful in toast and water three times a day. She had taken, as nearly as could be ascertained, about one-fourth part of the medicine, or six drachms, containing fifteen minims of the acid: there remained in the bottle eighteen drachms, containing forty-five drops of the acid, the whole of which was swallowed by the husband instead of the draught prescribed for him: he had no sooner taken it than he was seized with a violent constriction of the diaphragm, with a sense of suffocation. He walked to the outer door of the house, about twelve or fourteen paces, when he fell insensible, and, in his fall, broke a large pan, which was full of water, the contents of which pretty well saturated his clothes, and this, no doubt, had a beneficial influence upon him. The accident took place about half past seven o'clock in the morning, and it was not until twenty minutes after

eleven, or nearly four hours after taking the acid, that he showed symptoms of returning animation. At this time he was seen by Mr. Currie, a gentleman at present assisting me, who, on making inquiries as to what he had taken, discovered the mistake, when, by the application of cold water and ammonia, he was soon restored. When coming to himself he vomited freely, but no odour of the acid was perceptible in what he threw off his stomach! The next day he was suffering from the effects of hot bricks, and hot bottles of water, which had been applied to him with too liberal a hand during the state of insensibility before Mr. Currie saw him, and which is now his only ailment.

[The acid which was here taken was supposed in the first place to have been Scheele's. On analysis, however, it was found that fifty drops gave only five grains of well-washed and dried cyanide of silver (equal to one grain of anhydrous prussic acid). The patient, therefore, swallowed a dose equal to that taken in Mr. Hicks's case, elsewhere reported (Vol. xxxv. p. 893), *i. e.* nine-tenths of a grain of anhydrous acid, which shows that this dose may be taken without always proving fatal, although in this instance the patient, a stout healthy man, had a narrow escape of his life, for he only began to recover after hours. This case shows that in reporting a case of poisoning by prussic acid, it is always necessary, if possible, to determine the exact strength of the acid from part of the poison taken; for the acid here used was reputed to be Scheele's, when it turned out to be no stronger than that of the Pharmacopœia. It proves that a person, after having swallowed such a dose, may have the power of running a considerable distance; and further, that the contents of the stomach, in the short space of *four hours*, after nine-tenths of a grain have been swallowed, may leave no smell of prussic acid. This case is in many respects interesting and important.]

We add to this two other cases, for the purpose of showing the beneficial effects of cold affusion.

Case of Poisoning by Hydrocyanic Acid.

Mr. Harthill has related a case of recovery from poisoning by hydrocyanic

acid, which recently occurred under his care. He was summoned to a soldier, aged 23, about 9 o'clock in the evening of the 15th of January, and was informed that he had taken poison. He found him insensible, with convulsions. The mouth having been forced open, emetics of mustard and sulphate of zinc were exhibited. Mr. Harthill sent to Mr. Law, at the Infirmary, who arrived shortly with a stomach-pump, which was used for injecting the stomach, for the tube could not be introduced far enough to withdraw any fluid; a stream of cold water was applied to the spine, and turpentine enemata administered. The effects of the cold water were instantaneous, feeling and consciousness becoming immediately evident. Powerful stimuli, brandy and ammonia, were administered; sinapisms to the thighs, and in about four hours, eight minims of tincture of opium were given. The next day he was much recovered, and has since been sent to head quarters. On making search, an ounce phial was found, smelling very strongly of hydrocyanic acid—labelled, but with the name of the druggist cut off, apparently by design, and no account could be obtained as to the place where it could be procured. (*Prov. Med. Jour.* Mar. 1845.) The quantity taken is not stated.

Poisoning by Hydrocyanic Acid.

The following case was originally reported by Dr. Banks, of Louth, in the *Edinburgh Med. and Surgical Journal**. We are induced to extract it in an abridged form, as the treatment appears to have been quite successful in an almost hopeless case.

A girl, æt. 19, while labouring under dyspepsia, took hydrocyanic acid as a medicine. In order that she might have it in as cheap a form as possible, an ounce and a half vial was sent, containing forty drops of the acid in the whole mixture, of which she was directed to take a tea-spoonful in camomile tea. She did not attend to the directions, and carelessly poured out into a cup rather more than three-fourths of the whole mixture (therefore *thirty drops* of acid) into a cup, and drank it off. Immediately after taking it, she exclaimed, "bread! bread!" and in another instant her mother perceived her spring up convulsively from

* Vol. xlviii. p. 44.

her seat, and quickly ran to her assistance. The mother states that she was then quite senseless; her teeth firmly set, and her eyes staring and fixed. Two medical men arrived in five minutes after the dose was taken. No stimulants could be administered, as she was unable to swallow. The convulsive stage was now passed. The patient was lying on the floor, senseless; the limbs quite flaccid; eyes fixed and glistening; pupils dilated, and wholly insensible; respiration slow and feeble, and the pulse scarcely perceptible, with a cold clammy sweat over the surface. In spite of stimulants being introduced into the stomach by the stomach-pump, there was no amelioration in the symptoms. Cold affusion was then employed. A stream of cold water from a large pitcher held at some distance above was allowed to fall upon the head. In a minute afterwards, the patient began to move. She then became convulsed, and writhed and moaned as if in agony. The respiration became stronger, the pulse fuller. The cold affusion was repeated, when she again cried out as if in great pain, extended the extremities, and passed an involuntary evacuation. The pulse and breathing continued to improve, and there was some appearance of returning consciousness. She was placed in a warm bed; reaction followed, and in a few hours she appeared quite sensible and collected, but had no recollection of anything that had transpired. She was ill and weak for a few days, and complained of weight, pain, and heat of the head, with some gastric uneasiness, but which were soon relieved. She perfectly recovered.

[This case is highly interesting as showing the good effects of cold affusion. There is reasonable ground to attribute the recovery of this patient to the practice. It is far better than venesection, which can only be prejudicial, where a powerful sedative effect has been produced on the heart. In one important point, the case is sadly defective,—the strength of the prussic acid, and the quantity of anhydrous acid taken in the *thirty* drops, are not mentioned. All we are informed of is, that the acid was procured from Garden of Oxford Street. Dr. Christison states, that the dose here taken was very nearly a *whole grain* of anhydrous

acid (770), but upon what authority does not appear.]

Case of Poisoning by Cherry-laurel Water. By Dr. Hayn.

The following case, published in Schmidt's *Jahrbücher*, and extracted from *The Chemist*, April 1845, is chiefly remarkable for the great length of time during which the symptoms were protracted.

A middle-aged man, of a hypochondriacal disposition, found means of procuring aqua laurocerasi, of which he drank *one ounce and a half*; when the symptoms of poisoning appeared, he did not deny having committed the crime. Not until after three hours was paralysis noticed in both the hands and feet; the head hung down, he being unable to raise it; involuntary excretions of fæces and urine; the extremities were motionless and cold, but not devoid of sensation; the pulse small, the voice hoarse, but distinct. The full consciousness of the patient was remarkable. He felt pleasure in finding his debility to be on the increase, and notwithstanding the antidotes administered, he calmly expired in the evening. On dissection, the blood was found to be of the peculiar striking dark colour and unctuous condition, *but no odour of prussic acid could be perceived!*

A GOOD PRACTICAL CASE.

The following is an entry in Pepys's Diary:—"2d (November, 1667). To the King's playhouse. The house full of Parliament men, it being holiday with them; and it was observable how a gentleman of good habit, sitting just before us, eating of some fruit, in the midst of the play did drop down as dead, being choked; but with much ado Orange Moll did thrust her finger down his throat, and brought him to life again." This case is clear and practical enough. It has lately been shewn that, when a foreign body lodges in the upper part of the trachea, or in the larynx, the symptoms may be those of extreme distress and impending suffocation, or they may be of a slighter character. Where it is lodged further down in the trachea, or in the bronchus, they are commonly less severe; but where the patient falls, as if choked at once, the substance is almost certain to be lodged either above or between the vocal cords, where it is generally within reach of the finger. Sudden suffocation has also, in some rare instances, been known to occur from the lodgment of a large mass of food, &c. in the oesophagus.

PRACTICAL OBSERVATIONS ON
MALINGERING.

By FRAS. W. GRANT CALDER, ESQ.

Assistant-Surgeon 2nd Regiment of Life Guards.

*Origin of the term "malingering"—
Importance of the subject—Its difficulties—Causes of malingering.*

"EXPERIENCE demonstrates that a gentle and humane temper, far from being inconsistent with vigour of mind, is its usual attendant; and that rough and blustering manners generally accompany a weak understanding and a mean soul, and are, indeed, frequently affected by men void of magnanimity and personal courage, in order to conceal their natural defects."—*Dr. John Gregory.*

Malingersers were called *maligners* in the latter part of the last century, as we learn by Dr. Hamilton's "Regimental Surgeon." I suppose the term arose from the surgeon and regiment feeling that they were maligned, hurt or ill-used, as it were, by the shuffling nature of their conduct. The only way to detect malingersers, or feigners of disease, is to become well acquainted with disease; and no man ought to consider himself well calculated to grapple with this important duty until he has had years of ample experience roll over his head; and even then, he will still find it one of the greatest difficulties he has to contend with. Such a degree of natural sharpness and acumen, and so much practical knowledge of the profession, are required to fit a surgeon for any thing like success in this department of his duties, that it may be said with much truth, that few indeed, either possess the former, or ever acquire the latter, in such perfection, as to enable them to treat with proper confidence suspected individuals.

Malingering is happily by no means a common occurrence in the army at the present day. For why should soldiers mangle, or why should they attempt to find their way again into civil life? The same class of individuals is no where else so well fed, so well clothed, and so well housed. These circumstances the soldiers very well know, and by their conduct prove that they appreciate them. That malingering, however, does exist there cannot be a doubt, but to such a trifling extent, that it is entirely unworthy of the notice it has received. It is a foul

libel upon the character of the British soldier to suppose it common; and the sooner medical officers apply their minds to the detection of real disease, and cease to bother their brains about that which is called feigned, the better. It is very easy for an ignorant surgeon to accuse a man of malingering; but we must remember, that it is more easy to accuse than to prove; and few things are more absurd than to see a young assistant attempting to prove a man to be feigning a disease, of the intimate and varied nature of which he is himself ignorant. Yet these things have been.

On home service the danger is little to be dreaded; but on embarking for a distant colony, I can fancy the greatest care to be necessary. What I want is, to disabuse the minds of young surgeons that the evil exists to the extent I have generally found them fancy it does; and in the course of this article I hope to be able to point out, that while we must ever be guarded, we need not load ourselves with unnecessary fears. It is a common remark with some surgeons, that all young soldiers mangle. The remark is in some degree true; but it ought scarcely to be called malingering; they are merely home-sick, and somewhat out of sorts, in consequence of their new mode of life. Young people are pliable in their nature, and unable to exhibit that continued firmness of purpose, which is requisite in order to obtain their discharge by feigning disease; and, moreover, if they possessed this qualification, they have not the knowledge to invent a story likely to deceive a good surgeon. When young soldiers come into hospital, therefore, they should be kindly treated, and after a time encouraged to go on again with their duties; and not until they shew too great a love for the hospital, should our conduct be such as to disgust them with it.

During the first five years of a soldier's service, his youth and inexperience combine to prevent him from being a dangerous mangle; and although during that period he will, as a general rule, be more frequently in hospital than ever after, nevertheless there is nothing uncommon about that, nor ought his word to be suspected on that account, seeing that such is the lot of young soldiers generally. En-

listed at 17 and 18 years of age, a long period of service before them, the prospect of a separation from the whole of the best part of their lives from their families and homes, new work, a new style of dress, an altered mode of living, and new associations altogether, are sufficient of themselves to stir up many diseases both of body and mind, but which kindness and wholesome encouragement on the part of the surgeons will in due time remove. Add to these the fatiguing night duties to which troops are occasionally, and always to a certain extent, exposed, and we shall find sufficient cause for young soldiers being often ill, and sometimes suspected of malingering, when they really are not. In my own regiment I can attest, that but for the young soldiers, we might often shut our hospital, so much do young men require of both care and attention before they can be depended on, or be made what are called seasoned soldiers; that is, men not only drilled, but inured to the habits and mode of life of soldiers.

At the end of five years' service men become both artful and thoughtful, and therefore the next five years of their service may be considered a dangerous period with them. Their service is nothing to throw away, and they have still a long time to look forward to, before they can claim a pension. It is during this period, therefore, of their service that we find them hanging on in hospital, and attempting to convince us that their trifling ailments are of great importance. Let them pass through ten years' service, however, and the difficulty will then be, to get them to malingere again until they have completed fifteen years. At the end of this period, if a man is a malingerer at all, he will generally obtain his discharge; he has then become old and obstinate; he knows he is entitled to a pension for life; and if he resists, the difficulty is very great to overcome him. Should he leave the hospital, however, and take to his duty, and complete another year or two, even although sickly, he will again offer the greatest possible difficulty to being discharged. He now looks forward to completing his full period of service—twenty-one years; and its reward, his full amount of pension. Fifteen and twenty-one years in the infantry are the periods which require to be completed, in order to en-

title a man to a permanent pension. In the cavalry, again, he requires to complete seventeen and twenty-four years before he can claim the same benefit. The feigning of disease will be found, therefore, to be entirely influenced by their near approach to, or distance from, these periods.

What the effects of the last warrant, regulating the pensions of soldiers, may be, remains to be proved. But one cannot help surmising, that, as they have only sixpence a day to look forward to, after completing twenty-four years of service, there must be some risk that regimental surgeons will not have the same facility in keeping their corps effective, that they have at present.

It has been too much the case in the army to set down every soldier as malingering, whose case the medical officer might not, in consequence of his own ignorance or its obscurity, be able readily to understand. I have known the most severe cough, with expectoration and emaciation, produced evidently by the noxious and heated atmosphere of the stables; and I have sometimes fancied that the headaches complained of in the following case had their origin from the like cause:—

H., aged 32, for the three years preceding his leaving the regiment, was very often in hospital in consequence of violent headaches. When they came on, they quite unfitted him for his duty, and he was consequently obliged to take refuge in hospital. His pulse on these occasions was never peculiarly excited, neither did he ever exhibit any well-marked indication that he had the pain he complained of. But by the use of some aperient medicine, and occasionally the application of a few leeches to his temples, he generally got well again after the lapse of a few days, and resumed his duty. At length his admissions into hospital became so numerous, that he was more than suspected. Nevertheless, in the absence of all well-marked indications of disease, he was kept at his duty. He then purchased his discharge, and has for years been a policeman. He was always a respectable man, and he is now a serjeant in that force. He has never had a headache since he left the regiment.

From my experience of the diseases of dragoons, and my knowledge of the

offensive odour of the cavalry stables at certain times, I would hesitate long before I said that this man was a malingerer, or that the disease he complained of had not been real. I myself scarcely knew what it was to have a headache; and yet I have more than once had one instantly induced from going into my stable. By throwing the door completely open, even in winter, for a few minutes, the atmosphere has become instantly pure; and with this change I have experienced an immediate abatement of my headache. The soldier whose case has just been related had ten years' service, and he purchased his discharge because the stable duty did not agree with him. It may be asked, in answer to my belief that his headaches were real, why did not the foul air of the stables (taking it for granted that it was the cause) produce the disease in the first two or three years of his service, rather than at a later period? To which I would reply, after the manner of my countrymen, by asking another question—Why is it that the said stable duty shall agree sometimes very well with a man at first, but will afterwards prove the cause of such a constant bronchitic affection, as to render him wholly inefficient? Many resist disease stoutly at first, who succumb to it afterwards; it is by the repeated shocks that the breach is finally made in cannonading; or, to use a more homely phrase, it is the constant dropping of water which wears the stone, and not the sudden gush; and although it is the general rule for men to become so seasoned, and at length so accustomed to a nuisance, that it shall no longer prove such, it would, nevertheless, be neither in accordance with our knowledge of the laws of nature, nor agreeable to our experience of disease, to doubt that to this rule we have likewise exceptions. As an additional reason for the observance of all care in deciding upon cases of mere headache, I give the following case from page 116 of Dr. Gavin's work on Feigned Diseases:—"I am in possession of the case of a soldier, who for a long time asserted that he had a severe headache, but who was nevertheless always declared free from it by the surgeon, a highly intelligent officer. On dissection, the surface of the brain was found ulcerated."

The most rigid justice should ever be dealt to the private soldier; and although no man is more alive to the great, the absolute necessity, which exists for all due attention and support being afforded to the non-commissioned officers in the faithful discharge of their duty; yet it is only in its faithful discharge that they are entitled to support, or ought to be listened to. Vexatious conduct on the part of a serjeant has disgusted many a good man with the service, and sent many a malingerer into hospital. It is too often the custom of officers to make a man what is called "a marked man," merely because he does not stand well with the non-commissioned officers of his troop or company. Before a man is permitted to be "marked," he ought to be listened to with attention, and the most searching inquiry made into his conduct openly. No private hearings should be given to serjeants or corporals; but if such be permitted, let the statement be again made in the presence of the condemned. Were such conduct always pursued, some men who are now lost to the service would have been gained to it; and were non-commissioned officers to know, that they were in as great danger of being reduced to the ranks for troublesome and vexatious conduct to those placed under them, as for any other impropriety, fewer men would swell our sick lists, and the feigning of disease would be still less common. Idleness on the part of captains of troops and companies is the root of the evil; it is easier for them to believe that a man is discontented and dissatisfied with the service, than to inquire into the truth of the accusation. The moral command of men they do not enough consider, and instead of taking steps to prevent a man from being goaded on to some outrage, they permit the cause to exist. Few enlist who have not some idea of serving, and there must therefore be a cause for the arduous attempts sometimes made to get out of the army. Natural discontent will have its influence with some; a desire to return to their former avocations and their homes, is no doubt a cause with many; but harsh treatment, and an unkind manner in those placed over them, have more to do with the matter than is commonly supposed.

[To be continued.]

SOME OBSERVATIONS
ON THE
MEDICAL TOPOGRAPHY, CLIMATE,
AND DISEASES,
OF THE
BIGHTS OF BENIN AND BIAFRA,
WEST COAST OF AFRICA.

BY W. F. DANIELL,
Member of the Royal College of Surgeons of
England, &c.

THE Rio St. Bento, or St. John's river, eleven miles to the eastward of the Nun, from its insignificance, is but rarely entered. By some it has been stated to have a greater depth of water, and to afford a more direct and easy route to the town of Brass, than by the devious creeks of the former river. Brass town, the seat of government of these regions, is located upon a flat and denuded patch of ground within the recesses of the forest swamps, and barely elevated above the waters of the creek that flow past it. To Europeans its locale is almost unknown. It enjoys a population of three thousand, who are mainly dependent on their Eboe plantations for the means of subsistence. From this stream to that of the New Callebar, a distance of fifty miles, the land is merely a low and desolate marshy jungle, heavily timbered with mangrove, and bounded on the verge of the sea by a beach of sand, the continuity of which is interrupted by the apertures of four inferior rivers. They have been denominated the Rio St. Nicholas, or Filana, R. St. Barbara, or Sempta, R. Meas, or St. Bartholomew, and the R. dos tres Irmaos, or Sombreiro. As these titles are manifestly of Portuguese nomenclature, it is probable that either Diego Cam, in his voyage along the coast from D'Elmina to the Congo, or Fernando del Po, in his expedition to Benin, conferred such upon them.

Eight miles from the Sombreiro is Foko, or Fouché point, forming the western boundary of the Rio Real, or New Callebar river, and which has been placed by hydrographical observations in $4^{\circ} 22' 40''$ N. lat. and $7^{\circ} 0'$ E. long. This stream was designated by the Dutch traders as New Calbary, and by the English as the Calbarine. In the last century it was much frequented by small sloops or shallops that extensively traded for yams, ma-

nioc, and other farinaceous articles, then imperatively required by the larger slave-ships of Bonny and other rivers to leeward. Besides vegetable and other exports, it yielded at periods no inconsiderable number of slaves brought from the Hackbous country. The attention of the inhabitants is now directed to the culture of the palm tree, and the vending of its produce, with which they annually load several ships.

The village of Foko, or Fouché, originally named by the Hollanders Wyndorp (from the abundance of palm wine, or Tumbo, procurable from its natives), consists of a number of scattered houses, indiscriminately erected around the point. It is inhabited by the river pilots and their families, who are mostly engaged in piscatory pursuits, in which they are very expert. The aggregate amount of people is above three hundred. A deep and conspicuous indentation of the coast three miles to the westward of this point is termed Fouché Gap. A few native huts may be observed amid the evergreen brushwood that skirts its limits. Fouché village and point are decidedly the most healthy localities in New Callebar, from their favourable exposure to the daily sea breezes, and exemption from mudbanks, and their natural concomitants, mosquitoes and sandflies. The soil in the neighbourhood of the houses is a thin layer of sand upon a bed of alluvial deposits. The sandy shore in front of these habitations may be said to continue to the mouth of a narrow creek that obliquely winds behind the town towards the Gap, where it has been supposed to join the ocean.

Six or seven miles beyond Fouché point is Youngtown, scarce worthy the name applied to it. It possesses about eight hundred inhabitants, the majority of whom are the slaves of a petty chief. Some tall and graceful cocoa-nut trees, with an occasional palm and benana, are the only objects that serve to dissipate the pervading monotony of mud and mangroves meeting the eye on all sides. A short distance to the northward of this creek is the entrance of another that leads to the Quorra, and through which the Bonny canoes pass when they attend the Eboe markets. The upper projection of the bank at its mouth is called Juju point;

abreast of it the merchant vessels commonly anchor. Following a circuitous course for some miles to the northwest, it unites with the one that passes by the chief town of New Callebar, five miles more to the north. This latter creek, after effecting a junction with that just mentioned, conjointly with it tends towards the Brass country, thus constituting an island, on the right bank of which, in proximity to the river, the metropolis of this kingdom is situated. The plan of the town, its architectural construction, with the customs of its inhabitants, are precisely the same as those of Bonny, the description of which will in general suffice for this and the other towns of Callebar. The population approaches to near eight thousand, who are descended from the great Eboe tribes of the interior. Their diseases resemble those of the other maritime districts of the Delta. In the centre of the native edifices, and facing the king's residence, is a reservoir or pond of fresh water, in the rainy months plentifully supplied with a fluid of a tolerable quality. In the dry season, from the demands of the populace, and the incessant evaporation from its surface, it becomes encrusted with a scum of animal and vegetable exuvæ, which emits a disagreeable nauseous odour. In this state it is extremely unwholesome to Europeans, who are very apt to drink it, in consequence of the scarcity of pure water, which can only be obtained for the use of the shipping from the distant inland creeks.

At Youngtown, the river is from two to three miles in width, but opposite the Callebar creek diminishes to less than two, and, in proportion as it recedes from the sea, gradually contracts in size, and finally terminates in a number of subsidiary branches. The eastern bank of the stream is the boundary of an uninhabited morass that descends within three miles of Fouché, where it suddenly turns to the eastward, forming the intervening tract of land between it and the Bonny river. On both sides of the stream the swamps are so low as to permit a regular inundation of the tide, whose ebb exposes to the action of a torrid sun extensive shelves of alluvial and clayey mud that engender myriads of winged pests so annoying to the white residents at the anchorage. The voracious ground-shark

(*Zyzzana vulgaris*?) infests the lower part of the river, and is held by the natives as sacred. Its destruction therefore is punishable with severe penalties. The insalubrity of these localities is well known and appreciated in the Bights, from the fearful sacrifice of human life that has occurred in them.

The Bonny, or Bani, was one of the first rivers which the Dutch, English, and Portuguese, were acquainted with in this portion of Africa. From the commencement of the sixteenth to the present century, it was the favourite mart of the slave-ships, when the exportation of human beings was a legalized traffic, and the amount of slaves transhipped seldom came to less than 16,000 per annum. Since the extinction of this odious commerce, it ranks as the grand emporium of the palm oil trade, exporting many thousand tons of this lucrative commodity, and employing more vessels than all the rivers of the Bights collectively. The southern extremity of the shore, at its embouchure, has received the title of Rough Corner, in the old charts that of Bandy Point, and is eight miles to the eastward of Fouché; both this and the New Callebar river having one common estuary. Between these two promontories is a small islet, three-quarters of a mile from Rough Corner, called Breaker island, formed by the confluence of the tides of both streams, and scantily clothed with clusters of dwarf brushwood. The outer channel leading to this isle is rather intricate, and the navigation of it attended with numerous difficulties, owing to the position of certain sandbanks, particularly the Baleur, Spit, and Portuguese shoals, on which in heavy weather the snowy crests of a mountainous sea break with tremendous force and turbulence. A mile from Rough Corner, on the right bank of a petty rivulet, masked from view by a compact array of young mangrove shoots, is Jujutown, the abode of the pilot-fishermen, and the principal priests, or Jujumen. It contains about four thousand inhabitants, who are engaged in trading for palm oil and in fishing; the products of the latter occupation being invariably dried, cured, and sent into the interior, where they are much valued. The soil of this district is a yellow siliceous glomerate, slightly elevated above the river, and covered in different places by a rich

dark loam, on which the *Gramineæ*, *Cyperaceæ*, *Leguminosæ*, &c., riot in all the gay luxuriance of a tropical verdure, overshadowed by the deeper-tinted foliage of several magnificent trees.

The town in its structural outline bears a close affinity to Bonny; with this distinction, however, that its site is a composition of mould, sand, and shells, in place of accumulations of filth and vegetable refuse. In the environs of Jujutown, the prospect is also far more pleasing and diversified. Fresh water of an inferior quality may be procured from a small spring adjoining some native edifices, termed the Barracoons, in prior years used for the reception and accommodation of purchased slaves. Like other negro tribes in Western Africa, they have preserved some faint vestiges of a past history, and refer with pride to an ancient tradition, that the land on which their town was founded was formerly a floating island, brought by the waves from a distant continent to the spot where it is now fixed. From a few aborigines which existed thereon at the time of its separation, they deduce their primary origin. No credence can, however, be attached to such vague and legendary reports, inasmuch as the physical conformation of the skin and other peculiarities are plainly indicative of an Eboe descent.

From Rough Corner, a firm sloping and sandy shore, skirted by thickets of stunted underwood, is prolonged three miles up the river to the outlet of a creek communicating with the river Andony. Half a mile to the southward of this creek is the usual landing to Bonny, from which the path to the town passes down the bed of a stream, dry at low water, but over which Europeans have to be carried, in consequence of it answering the purposes of an ordinary sewer for the inhabitants. It abruptly terminates in a cul de sac on the borders of the suburban tenements, that are hid from the shipping by mangrove and two or three gigantic cotton trees, whose lofty and umbrageous foliage may be considered as one of the most prominent attractions throughout the tame and wearisome scenery of the circumjacent swamps. From the projecting limit of the beach at the Andony creek to the landing place of the town, the respective cask-houses of the trading vessels are strewn

along the margin of the strand. At the point just alluded to, the criminals of the country are executed, and their mutilated bodies thrown to the ground-sharks, whoswarm in multitudes around the place.

Bonny, or Great Bandy town, as it was sometimes named, is built on the southern bank of the Andony creek, on the verge of an extensive morass. It occupies a large space of ground, from the irregular erection of the houses, which evince a barbarous and rude taste in their construction, with a perfect indifference as to either cleanliness or comfort. The framework is composed of mangrove sticks, interlaced together by pliable withes, and smeared over with a cement of clay and sand, indurated in the sun, so as to be perfectly durable. These huts are subdivided into four or more apartments, according to the rank of their inhabitants, and are destitute of any ornamental embellishment, most of them being without windows for the transmission of light or ventilation. They are doubtless more for ostentation than use. The roofs are composed of the branches and matted leaves of one of the sago palms, but are so inefficiently united as to furnish little or no protection from the rains, and it is not an uncommon event to see the whole fabric dismantled by the heavy puffs of a tornado. The streets are the narrow and confined footpaths between the houses, so intricate and tortuous as to perplex all unacquainted with their destination. During the periodical rains they are nearly submerged, and almost impassable from semi-liquid mud and pools of stagnant water.

[To be continued.]

ON THE MEDICINAL USE OF THE OXIDE OF SILVER.

To the Editor of the Medical Gazette.

SIR,

IN your last number I find a communication from Dr. Allnatt respecting the treatment of a case of chronic leucorrhœa with the oxide of silver, a remedy which I introduced to the notice of the profession some years back, and which has since obtained very general use. Dr. Allnatt does not do me the honour of mentioning my name;

but if, at any rate, he will do me the favour of referring to my papers on the subject, published in the *Medico-Chirurgical Review* of July, 1840, and to the *Lancet* of July 10, 1841, he will find a few hints as to the employment of oxide of silver in uterine discharges.

I regret to say that, within the last few days, a case has come within my knowledge where I understand that cutaneous discoloration has resulted from the administration of the oxide of silver, in one-grain doses, three times a day, during the space of more than twelve months. I do not, however, consider this case to afford any conclusive evidence on the subject, being unassured as to the mode of preparation of the remedy, which constitutes a matter of high importance, inasmuch as suboxidization and superoxidization are alike highly objectionable; and I have repeatedly found either state existent in different samples which I have examined.

I am fully confident that the oxide of silver is a most useful and manageable preparation, and one with which there is far less danger of discoloration, or other injurious effect, when *properly prepared and judiciously administered*, than with the nitrate.

It is my intention shortly to offer a few further considerations on the subject to the notice of the profession, and should be glad to avail myself of your columns for that purpose.—I am, sir,

Obediently yours,

C. H. BUTLER LANE.

Ewell, Surrey, May 5, 1845.

[Although Dr. Allnatt did not mention Mr. Lane's name, he particularly refers to Sir James Eyre's "Practical Remarks" (reviewed in the same number), in which Mr. Lane's name is prominently mentioned. We shall be glad to have an account of Mr. Lane's further experience of this remedy.—*ED. GAZ.*]

PARALYSIS A CAUSE OF INSANITY.

PARALYTIC affections are a much more frequent cause of insanity than has been commonly supposed, and they are also a very common effect of madness. More maniacs die of hemiplegia and apoplexy than from any other disease. When insanity supervenes on epilepsy, or where the latter disease is induced by insanity, a cure is very seldom effected.—*Hastam.*

MEDICAL GAZETTE.

FRIDAY, MAY 16, 1845.

It is with no slight feelings of satisfaction that we can congratulate our readers on the prospect of the differences which have so long distracted the profession, being amicably arranged. It is, however, impossible to speculate at present upon the time at which this desirable consummation will be brought about. So extensive an alteration has been made in the new Bill, to meet the wishes of a large and respectable body of general practitioners, that we may almost look upon it, as a new measure. The Inceptorship in the Faculty of Medicine, upon the impropriety of introducing which, we have already had occasion to make some strong remarks, is entirely abolished. We contended that the Inceptor was nothing more than the Licentiate under another name, with a possibly less amount of knowledge, according to the University in which he received his degree, and with a higher status in the eyes of the public. In the course of his remarks, on Wednesday evening, Sir James Graham observed that some misconception had arisen with respect to the import of the twenty-third clause,—that the term "Inceptor" had better be avoided, and the term "Licentiate" substituted. This he admitted to be an important clause, especially as it related to the Scotch Universities, but there was no intention of giving any undue preference to them. It was further remarked, that "the Licentiates in the Scotch Colleges at *twenty-two*, on passing not only their examination before their University, but undergoing a strict examination before a Board composed of the College of Physicians and Surgeons in Scotland, are fairly

entitled to all the benefits of general practitioners throughout the United Kingdom." Upon that point we do not think there can exist the least reasonable doubt, especially as the admission was accompanied by the statement, that the justice of the measure depended entirely upon the standard of acquirement being fairly maintained; by which we understand, although the terms might have been a little more explicit, that the Licentiatehip shall not be obtained except upon one standard of qualification,—that no indirect advantages shall be given to any College or University in one part of the empire, over those possessed by other Colleges and Universities.

We learn further, from what transpired on this occasion, that there is every disposition on the part of the Scotch Universities to fix the standard of qualification high, and being so fixed, to maintain it. The Council of Health are to have a controlling power over all the examinations instituted by all the chartered bodies in the kingdom. Assessors will be present at these examinations, and every reasonable precaution will be taken against any partiality being shown in the examinations, as well as to prevent any inequality in the standard of qualification demanded of the candidate. These plans, if fully carried out—and we have no reason to doubt the existence of a *bonâ fide* disposition to carry them out—will at least remove those differences which had sprung up between the English and Scotch Colleges, respecting the qualifications of candidates under the second edition of the Medical Reform Bill.

The twenty-third clause will therefore be completely remodelled. Three classes of practitioners will now be formed—physicians, surgeons, and general practitioners. The privileges of physicians now practising as such, will be preserved to them intact; so that

the measure will not have, as some of this class had supposed, a retrospectively injurious effect upon their interests. This end will be accomplished by modifying the system of registration. A physician licentiate, practising beyond the seven miles, will have the power of registering himself as a physician *extra urbem*; and during his life, he will be entitled to the full enjoyment of the exact privileges which he now possesses. In the same way, a Scotch physician now practising in England, will retain his existing legal right, but acquire no additional privilege by the new act.

It is intended that an important modification shall also be made in the thirty-fifth clause. In commenting upon the second bill, we had occasion to point out what appeared to us to be a singular omission, namely, that the clause was only prohibitory of the assumption of titles by unregistered persons—that a *registered* practitioner might assume the title of Surgeon or Physician, without violating the provisions of the measure. Sir James Graham proposes to place a restriction on this liberty, to the extent that any general practitioner who shall assume the title of "Doctor," without being at the same time a Member of the College of Physicians, shall be guilty of a misdemeanour.

In a few cursory remarks which we made on the proposed changes, in our last week's number, we adverted to the plan contemplated for the examination of candidates by the College of General Practitioners. It was expressly stated, that the entrance into the profession shall be by one portal only, whatever may be the future destination of the student:—"Every person who shall enter the profession, whether it is his intention to become a general practitioner, a surgeon, or physician, shall undergo an examination by *one* board, and the standard of competency shall

be common to all." From what was afterwards stated, it would seem that this is to be a joint board of examiners, composed of six physicians and six surgeons from the respective Colleges. This newly constituted board, which would appear to be in some respects subordinate to the Council of Health, is to have very extensive powers conferred upon it. Thus the control of the *curriculum* of education will rest with it; the power of admitting any individual into the profession, whether as physician, surgeon, or general practitioner, will rest entirely with it; for no candidate can be examined by any other College until this joint board has granted its permission. It thus has the complete control of the education of all who enter the profession, and a veto on the admission of any candidate into it. We fear that we here perceive the elements of a new difference between the Colleges and General Practitioners. The latter will most probably require to be represented in this joint board, for two reasons:—1. That the power of a veto should be fairly exercised; and 2. that they should have some control over the *curriculum* of education laid down for candidates whom they are required to examine. We think that this difference will admit of an easy adjustment by a little further concession on both sides; and for the good of our common profession, we hope that even the short interval now allowed for discussion, will suffice to bring about an amicable settlement.

TEMPERATURE OF THE BODY.

THE mean temperature of the body, according to Liebig, is in man $97^{\circ}7'$; in woman, $98^{\circ}2'$; in the child, $102^{\circ}2'$. The temperature in the mouth or rectum varies from $97^{\circ}7'$ to $98^{\circ}6'$; that of the blood is, according to Magendie, from $100^{\circ}6'$ to $101^{\circ}6'$. The lowest temperature observed in the body was $95^{\circ}5'$; the highest probably that mentioned by Sir George Lefevre, as observed by Dr. Currie, in a case of scarlatina, 112° . (No. 1, N. S. p. 9.)

Reviews.

A Collection of Cases of Apoplexy; with an Explanatory Introduction.
By EDWARD COPEMAN, Surgeon.
8vo. pp. 205. London: Churchill.
1845.

In this volume we have a record of two hundred and fifty cases of apoplexy, with an account of the post-mortem appearances in one hundred and fifty-six cases. The object of the author has been to present to the profession, in a concise form, a complete history of apoplexy, and, at the same time, to test the efficacy of the plan of treatment usually adopted, namely, blood-letting. The fact that the greater number of cases have been collected from other sources, and that comparatively few have fallen under the author's own observation, does not at all diminish the value of the work. The private practice of any one individual, however extensive, can never be expected to furnish the complete history of any disease. Large hospitals give an ample field for observation; but with respect to apoplexy we must still look to general practice for information: the patient, from a state of health, is often seized and cut off in an hour; whatever is done must be done on the spot; and he is either in a hopeless condition, or on the way to recovery, before he can be conveyed to an hospital.

The author appears to us to be a practical man, and we must do him the justice to say, that, by a generally careful selection of cases from good authorities, he has done more to illustrate the subject of apoplexy than any writer whose work we have as yet examined. He has allowed the cases to speak for themselves, appending to them no comments, but giving, in a preface, a concise summary of the results obtained. In these introductory remarks there is much sound practical information, and based as the conclusions are upon facts, there is enough to induce the practitioner to pause before he adopts the common mode of treatment, *i. e.* copious blood-letting. The author might appear to be going contrary to all experience to deny the efficacy of blood-letting in apoplexy, but still, reason points out that every mode of treatment must be judged by its

results. In the hands of some it may have succeeded; in the hands of others it may have signally failed: the only hope of explaining these differences, and of pointing out the most successful plan, is by the publication of a monograph of this description.

Apoplexy is commonly regarded as a specific disease; but in reality, as the author suggests, we must look upon it as an assemblage of symptoms having "especial reference to the circumstance of a person falling down suddenly, deprived wholly or in part of motion or sensation, and breathing with stertor." There is no doubt that a variety of diseased conditions have been included under the term apoplexy, and yet the same mode of treatment—blood-letting—has been uniformly employed in all cases. The causes which induce an attack of apoplexy are numerous, and vary much in their nature. The author arranges his results upon this head under twenty divisions, all of them illustrated by the cases which he has collected. Persons of all ages* are liable to the attacks of apoplexy, although it has been commonly considered as the disease of advanced age; yet here we meet with one of the many fallacies into which hasty statisticians have fallen in estimating the mortality of disease, *i. e.* of determining how many are attacked at one age compared with another, without taking into consideration the fact, that the average number of persons actually living at the two ages may be widely different. Mr. Copeman's analysis on this subject has enabled him to determine that there is less variation in the liability of different ages to the disease than is usually imagined, the preponderance being slightly in favour of the disease attacking persons "between the ages of 30 and 50." p. 3. The proportion of cases in advanced life appears large, because in reality there are *fewer* persons then living compared with the other periods. Males are more frequently exposed to the causes of apoplexy than females; hence it would appear, from the author's researches, that the proportion of males to females attacked with apoplexy is $2\frac{1}{2} : 1$. In a pathological view, the following remarks are interesting:—

"The morbid appearances found in persons who have died of apoplexy are exceedingly diversified, and by no means favour the idea that fulness of blood or rupture of vessels is always the cause of death. The number of deaths in which the post-mortem appearances are recorded is 156, and in 81 only was there extravasation of blood in the brain. In 10 cases there was found no diseased appearance of the brain at all, and in the remaining 65 the morbid appearances were, hypertrophy of the heart, disease of the aorta, softening of the brain, effusion of serum into the ventricles, or between the membranes, congestion of vessels in the brain, hydatids in the brain, inflammation of the brain, ossified arteries, abscess of the brain, diseased kidneys, brain hardened, cerebral vessels varicose, tubercle in the cerebellum, inflamed stomach, indurated liver, inflammation and ulceration of the small intestines, tumor in the brain." p. 4.

As we might anticipate, the mortality from apoplexy is fearfully great, showing either that the disease is beyond the reach of art, or that the present mode of treatment is very ineffectual. "Of the whole number of cases recorded (250) only 68 recovered, 7 partially recovered, and 175 died—a proportion of deaths to recoveries of $2\frac{1}{2}$ to 1." *ib.* Mr. Copeman next propounds the questions whether the mortality would be greater without any treatment at all, and whether the present plan of treatment, which has in its favour the sanction of all ages, and, we may add, the prejudices of all classes of society, should not be abandoned in a great number of cases in which it is now adopted? Science has already conquered one popular fallacy, namely, the plan of bleeding a person immediately on his meeting with a serious accident, as by a blow or a fall, and it is possible that the inapplicability of this remedy in many attacks of apoplexy may also be equally demonstrated by a calm discussion of facts. Let it be remembered, that in some cases no disease of the brain, no remarkable congestion or fulness, have been found after death; and how, therefore, is it, medically speaking, likely that blood-letting should, in such cases, be attended with benefit? The operation, it is true, is commonly resorted to in all cases of a sudden attack, because

* Dr. Campbell has lately reported a case, the particulars of which we shall probably give, where apoplexy from cerebral effusion occurred in a child eleven days old.

the disease is supposed to depend on an effusion of blood; and it is difficult to distinguish those cases in which there is effusion from those in which there is none. In answer to this, the author observes, even admitting that the attack is accompanied by extravasation, bleeding cannot remove the effused blood, and, so far from lessening the impetus of the circulation, the pulse rises, and becomes more full; from which he considers that extravasation may rather be promoted than checked. He shall, however, state his own views on this point:—

“The universal *remedy*, as it is called, for apoplexy is blood-letting; at least so generally has it been employed, that of 155 cases in which the treatment is specified, 129 were bled, and only 26 were not: of the 129 who were bled, 51 recovered and 78 died—the cures being 1 in $2\frac{1}{2}$, the deaths 1 in $1\frac{1}{3}$,—of the 26 who were not bled, 18 were cured and 8 died, the proportion of cures being 1 in $1\frac{1}{2}$, and of deaths 1 in $3\frac{1}{3}$. But the mortality varies a good deal according to the particular method in which blood-letting was performed. In 2 cases the temporal artery was opened; both died. In 11 cases cupping only was employed; 6 were cured and 5 died. Fourteen were treated by leeching; 4 cured and 10 died. Seventeen were bled in the foot, a plan strongly recommended by M. Portal, of which 13 were cured, and 4 died. Eighty-five were bled generally and copiously, of which number 28 recovered and 57 died; that is to say, two in every three cases terminated fatally. If we subtract the number of cases treated by bleeding in the foot, a plan of bleeding mild in its operation, and acting, probably, more on the principle of derivation than of materially lessening the quantity of blood in the system, we shall find that of 112 cases, 38 recovered and 74 died; reducing the proportion of cures to about 1 in 3, and increasing the proportion of deaths to 1 in $1\frac{1}{2}$.

“From these facts it appears that bleeding, generally speaking, is so ineffectual a means of preventing a fatal termination of apoplexy, that it scarcely deserves the name of a *remedy* for this disease. That where the temporal artery is opened the case terminates fatally; but as there are only two cases reported in which this method was exclusively employed, there are not suffi-

cient data for establishing the universal fatality of this mode of treatment; although it may be fair to conjecture that it is by no means desirable to abstract arterial blood from the brain. That bleeding in the foot was the most successful mode of abstracting blood. That the treatment without loss of blood was attended with the most success; and that the mortality of the disease increased in proportion to the extent to which bleeding was carried; the more copious the loss of blood, the more fatal the disease.” p. 6.

We cannot agree with him in his statistical conclusions, that blood-letting is on the whole more injurious than beneficial, for the reason that the results of bleeding are drawn from 129 cases, while there are but 26 cases in which bleeding was not resorted to. We can only fairly compare results by taking an equal number of cases. Here is a disease confessedly removed to a great extent from the powers of art to relieve it;—whatever mode of treatment may be adopted the mortality is undoubtedly great; and it is not improbable that if, instead of 26, we took 129 cases in which bleeding was not adopted (the true basis of a statistical comparison), the average mortality might not be found remarkably different.

The practical point to be considered is, what are the cases in which bleeding is indicated, and how are such cases to be identified; for in attacks of apoplexy the motto of “*bis qui cito*” applies more forcibly than in most diseases. Mr. Copeman lays down the following rule. “Bleeding should only be resorted to in plethoric habits, where a distension of the vessels of the brain is indicated by *fulness of the external vessels of the head*: and that unless we discover the latter, we are not justified in drawing blood for the relief of the supposed existence of the former.” p. 11. Further, the bleeding should not be carried beyond the point necessary to relieve the external visible fulness of vessels or congestion of the lungs from impeded circulation. Emetics should be given, when the attack has succeeded a full meal. In the apoplexy of old age, brandy and stimulants have restored the patient. He considers that when the pupils are at first very much contracted, and afterwards as fully dilated, it is a sign of fatal apoplexy.

It is not our intention to quote any of the collected cases, although some are of great interest, and appear to bear out the author's views on the subject of treatment. Those cases where no morbid appearances whatever were discovered in the brain, some of them extracted from Abercrombie's work, are of especial value as accounting for sudden death, without any pathological indication. We understand that in the post-mortem inspection made of the body of the late Professor Daniell, who died recently from a sudden attack of apoplexy, brought on probably, in a plethoric habit, by one of the causes assigned by the author, namely, "public speaking," no extravasation of blood or any other morbid change was perceived in the brain. The opinion is so universal that extravasated blood must be found, that instances of this kind deserve especial attention, where any doubt arises respecting the cause of death. In this volume ten such instances are recorded. We shall here subjoin some of the tables, which the author has derived from his collection of cases, many of which, we perceive, have formerly appeared in our own pages.

CASES.

Males.	Females.	Total.	Cured.	Relieved.	Died.
170	80	250	68	7	175

Proportion of males to females $2\frac{1}{3}$ to 1

Proportion of deaths to cases . 1 in $1\frac{3}{4}$

Proportion of deaths to recoveries, including those relieved $2\frac{1}{3}$ to 1

No. not bled, 26. Cured, 18; died, 8

No. bled . 129 — 51; — 78

No. of cases in which the treatment is specified 155

Proportion of cures in cases treated by bleeding 1 in $2\frac{1}{2}$

Proportion of deaths in ditto about 1 $1\frac{1}{2}$

Proportion of cures in cases not bled 1 $1\frac{1}{2}$

Proportion of deaths in ditto 1 $3\frac{1}{2}$

	No.	Cured.	Died.	Proportion of Cures to Deaths.
Temporal artery opened	2	2		
Cupping employed .	11	6	5	
Leeching	14	4	10	1 to $2\frac{1}{2}$
Bleeding in the foot .	17	13	4	$3\frac{1}{4}$ - 1
General & copious bleeding	85	28	57	1 - 2
	129	51	78	

No. of cases in which the age of the patient is recorded, 197.

Age.	No.	Cured.	Died.	Proportion of Cures to Deaths.
Under 20 years .	20	2	18	1 to 9
From 20 to 30 .	30	12	18	1 - $1\frac{1}{2}$
30 40 .	31	6	25	1 - 4
40 50 .	31	7	24	1 - $3\frac{1}{2}$
50 60 .	25	3	22	1 - $7\frac{1}{8}$
60 70 .	30	13	17	1 - $1\frac{1}{2}$
70 80 .	25	9	16	1 - $1\frac{3}{4}$
80 upwards.	5	2	3	1 - $1\frac{1}{2}$
Total	197	54	143	

No. of cases in which the post-mortem appearances are recorded, 156.

Hæmorrhage 81

No Hæmorrhage 75

inclusive of

Nodisease of brain 10

156

In these tables it will be seen that there is the same faulty application of statistics in relation to the effects of particular modes of bleeding, which we have already had occasion to point out. Admitting the similarity of the cases, it is impossible to draw any correct inferences from such unequal numbers. The value of a work of this kind must depend so essentially upon the authorities from which it is compiled, that we have been induced to examine it somewhat closely in this respect. Out of the 250 cases, 215 are founded on good and undeniable authority, 11 are derived from private practice, and 24 (including some taken from Darwin's *Zoonomia*) are of so dubious a character, that the author would have acted wisely in omitting them altogether. This compilation will be useful to those who wish to have a history of the symptoms, post-mortem appearances, and results of treatment in cases of apoplexy.

Practical Facts in Chemistry. 12mo. pp. 197. London, 1845. Simpkin and Marshall.

This little work is intended to initiate the beginner into the art of instructing himself in experimental chemistry. It professes to be a companion to certain portable laboratories, which are prepared and sold by Mr. Ede, of Dorking. As such, we see no objection to it, and

think that the author's purpose is, on the whole, very fairly carried out. Although the little volume contains many useful practical hints, extracted from other works, it is too superficial for the medical student, unless he take it up in the first year of his apprenticeship. Judging from the catalogue, the apparatus and materials appear to be well selected, and will allow, in a small compass, of the performance of numerous experiments. It is stated in the preface that every experiment has been tried by a professor of chemistry: if so, we must take leave to differ from him about some of the results, as well as about the method in which he recommends the performance of some dangerous experiments to a beginner.

Under the head of oxalate of ammonia (120), it is stated that oxalate of lime is distinguished from the sulphate by being soluble in nitric acid. This is no distinction, because nitric acid exerts a very strong solvent action on sulphate of lime, especially on boiling. But what follows is worse: the oxalate of lime is said to be known from the carbonate by its not being soluble in muriatic acid,—which is a decided error. If acetic acid had been substituted for the muriatic, and the character of effervescence in a carbonate indicated, a fair chemical distinction would have been made. At page 154, it is recommended to determine the ammonia in guano by liberating the gas through the agency of potash, and conducting it into muriatic acid, then to evaporate and weigh the muriate. It is not stated that in the evaporation of every ammoniacal salt, there is always a loss of ammonia—a fact demonstrated by the blue of litmus being invariably reddened on boiling or evaporating a neutral solution of muriate of ammonia tinted with that colour.

Among the experiments likely to cause dangerous consequences is the one recommended at p. 42; *i. e.* for breathing hydrogen. A chemist, not a *beginner*, has lately lost his life by this experiment, having unknowingly used sulphuric acid containing arsenic, of which there is still much on sale. The experiment should not have been introduced into such a work at all; and, as it is, the result we believe to be misstated—the voice sinks to a whisper instead of becoming shrill. The ex-

plosion of mixtures of oxygen and hydrogen, and of chlorine and hydrogen, is recommended to be performed in a soda-water bottle! These experiments thus performed in a narrow-mouthed vessel, would be very likely to be attended with danger. The success of a few trials does not justify the recommendation of such a vessel for these highly explosive compounds.

It is only fair to state, that there are fewer defects in this volume than we have ever encountered in works of a similar stamp. The reviser has added some recent processes—among others, the new and simple method of procuring oxygen on the lecture-table by heating powdered chlorate of potash with one-sixth of its weight of black oxide of manganese. We do not believe, however, that the result is so mechanical as he describes, for if his theory be true, sand would equally answer. We have made these remarks, as it is not improbable that the portable laboratories, the utility of which we do not dispute, will with this manual fall into the hands of some who are devoted to the private pursuit of this interesting science.

Hospital Reports.

WESTMINSTER HOSPITAL.

Case of Necrencephalus (red-softening), following a Cataleptic Paroxysm of three days' duration, preceded by Hysteria—Chlorosis, &c. By W. R. BASHAM, M.D., Physician to the Westminster Hospital.

SELINA POPE, æt. 20, in service, of a pale, leucophlegmatic and chlorotic aspect, but well formed, was admitted Feb. 15, suffering from amenorrhœa of five months' duration. The catamenia from the first always scanty, pale, and exsanguineous; leucorrhœa; anorexia; lassitude; general debility; frequent attacks of flatus, with borborygmi palpitation cordis, and globus hystericus. Bowels torpid; urine of low specific gravity, pale, limpid, and copious. Was treated with mercurial and resinous purgatives, with aloetic alteratives and valcrian; full diet, &c.

On the fourth day, had improved in appearance; the bowels evacuated daily, and the appetite was less capricious. She was then ordered the Mist. Ferri Comp., and continued the aloetic draught with ammoniated tincture of valerian.

On the sixth day, complained of headache, frontal and sincipital, which, during the

three following days, was accompanied by hysterical indications of ball rising in the throat, &c.; there were muscular twitchings about the mouth; the abdomen was very flatulent, and the urine limpid and copious.

On the eleventh and twelfth days, the headache continued, the patient hanging her head listlessly on her hand. She was not confined to bed, but moved about, and employed herself. The appetite had become indifferent, and the bowels torpid.

On the thirteenth day from admission, had an attack which exhibited all the characteristics of an hysterical paroxysm: the convulsions were trifling, and consisted of little more than twitches of the arms and corners of the mouth. This condition lasted five or six hours, and was succeeded by a perfect and well-marked cataleptic rigidity of the whole system. The tension of all the limbs allowed each extremity to retain any position in which it was placed. The jaw was fixed, but not perfectly closed. The eyes were glazed; balls fixed, and rigid; pupils faintly contractile. Total insensibility; pulse 80, moderately full; respiration quiet, and as of one asleep. Abdomen tympanitic. She was ordered turpentine enemata.

March 1st, fourteenth day from admission. —Tonic rigidity continued: there was copious sudoresis; perspired fluid emitting a very peculiar odour, like that of mice. Deglutition imperfect. The scalp was covered with a blister, and one applied to the nape of the neck.

2d. —The spasmodic rigidity continued, without relaxation, or any symptoms of convulsive movement, till the evening of this day, when gradual resolution of the tonic rigidity supervened. Faint indications of consciousness accompanied this relaxation; the power of swallowing fluids returned. The bowels evacuated copiously with flatulent discharges. Sinapisms were applied to the abdomen.

Hydrargyri Chloridum c. Scammonia administered; and Enemata with Tinctura Castorei.

3d.—Continued in a trance-like state: perfect quietude; respirations 28, as regular and easy as of one asleep. Total insensibility; unconscious of everything; external impressions, as irritating the more sensitive parts of the surface, unnoticed. Evacuations passed involuntarily. Skin continues to perspire freely, and to emit the same peculiar mice-like odour. Urine very copious and limpid. Pulse had risen much in frequency, 130, cordy and sharp. Dysphagia complete. The enemata and sinapisms were continued.

4th.—Pulse had risen to 180; respiration still quiet, not exceeding 28, and the patient lying like one in a trance, without motion, spasm, or convulsion of any kind.

5th.—Copious fæculent evacuations, with faint indications of consciousness, and a temporary power of deglutition, which continuing a few hours, was taken advantage of to administer jelly, beef-tea, and a little wine.

Hydrargyri Chloridum, gr. v. 4tis horis.

But by 2, P.M., these temporary indications of improvement subsided; deglutition again became imperfect. The pulse was not to be counted; skin still emitting the same odour; the excretions were spontaneously voided; and she gradually sank, and, without any convulsion or sensible change, died at 3 A.M. on the 6th of March; the 6th day from the supervention of the cataleptic seizure, and the 19th day from her admission into the hospital.

Sectio Cadaveris, 36 hours after death.—

Body well proportioned; mammæ well developed; surface wax-like, and exsanguineous.

Viscera of the Chest.—Lungs perfectly healthy, of a pale light ash-grey; heart was large, but proportioned in all its parts; no irregularity in any of its cavities or valves.

Abdominal Viscera.—All healthy in appearance. Uterus much congested; ovaries large, flaccid, and containing several minute vesicles of the size of mustard seeds, filled with transparent amber-coloured fluid.

Head.—Dura mater natural. The arachnoid was opaque, and retained some fluid beneath. The left lateral sinus, from its exit from the torcular herophili to its first curve downwards, was filled with a firm, dense cord of fibrine, which the vessel had moulded into this rounded shape; its character, that of fibrine spontaneously coagulated. The other vessels leading out of the brain exhibited no such appearance; their contents being fluid. The inferior part of the middle lobe of the left side presented externally a vivid purplish appearance of intense inflammation. The centre part was chocolate-brown, passing gradually off into a madder-pink hue. To the touch this portion was soft and pulpy, and the pia mater intensely injected. On making a section through this portion, the substance of the brain had degenerated into a dirty, dusky red pulp, surrounded by numerous dark red points, which could not be removed by scraping or washing; and from the largest a minute thread of coagulated fibrine could be detached, declaring the condition of these vessels identical with that of the left lateral sinus. The anterior and posterior lobes, as well as the middle lobe of the right, were free from morbid change. The hemispheres superiorly were natural; the corpus callosum normal. The ventricles contained some serum effused; the choroid plexus not altered in appearance. But the thalami nervorum opticorum were each in a state of pulpy softening; of a dirty, dusky red hue, exhibiting a characteristic

specimen of pure necrencephalus, surrounded by similar minute red points mentioned in connexion with the inflamed portion of the middle lobe. The corpus striatum of the left side was in a similar state of pure inflammatory degeneration; but that of the right side was not altered in appearance. The fornix, corpora quadrigemini, pons varolii, cerebellum, and spinal cord, were free from indications of inflammatory action; but just above the corpora mamillaria, and at the origin of the anterior crura of the fornix, there was a small patch of yellow softening, the colour of the part, gamboge-yellow, being more remarkable than the texture; the firmness of which was but little less than the unaffected portions of the brain: it emitted no offensive odour.

REMARKS.—This case must be considered interesting on several points:—

1. From the occurrence of such intense cerebral inflammation in a young woman, the characteristic state of whose system was, on admission, unquestionably anæmic.

2. The hysterical complication of the symptoms—such as represent the ordinary hysterical condition, globus hystericus, borborygmi, and headache, which preceded the cataleptic or tonic spasm.

3. The duration of the cataleptic paroxysm, enduring three days; not alternating with convulsion as usual, where the symptoms are indicative of cerebral disease.

4. The absence of all general indications in the previous state of health, or of any symptoms declaratory of a tendency or predisposition to cerebral disease.

With regard to the first point, this case exemplifies the danger and terrible consequences of inflammatory action supervening in a state of the system not inappropriately termed adynamic: in which the vital forces, deficient in power, are unable to oppose a resistance sufficiently effectual to control, or even modify, the destructive consequences of inflammation; and in such a case it may be questioned—supposing it possible to have it satisfactorily determined during life the extent and seat of the disease, as they were exhibited after death—whether any remedies could have arrested the fatal consequences: regarding this condition as asthenic hyperæmia. The existence of spontaneously coagulated fibrine in the large vessel of the left lateral sinus, and also in the minute vessels surrounding the diseased parts, attesting unquestionable evidence of this peculiar pathological condition.

The second point of interest is the precession of the hysterical symptoms. Violent and intense headache is so constant, so unvarying a symptom in chlorosis complicated with hysteria, that it is not surprising that its presence, as a symptom indicative of threatened inflammation of the encephalon,

should have been at first disregarded; and still less so, when the globus hystericus, and tympanitic state of the abdomen, aided by their presence to mask the indications, that headache, obstinate and continuous, might individually have suggested. When we recollect the intense headache that, whether permanent or intermitting, so constantly accompanies disorder or deficiency of action in the uterine function, we cannot claim for the cephalalgia in this case any great importance as a pathognomonic symptom: and when observed existing in conjunction with symptoms unquestionably of a purely hysterical character, we must acknowledge the premonitory, or rather the precursory indications to have been most anomalous and inexpressive. But although the conditions already alluded to are defective as indices of cerebral disease of such intensity, a deeper reflection on the intimate relation and sympathy existing between the sexual organs and the brain, especially at or about puberty, will convince us that the cerebral disease had an undoubted connexion with the previously existing uterine disturbance. Although such intense and fatal lesions of cerebral structure are rare in connexion with mere uterine derangement, yet the many, and various, and anomalous instances that we daily witness of nervous irritation and cerebral excitement accompanying, and apparently dependent on, uterine irregularity, are abundant evidence of the relationship of these two conditions.

Cataleptic, epileptic, even tetanic paroxysms (opisthotonos), hysterical convulsions, even partial paralysis, temporary and evanescent, affecting such organs as the eye and its appendages,—as dropping of one lid, or of the voice, inducing aphonia, or affecting the muscles of deglutition, hysterical dysphagia, as well as many other anomalous symptoms, at one time indicative of cerebral, at another simulative of spinal lesion—as temporary and partial paralysis after hysterical fits, are far from being unusual or unfrequent in females suffering from functional uterine disease. These symptoms are all unquestionably excited by an irritation, or some condition that secondarily affects the encephalon or some portion of the cerebro-spinal system. Serious as are the train of symptoms now casually hinted at, and often present in these utero-spasmodic diseases, often as they are considered hopeless and incurable, nevertheless ultimate recovery most frequently takes place without any distinct manifestations of permanent organic injury. The succession of the symptoms, as well as their character being identical in cases terminating favourably, and in those ending fatally, and the lesions observed in this fatal case being sufficient to explain all the symptoms as they became developed during life, and there being no difference up to a certain point in

the train and course of the symptoms in this fatal case, and in others exhibiting the same hysterical and cataleptic paroxysms, who subsequently recovered (for catalepsy, though unfrequent, is generally preceded by hysteria). Are we warranted, then, in admitting that the same irritation (or state of the system), differing only in intensity or degree, exists in all such utero-spasmodic cases: in the mildest hysterical spasm, as well as in the fatal case just recorded, where the organic lesions may be taken to express the maximum of this pathological condition?

If such conclusions are just, a most important question issues:—can we distinguish by any certain and unerring character the amount and extent of this condition, so as to determine safely where mere functional disturbance of the cerebro-spinal system exists, and where the more terrible and fatal organic lesions succeed; and whether, if determinable, any plan or principle of treatment can arrest the frightful consequences exemplified in the case now recorded?

With regard to the duration of the cataleptic spasm (tonic rigidity) of three days, uninterrupted by solution or convulsion, and terminating in relaxation, probably general paralysis,—acquainted as we now are with the condition of the brain during life, its uninterrupted continuance must be regarded as dependent on the extensive lesions proceeding in the nervous centres. But are we to regard a continuous or lengthened cataleptic spasm as always dependent on such organic mischief? Unquestionably not,—although we admit the condition preceding that organic mischief to be identical; for there are cases recorded of catalepsy or tonic spasm, (tonic rigidity of the muscular system,) of many hours, and even of some days, duration, terminating favourably with but trifling medical assistance; indeed, the general notion of the alliance of catalepsy with hysteria declares the amount of danger implied in the general prognosis of the disease to be unimportant. It may be argued that what has been here called cataleptic paroxysm, was not catalepsy in the general acceptation of the term; it may be said that this tetanic or tonic rigidity was but the ordinary precursor indicative of intense inflammation of the substance of the brain; expressing by its duration the extent and severity of the cerebral mischief. But I cannot disregard the concomitant and pre-existing symptoms of hysterical spasm. I cannot overlook the chlorotic aspect, and general symptoms characteristic of anæmia, together with the age and previous history of the patient; circumstances not favourable to pure inflammatory hyperæmia. Therefore, we must consider the train of symptoms as expressive of a succession of effects springing from

certain predisposing causes, inseparably allied to, and dependent on, a condition of the system, of which uterine derangement, chlorosis, and anæmia, were in this case the express and necessary exponents; or, in other words, the same remote causes, which predisposed the system to exhibit the chlorotic and anæmic aspect, produced a state of the system incapable of resisting the influence of asthenic inflammation excited in the cerebral mass by the irritation to which it was subjected, obedient to that powerful sympathy, which, at certain periods of life, and under peculiar conditions of the body, manifests itself between the uterine organs and cerebro-spinal structures. From this it is inferred that the sources of cerebral irritation were the same, differing only in intensity, that produced the hysterical, and, continuing unresisted, excited the tetanic rigidity, here designated cataleptic paroxysm. And, also, that the pathology of all utero-spasmodic diseases should be referred to the amount of irritation, and probable consequent congestion to which the cerebro-spinal centres are exposed: this irritation, by reflex action, transmitting its influence to the agents of muscular contraction, and thus producing the spasmodic conditions exhibited in hysteria; and that the proximate cause of this spasmodic disturbance may exist in various degrees of intensity; represented in the mildest form by a mere morbid excitability or nervous sensibility; in greater force by common hysteria; and being yet more intense by the pure cataleptic paroxysm; and in yet greater intensity, may terminate in extensive organic lesion; and, lastly, that this state of the nervous system, whether simple congestion or not, represents a form and amount of irritation, which may either quietly subside, the proximate cause ceasing, or, not existing in sufficient intensity, or continuing and proceeding in a maximum of intensity, with a deficiency of power in the system, may, and does terminate in the destructive products of unresisted inflammatory action.

There remains yet one other point of interest to consider. Supposing that during life the actual state of the brain, and the seat of the inflammatory mischief, could have been determined, could the ordinary modes of treatment in similar suspected cases of inflammation of the substance of the brain—blood-letting, mercurials, purgatives, cold applications, blisters, &c. &c.—be relied on? I am inclined to think not. All depleting agents—all debilitating measures, in similar cases of chlorotic anæmia, are injurious and baneful. On the other hand, would iron, tonics, and mild alteratives, and other agents favourable to the process of hæmatisation, induce any better effects, by imparting to the system powers

of resistance and conditions to oppose the destructive tendency of the inflammatory asthenia? Experience teaches us that such cases of anæmia in females, evidenced by chlorotic aspect and general want of power, both in the assimilative and many of the secretory organs, as well as in their physical constitution generally, with proneness to spasmodic disturbances—hysterical, cataleptic, or local nervous affections simulative of neuralgia—attacks sometimes characterized by partial and temporary paralysis of an arm or hand, or dropping of an eye-lid, or with loss of voice—hysterical aphonia, &c. &c.—can only be successfully treated upon principles which promote the process of hæmatisis, and in fulfilling this indication, imparting a tone and vigour to the vis vitæ, which enables it successfully to oppose those destructive agencies of asthenic hyperæmia in central and important organs, which, if unresisted, rapidly terminate in death.

ST. GEORGE'S HOSPITAL.

Complete Absorption of the Lens four years after the operation of Keratonixis. By HENRY LEE, Esq.

CHARLES WHALE, æt. 23, was admitted a patient into St. George's Hospital, in the summer of the year 1841. He had at that time a cataract in the right eye, which he stated had been produced by a slight blow from a switch some time previously. The lens appeared of a pearl white colour, divided by radii of a greater degree of opacity.

Mr. Babington, under whose care this patient was placed, introduced a needle through the cornea, and lacerated to a slight extent the anterior capsule of the lens. This operation was subsequently repeated, and the opacity gradually and entirely disappeared. A considerable degree of vision was restored, but as the sight of the left eye was unimpaired, the affected eye was subsequently little used. This patient was again admitted into St. George's Hospital upon the 1st of January, 1845, and died of phthisis on the 20th of April following. In examining the eye, which had formerly been the seat of cataract after death, the following appearances presented themselves. Immediately behind the iris was a circular layer, of a pale whitish semi-transparent colour, and possessing a considerable degree of toughness. This was evidently the remains of the anterior capsule of the lens, and presented in its centre an irregular aperture with puckered edges, about the size of a dilated pupil. The posterior capsule of the lens could not be distinguished. The situation of the lens was occupied by a perfectly transparent fluid,

in every respect resembling the aqueous humour of the eye, with which it freely communicated through the aperture in the anterior capsule above described.

Correspondence.

A HOMŒOPATHIC CASE.

[It is not long since we called attention to the "*laissez mourir*" system of treatment, which is known under the name of *homœopathy*, and which, unfortunately, still finds its dupes, among those who are driven to despair by a candid medical opinion.* We have great pleasure in inserting the following communication from Mr. Jones, of Upper Clapton. The facts speak for themselves. ED. GAZ.]

SIR,—In my youth I was taught to believe that miracles had long ceased to be performed; yet, in this nineteenth century, miracle-mongers, though not so prolific of gross and palpable deceptions, are more prodigal than ever of subtle and refined deceits. Medicine and surgery are so especially beset with them, that the scientifically educated physician and surgeon run some risk of being banished from society. The name of these all-healing wonder-workers is legion; and the health and life of misled multitudes are daily consigned to their "learned ignorance" and presumptuous care. The followers of Hahnemann, Morison, and Priessnitz, ranged respectively under the flaunting banners of homœopathy, hygeism, and hydropathy, flock to the standard of quackery, and form the main army of charlatans; whilst a belief in patent medicines, or brandy and salt, in mesmerism or magic, in chrono-thermalism or conjuration, or in some other -ism or -pathy with an equally logical prefix, stimulates a host of lighter enthusiasts to swell the camp, in the capacity of skirmishers or suttlers.

Besides that desire for novelty, and that love of marvel, which have always proved such powerful excitants to the public mind, there are two striking peculiarities in its present condition in reference to medical subjects: one, the wide-spread existence of a superficial knowledge of these topics; the other, a spirit of individual inquiry or *inquisitiveness* in regard to the same. Cleverly availing themselves of these peculiarities, modern charlatans bedeck their marvels and novelties with rags torn piecemeal from the robes of science; and, at the same time, strive to invest them with a plausible and

* See page 804.

popular simplicity of style. In this way they at once attract, impose upon and gratify the excited and admiring public. The borrowed tinsel of a garbled philosophy dazzles and captivates the uninformed sense of society; whilst the assumption of an air of simplicity encourages and feeds the awakened curiosity of individuals, and laying fast hold of *that every-man-his-own-doctor* mania, which is spreading through the length and breadth of the land, enlists the morbid feelings and crude judgment of the patient himself in the cause of quackery, and makes him *particeps criminis* with its professors, against himself. This point once attained, the victory is easy of accomplishment. The multiplication and glorification of success, an oblivious silence as to failure, an abundance of promises, an undaunted assurance, an untiring volubility and a winning urbanity of manner, will speedily gain the confidence of the sick and the simple, the credulous, the enthusiastic and the yielding; and thus there is fostered and supported in modern society a body of adventurers, as numerous and influential, as pernicious and prosperous, as were their ruder prototypes of the dark ages.

Doubtless, so long as mankind continues to be credulous and superstitious (and superstition and credulity will last whilst ignorance prevails) innumerable charlatans will continue to profit by its folly, and prey upon its misery and weakness. Whether direct legislation could avert these natural consequences of ignorance (consequences which, it is true, act somewhat as its punishment and check), or whether it should attempt to do so, are matters on which opinions may differ; but, so long as the legislature hesitates or declines to interfere, it is the duty of every public man to seek all possible means of lessening such serious and growing evils;—and it is especially incumbent on every earnest member of the profession to aid in their mitigation, by the exercise of his talents, in the discovery and promulgation of truth; and by the fearless exposure of detected ignorance, or unmarked pretence. Systematically to lay bare, and vigorously to oppose, the numerous fashionable quackeries of the day, is a task for which the members of our profession alone are fitted; and yet it cannot be denied that we may be justly accused of apathy and inaction in the cause. Formerly, when the dicta of the physician and surgeon were followed without a moment's doubt, no special interference on our part might be needed; but now, when the public are partially—and, ah! how partially enlightened,—when they are impelled to curious inquiry, and are anxious to arrive at some conviction for themselves,—we are bound to afford them all the aid and instruction in our power; and,

as the proper and best qualified guardians of life and health, to take care at least that the truth in regard to these matters be not stifled; and that society shall have sound materials on which its judgment may be formed. In what manner this could most effectually be accomplished I am not prepared to say, but the occasional publication of authentic cases treated according to one or other of the miserable quackeries of the time, could not fail to be in some degree useful; and it is on this consideration that I forward to you for publication the following striking and peculiar case.

On the 7th of July, 1843, I was requested by Mr. H—, a gentleman of high literary reputation, to visit his son, an interesting and intelligent youth, eleven years of age, whom I found lame, and lying upon the sofa, from the effects of a tumor situated just above the right knee. The history of the case was as follows:—

Some time in the month of March 1843, when at school at Heidelberg, in which town his parents were then residing, he was accidentally pushed down, whilst at play, by one of his companions, and fell from a height of about a yard, alighting with considerable force upon the soles of his feet. He immediately felt a pain in his right knee, and he limped in walking for several days afterwards. The accident was treated as a sprain, and the knee rubbed with soap liniment, but the pain and lameness still continuing, advice was obtained from Dr. Chelius, of Heidelberg, who, at first, as was natural, also considered it to be a sprain, and confined the patient to his bed. The parents now left Germany for England, and entrusted their son to the care of Dr. Chelius, requesting him to write if the case did not progress favourably; and of course considering the accident to be of a trifling nature. Some weeks elapsed after their arrival in London without the receipt of any intelligence from Dr. Chelius, but, at length, in June 1843, they learned, after much anxiety and trouble, that the knee had become greatly swollen, and occasioned considerable suffering, notwithstanding the application of leeches, and the internal use of mercury, iodine, and other appropriate remedies; and further, that Dr. Chelius believed the disease would terminate in a fungoid ulceration. Mr. H. at once proceeded to Heidelberg, and brought his son back with him to London. He was then recommended to consult Mr. Liston, and was much concerned at receiving an opinion from him that amputation of the limb would alone afford a chance of prolonging life. It was a few days after this (on July 7th) that I first visited the patient, and his condition and appearance on this and my subsequent visits are sketched in the following account.

The boy was of a fair complexion, and of a nervo-sanguineous temperament; he was already much weakened and emaciated; his skin had a delicate pallid hue; his countenance was rather wan and anxious, and he had occasionally a hectic flush upon the cheeks. The pulse was generally quick, and rather weak. He had no cough, and indeed no pulmonary symptoms. The tongue was usually furred with white, the appetite copious, and the digestion impaired; he had occasional diarrhoea, and the urine frequently contained copious deposits. At first sight, the tumor somewhat resembled a white swelling, but on examination the knee-joint was found to be free in its movements, and, judging from the absence of symptoms, was not implicated in the disease: on the contrary, the enlargement, which was about the size of a common cocoa nut, was limited to the lower end of the femur, and appeared to involve the substance of the bone, between the two condyles. Its surface was tolerably even, and its substance firm, though softer in some places than in others. The integument was here and there of a slight purple hue, and large cutaneous veins coursed over the surface of the tumor. There was no acute pain, but a general sense of uneasiness; at the same time the patient had an extreme dread of its being touched in any way whatever.

Now, the origin, seat, and rapid progress of the tumor, its exciting characters, the local and constitutional symptoms accompanying its growth, and the cachexia induced by it, were sufficient to excite a suspicion that it either possessed, or would eventually assume, a malignant character; and all these circumstances, added to the youth of the patient, rendered probable the supposition that it was a medullary or encephaloid growth, which had commenced either in the periosteum or in the femur itself, and which, pursuing the ordinary course of that disease, would end in a fatal fungus hæmatodes. With so formidable a diagnosis and prognosis, I felt anxious for a consultation with some one of greater experience than myself. The parents being strongly averse to the idea of amputation, felt unwilling to consult Mr. Liston again; and the opinion of Mr. Key was therefore obtained. That gentleman held out little or no hopes of recovery, but advised gentle pressure and support to the tumor, by means of mercurial and afterwards of lead plaisters, and ordered tonic medicines and a nutritious diet. For several weeks this plan was pursued, without any good result; and at a second consultation, Mr. Key gave an opinion that even amputation would not be beneficial.

The extreme anxiety of the parents, and the seeming hopelessness of the case, prevented the desire, and forbade the attempt on

my part, to influence them further in the choice of any advice they might wish to obtain; and when Mr. H. proposed to consult a homœopathic practitioner, in whom he had some confidence, and particularly requested me to meet him, I assented to the proposal. Accordingly, on the 12th of October last, I met Dr. —, and was greatly surprised to hear him declare unhesitatingly that he could cure the disease. At this time, be it observed, the tumor had attained such a size as to encroach upon the greater part of the thigh; its surface was slightly lobulated and discoloured; and on the inner side of the wasted limb, a hardness was gradually extending upwards, as if the soft tissues were now becoming involved by contact in the disease, and had become the seat of cancerous deposit. The glands of the groin much enlarged, and painful. The general weakness and emaciation were extreme; the constitutional irritation had increased; the peculiar cachexia was more marked; and the real nature of the disease was now clearly developed. Dr. —, however, was full of confidence, and said that a cast of the tumor should be taken; remarking, that "otherwise the profession would not believe, when he had cured it, that the disease was so formidable." *Arnica*, he stated, would produce the disease, and would therefore cure it. He ordered a bread and water poultice, to which was added a few drops of tincture of *arnica*, to be applied to the tumor three times a-day, and a few drops of the same tincture to be taken internally twice a-day. Nothing could exceed his confidence whilst asserting his ability to cure the disease. He promised to make a convert of me, and enable me to cure the whole parish. His manner was that of a superior being,—some hero or demigod, who condescended to hold communion with those misguided men who ignorantly practised allopathy! His plan was to produce a *friendly* supuration, and ultimately a radical cure.

This was my only interview with Dr. —, but I still continued to watch the case. I need hardly say that the infinitesimal doses had no real effect on the disease, but that the patient grew steadily and constantly worse. *Hepar sulphuris* was substituted for the *arnica*, but the tumor continued to increase, and the body wasted away. During all this time I understand that the doctor expressed himself perfectly satisfied with every symptom; and that when, in the natural course of this formidable disease, the skin became involved and ulcerated, and a sanious fœtid discharge ensued, he was so delighted that he actually skipped for joy! Still the case went on, week after week; the constitutional powers yet resisting the ravages of the disease, now accompanied by hæmorrhage, supuration and gangrene.

On Friday, March 8th, 1844, I saw the patient immediately after the poultice had been removed, and on going up stairs, could not fail to recognize the peculiarly offensive smell so characteristic of an open and gangrenous cancer. I was told that Dr. — was that day expected, and I promised to call the next morning to examine the state of the limb, and to hear what his opinion might now be. I did so. Large sloughs had been thrown off from the substance of the tumor; extensive ulcerated surfaces were exposed; the femur itself was visible; and the discharge was most copious, offensive and unhealthy. The boy was sinking, and it was evident that the vital powers must soon succumb to the disease. According to expectation, the doctor had called on the preceding day, and, to my great astonishment, I was informed that he still considered the symptoms favourable, and stated that the mortified parts would be thrown off, and new flesh and bone generated. The little patient had requested his father to ask permission for him to drink coffee and effervescing draughts; which he called phiz-gig. The request was made in his presence, and Dr. — walked up to his bed and told him, that if he (the doctor) had given him up, and thought his case hopeless, he might allow him to gratify his wishes; but as he intended to cure him, he could not allow either coffee or phiz-gig. This was on the 8th of March. On the 12th, at 8 A.M., the patient died. Dr. — was informed of the result, and briefly replied, that we were all in the hands of Providence. No post-mortem examination was made.

It is unnecessary to add much, by way of comment, to the preceding narrative. Though in its origin sufficiently obscure, the disease rapidly developed itself, and was soon completely unmasked. The opinions given by Dr. Chelius, Mr. Liston, and Mr. Key, were all in harmony. Mr. Liston suggested amputation, at one period, as an only chance. Mr. Key, a short interval afterwards, believed that even *that* would be of no avail. At a time when the intractable nature of the disease had thus been distinctly manifested and pronounced, the case was seen and undertaken by a homœopathic practitioner. For five months the patient gradually declined, under the effects of a malignant disease; and through the whole of that period the doctor declared himself quite satisfied with the progress of the case. He never doubted or hesitated for a moment, but, as each more and more serious symptom appeared, expressed himself as more and more pleased; and when the patient became a living skeleton, and the thigh a mass of putridity, stated that there was not a bad symptom, and promised to conduct the case to a successful issue!

On what hypothesis such extraordinary conduct can be explained, I will not attempt to determine; but will merely observe, that the careful perusal of this and similar cases—for I hear it is not a solitary one—should prove a severe lesson to all who, in the exercise of charlatanism, display incredible ignorance and astounding imposture,—and a stern monitor to those who are in danger of being misled by the one, or sacrificed to the other.—I am, sir,

Your obedient servant,

JOHN JONES.

Buckleugh Terrace,
Upper Clapton, March 1845.

Selections from Journals.

PATHOLOGY.

SENILE GANGRENE.

A SHORT time since, the subject of gangrena senilis, or, as it is commonly called, Pott's gangrene, from its having been first accurately described by that surgeon, became the subject of discussion at the Surgical Society of Ireland. Mr. Carmichael detailed the case of a gentleman, about sixty years of age, in whom, when consulted in November last, he found the disease had commenced in the toe next the large one, which was black, and as there was no pulsation either in the femoral or external iliac artery, the former of which vessels felt like a hard cord, the nature of the affection was quite clear. The gentleman had lived well and comfortably, but not to excess. He had, at no time, felt much pain, but there was considerable derangement of the constitution, and the pulse had been at all times irregular; latterly, too, he was in an eternal state of anxiety, with a sort of distressing feeling that he was unable to describe. Within a few weeks of his death, his head became affected, delirium being almost constantly present. During the last few days of his life he became greatly emaciated, and had great difficulty of breathing, frequently gasping for breath. The extreme emaciation and general derangement of the system did not probably arise from the gangrene, but from a gradually increasing obstruction to the circulation of the blood, and consequent affection of the nervous system. In the treatment opiates were the principal remedies used, morphine having been given in doses of half a grain or a grain two or three times a day; and from this medicine alone did the patient obtain the slightest relief. The state of anxiety surpassed anything he had ever witnessed. In consultation with Sir P. Crampton, Mr. Cusack, and Mr. Adams, all were under the impression that the disease might have arisen from arteritis (the opinion of Dupuytren), and with this view of the case, leeching was

tried, but not general blood-letting, as Dupuytren has recommended. The leeches were applied along the course of the femoral artery, but not within several inches of the mortified parts. This treatment, however, was not attended with any advantage; quite the contrary, and it was found necessary to let the patient return to his usual mode of living. At the end of January the gentleman died. Upon examination post-mortem the heart was found in a state of fatty degeneration, very deficient in muscular fibre, and appearing evidently to be incapable of performing its functions. How far this condition of the heart was concerned in the production of the disease, might be a useful question for consideration. The liver, also, was diseased, having a pale ash-coloured aspect; and so soft, that, with the slightest pressure, the finger passed into its substance. In the kidneys there was found a tendency to granular disease, though not actually amounting to that. In the left iliac artery—the side first affected—he could not say that *any sign of inflammation* existed, but it was plugged up with fibrin even to the bifurcation of the aorta. There was no appearance of this sort in the iliac artery of the right side; but at the commencement of the femoral, the same fibrinous deposit was found; and in this artery, too, no pulsation could be felt three or four days before death. The femoral and iliac veins were also plugged with fibrin. Mr. Carmichael directed the attention of the Society to the absence of signs of inflammation along the course of the vessels; as here was a question of great importance in treatment. Dupuytren, looking upon the disease as an inflammatory affection, treated it by general blood-letting, and in a few cases with success. Pott was inclined to attribute the disease to the deposition of osseous matter in the arteries in persons of advanced age; but in such persons depositions of this kind are to be found every day, and yet this disease is absent. Mr. C. then referred to two instances in which persons affected with diabetes mellitus, died from gangrene of the foot. Dr. Hutton detailed the case of a patient, between 50 and 60 years of age, who at first complained of severe pain in the groin, extending down the course of the femoral vessels, with extreme tenderness to the touch. In a day or two after, the artery felt like a hard cord; the patient complained of severe pain in the limb, with inability to move it, and insensibility so great that pinching or forcible pressure upon the limb was not felt. It did not swell, but assumed a mottled appearance of various hues; the patient suffered extremely from a sense of burning heat in the limb, though its temperature, at one time, was found to have fallen below that of the surrounding at-

mosphere; however, it soon reached that of the ward in which he lay, namely, 66 degrees. At the post-mortem examination, there was found in the aorta, above its bifurcation, a colourless clot, containing in its substance a thick brownish fluid, resembling pus mixed with blood; a plug of yellow albuminous matter filled the external iliac artery up to the bifurcation of the aorta; the lining membrane of the arteries had a roughened appearance, having lost its usual smoothness and polish, and the vasa vasorum were found much engorged. Carswell says that in some instances the disease is attributable to coagulation, without inflammation; however, it appeared to him (Dr. Hutton) that in the present instance the plugging of the vessels was due to inflammation.—Abridged from the *Dublin Medical Press*, Feb. 19th, 1845.

[The error fallen into by the Dublin surgeons with regard to the true nature of the disease, and the means by which it should be treated in Mr. Carmichael's case, and the opposed nature of the facts adduced at its subsequent discussion in the Surgical Society, from a very remarkable parallel to the conflicting surgical evidence in the late trial of *Baker v Lowe*.

Although some comments on this case appeared in our columns at the time, we conceive that the importance of the point as a pathological question renders it a matter of interest to place the evidence of the surgeons at the trial in juxtaposition with the facts elicited in the above discussion.

The following particulars are abridged from the report published in the *Times*, the accuracy of which, we believe, has not been disputed.

The plaintiff was a surgeon, and the defendant a retired officer. About two years previously, the defendant, who was then, to all appearance, a vigorous and healthy person, was seized with a pain in his toe, and he was attended by the defendant. The disease was spontaneous or constitutional gangrene (but we believe that the precise nature of the symptoms did not appear in evidence), and the treatment adopted was of a stimulating kind—brandy, meat, and wine, being frequently given by the defendant. The affected toe was removed, but the disorder did not abate, and it subsequently involved the foot. A London surgeon was consulted, and this gentleman recommended a sedative plan of treatment, with abstinence and rest. The disease, however, continued to make progress, and ultimately the foot was amputated by the gentleman last consulted.

Upon the defendant's recovery, he refused to pay the whole amount of the plaintiff's bill, upon the grounds that the number of

his visits was unnecessarily great, and that the charge for each visit was too high. Several medical witnesses, including three distinguished hospital surgeons, were called on the part of the plaintiff, to shew that the treatment was proper, and consistent with the principles of good surgery. They concurred in stating that spontaneous gangrene was not the result of any previous external injury to the part affected, but the result of a debilitated constitution, and that such a state of debility as would induce it may co-exist with the appearances of health and vigour in the patient; that it may be, therefore, proper, in such a case, to administer stimulating medicines, and to allow stimulating diet, to a person so affected, if, in all the circumstances of his actual condition, he seemed to require it; that the propriety of continuing that sort of treatment would depend upon the continuance of any circumstances which may have rendered it originally proper; and that the alteration of such treatment, and the substitution for it of another, would not of necessity imply that the preceding treatment had been wrong. With regard to the amputation of the toe, the necessity for this operation would depend upon the state of the disease at the time.

The surgeon who amputated the limb stated, that had there been great heat and redness of the toe previously to its becoming dead (of which no evidence was given), he might possibly have adopted an opposite mode of treatment to that pursued by Mr. Baker, and he would at once have recommended an opposite diet, and abstinence from stimuli. In regard to the amputation of the toe, he gave it as his opinion that if the mortification had stopped, and a line of separation had been fairly established between the living and dead parts, no harm could have resulted from removing the toe beyond this line.

On the part of the defendant, three other eminent London surgeons were called, and they expressed a decided opinion that the administration of brandy, meat, and wine, was totally improper, as it would tend to increase the inflammation and extend the disease. In the circumstances under which the toe was cut off, the amputation was the very worst course that could have been pursued, as an operation for such a disease in the part would have a tendency to make it spread further. The proper course to have been followed was the mildest and most soothing local applications, accompanied by general abstinence and rest, relying upon nature for a separation of the affected part. The operation of amputation ought not, as a general rule, to be had recourse to at all in spontaneous gangrene, as the effect of using the knife even in the healthy parts is usually to produce mortification in them. In the

present case, the necessity for cutting off the foot appeared to have been the result of amputating the toe, and of the stimulating treatment to which the patient had been subjected. One of the plaintiff's surgical witnesses inferred that had the case been properly treated the mortification would have been limited to the toe, and the most judicious course would have been to have left the separation to nature. In his opinion the treatment of the case was totally improper.

The judge left it to the jury to say whether the defendant had been improperly or injuriously treated by the plaintiff. They found that he had not shown any want of proper skill, and returned a verdict in his favour, allowing, however, only five shillings for each visit.

In a letter explanatory of his evidence, the witness whom the plaintiff had called into consultation, and who had removed the limb, further states, that in constitutional gangrene the exhibition of stimulants with opium is the method which has generally been pursued by medical practitioners. He had, however, seen fit to follow the opposite plan in very many cases, and had advocated this mode in his surgical lectures for several years past.

Now it is of course evident, that with regard to the nature of the treatment which it was really proper to adopt throughout the course of this individual case, both these sets of witnesses could not have been in the right. Still, as the exact characters of the earlier and later symptoms of the case are no where expressly stated, it would now be almost impossible, in the absence of such statement, to decide which would have been the most appropriate plan of treatment in that particular instance.

Taking into account, however, the great surgical experience of all the witnesses, and the nature of the arguments which they adduced, it appears very clear that, as applied to certain particular forms of the disease (irrespective of the case under consideration) their several conclusions were pathologically just, and that neither party was actually in the wrong.

Simply regarding the evidence itself, we should apprehend that the witnesses upon the one part spoke distinctly with regard to the treatment which they thought appropriate in that particular case; while those upon the other side gave their opinions as derived from their experience of such cases generally, or from having, in their own private practice, chiefly met with instances which were similar or dissimilar, as the case might be, to that under litigation.

It appears to us that the great differences of opinion that have arisen among surgeons with regard to the proper mode of treating

senile gangrene, depend upon the existence of two distinct forms of that disease. The first of these is, in its onset, essentially inflammatory, being attended with the sudden appearance of redness over the parts about to suffer, and a sensation of burning heat, with pain along the course of the main arteries of the limb, shortly followed by their obliteration by solid coagula. It often appears to be immediately attributable, even when occurring in very aged persons, to circumstances which strongly affect the temperature of the part, or to slight injuries. The form of arteritis, which is its main characteristic, may occur at any period of life from various constitutional causes, among which deterioration of the fluids, consequent upon organic visceral disease, appears to be the most prevailing. The second type of the disease is more slow in its accession than the first, being unaccompanied by any distinct signs of acute inflammation; it is also attended with more or less deposition of coagula in the arteries. Its cause appears to be delay or impediment to the arterial circulation of the part it may arise from in great variety of influences, all of which, however, are of an obstructive kind. In both of these forms of gangrene the arteries of the part may have become more or less disorganized by previous disease in their tissues, but cases of either kind may be observed, in which the large arteries are nearly healthy. Still, in the senile form of dry gangrene, the minute arterial branches are always found more or less obstructed by earthy deposit, however free from such change the larger trunks may appear. It seems to have been in the earlier stages of the first type of the disease that Dupuytren, and other surgeons, recommended the use of leeches, &c. in the course of the arteries above the mortifying part, together with general antiphlogistic treatment. When the large arteries have become completely plugged with coagula, and the gangrenous action is confirmed, the symptoms of acute inflammation usually subside, and then it is probable that the continuance of lowering measures is injurious. As in the second form of the disease there is scarcely any evidence of inflammatory action, the gangrene principally depending upon mechanical causes, and there is generally a tendency to prostration of the system, antiphlogistic treatment appears to be altogether inappropriate.—*Ed. Gaz.*]

CHEMICAL PATHOLOGY.

ANALYSIS OF THE BLOOD IN A CASE OF EPILEPSY AFTER A LONG CONTINUED USE OF THE NITRATE OF SILVER. BY DR. HELLER. WITH REMARKS ON THE DISCOLOURATION OF THE SKIN PRODUCED BY THAT SUBSTANCE, BY THE EDITOR.

THE patient was a boy, aged 13 years, under the care of Dr. Bittner. He had taken for a period of five weeks, the nitrate of silver in a dose gradually raised from one to three grains daily, without the slightest appearance of discolouration of the skin. Dr. Heller wished to examine the blood, but in spite of the continued use of the nitrate, the skin did not become discoloured; although such a result has been frequently observed, and Wattmann found that where the change of colour was produced, it did not again disappear even when the use of the nitrate of silver had been long discontinued. In the present case, the epileptic paroxysms came on daily. The individual was addicted to onanism.

The blood for the purpose of analysis was obtained by cupping. It was of a bright red colour, and had the usual odour and taste. Coagulation had completely taken place into clot and serum. The serum was of a bright red colour, and clear; it had an alkaline reaction. The clot was of a bright red, without any sign of buffy coat, and presented its usual normal characters.

The quantity of blood taken for analysis amounted to 17·07 grammes* (263·39 grs.) The serum weighed 9· grammes (138·87 grains), and the clot 8·07 grammes (124·52 grains.) These quantities give for 1000 parts of blood:—

Serum . . .	527·24
Clot . . .	472·76
Further, 1000 parts of blood yielded:—	
Water . . .	797·2
Solid residue (3·01 Fibrin) . . .	202·8

1000·

Process for detecting silver.

The dried residue of the serum and crassamentum, amounting to rather more than 3 grammes (46·29 grains) was incinerated in a platina crucible, until a fixed ash was obtained. This was next digested in warm nitric acid considerably diluted with water. The nitric acid was expelled by heat, and the clear but still slightly acid liquid was then tested for silver, by means of the chloride of sodium and other delicate reagents. *Not a trace of the metal could be discovered.*

On two subsequent occasions, blood taken by cupping from the same patient, was again examined, but with the same negative results, from which it is reasonable to infer, that the

* The gramme is equal to 15·43 grains English.

silver in this case had really not entered into, or combined with the blood,—a fact established on the one hand by the medicine, even under the long continued use of large doses, producing no effect on the skin of the patient, and on the other the certainty that had the metal existed in the blood, even in an imponderable quantity, it would assuredly have been detected by the chemical process employed.”—*Heller's Archiv. für Physiologische und Pathologische Chemie und Mikroskopie*, 1844, i. 9.

REMARKS.—We have inserted this case from the interest now excited by the employment of the oxide of silver, instead of the nitrate, in the treatment of certain diseases. It was supposed among other benefits, that it was not exposed to the objection of producing cutaneous discolouration; but it would appear that this is not consistent with the experience of the practitioner who first recommended its employment in this country, and to whom Sir James Eyre, in his recent work, gives full credit for the introduction of the remedy*. Heller's case shows that nitrate of silver may be used for some weeks in large doses without producing cutaneous discolouration. No silver could be detected in the blood, and it is probable that Heller's inference was correct, *i. e.* that not a trace of the metal was present in that liquid; but we think there are some objections to the experiments on which that inference is based. In the first place, the quantity of blood taken was extremely small, (17·07 grammes). In the experiments of M. de Kramer, of Milan†, from two to three hundred grammes of blood at least were employed, even in cases in which the nitrate of silver had been administered in large doses as a poison to animals. The result was, that the metal was found both in arterial and venous blood. Another objection is, that the process of analysis used by Heller was defective. The large proportion of chlorides contained in the blood, would convert the silver to a fixed chloride insoluble in nitric acid. This acid, therefore, would not be likely to take up any silver from the ash. De Kramer's plan consisted in heating the ash to a high temperature with potash, lixiviating and washing the residue, and then digesting it in nitric acid, in order to dissolve any particles of metallic silver. In this solution, he easily detected silver. We have not met with any case where silver was detected in the blood of a person taking the nitrate in small doses as a medicine; but it would probably be found by De Kramer's process. That the salt does in some form enter into this liquid, is clear from the cutaneous discolouration occasionally produced.

The chloride of silver, given in strong doses to animals, has also been found to enter the blood, and we think further inquiry would show that the oxide is probably not exempt from this serious objection to the employment of preparations of silver.

With respect to the colour produced in the skin by the use of these preparations, Dr. Biett, like many other physicians, has observed, that it sometimes appears only a long time after commencing with the use of the nitrate. According to Dr. Johnson, it requires at least three months' administration of the nitrate as a medicine in order that the complexion should be affected, and that when taken for periods shorter than this there has been no discolouration. The results, however, must materially depend upon the quantity of nitrate taken, and the rapidity of absorption. From a blue, the colour passes to a bronze hue, especially in those discoloured parts which are exposed to the sun, as the face and hands. It gradually deepens, so as to become almost black. The conjunctivæ acquire a livid hue, and the same colour has been remarked in the skin of the lips. In some instances, the discolouration has slightly diminished after a time, but no case is known in which it has wholly disappeared. Dr. Biett saw at Geneva, two persons in whom the colour had remained unchanged for a period of twenty years. It is singular, that while the hair does not become discoloured, the nails have been observed to acquire a blueish tinge. Even old cicatrices undergo this change, but in a cicatrix formed subsequently to the discolouration, the skin has been observed to remain white. The cause of this singular change is but little understood. It is probably due to a combination in the first instance of the oxide or salt of silver with the superficial layers of the true skin; for the cuticle has been frequently removed by blisters without diminishing the intensity of the colour; and in the case supposed, light would act upon the metal as it does in any other instance where one of its salts is in contact with organic matter, *i. e.* reduce it to the state of suboxide or metal, which would then form an intimate combination with the organic tissues. One of the most powerful solvents of silver in this condition, is the cyanide of potassium. A suggestion has been made, that a solution of this salt might be used for removing the colour, but its poisonous properties are so great, that it could hardly be employed with safety under any circumstances, even supposing it to act efficaciously.

* Mr. Lane's Communication, p. 112.

† Annales D'Hygiène Publique et de Médecine Légale, xxix., 429.

* Mr. Lane's Communication, p. 112.

SURGERY.

SEVERE INJURY OF THE SHOULDER, FRACTURE OF THE HUMERUS, AND "RUPTURE" (?) OF THE BRACHIAL ARTERY.

MR. F. ROBINSON reports the case of a lad, æt. 18, who was admitted to the Newcastle-upon-Tyne Infirmary, under Sir J. Fife, in consequence of an injury received by his arm becoming entangled in a wheel connected with machinery. The head of the humerus was fractured obliquely downwards and inwards, and the whole of the articular surface, to the depth of a third of an inch in the centre, retained *in situ*, along with the lacerated capsular ligament. The lower fractured extremity of the bone, along with a third of its shaft, was forced through the integument of the axilla. The wound was barely large enough to admit the passage of the bone; it was slightly enlarged, and the parts restored to their natural position. The coraco-brachialis appeared to be the only muscle lacerated. The axillary vessels and nerves were nearly isolated; the displaced bone rested on them, but they were apparently uninjured, and the artery pulsated with the natural force, as did the radial artery at the wrist. For six days after the injury he appeared to be doing well, with the exception of slight delirium on the second and third nights, and some tendency to sloughing and unhealthy suppuration about the wound. Up to this time the pulse continued equal in both wrists; there was slight numbness of the fore-arm. On the afternoon of the sixth day, slight oozing of arterial blood from the wound occurred; and, a few hours later, he complained of a sudden accession of pain in the humeral and pectoral regions, and increased numbness in the arm; slight arterial oozing continued; and now it was observed that pulsation had ceased in the radial and brachial arteries of the injured limb. On the following day the parts about the shoulder appeared much swollen, and covered with an erysipelatous blush, and fluctuation was apparent at the axillary margin of the pectoral muscle. About eight ounces of blood had oozed during the night. On the evening of that day he became comatose and died. Upon examination after death, when the coagulum of blood which plugged up the wound was removed, the brachial artery was found to have been ruptured (?) transversely; the inferior extremity appeared to have contracted a good deal, and was turned outwards. The upper extremity of the artery had retracted high up in the axilla, and was surrounded there by coagulated blood in large quantity. No lymph or blood was contained in the extremities of the artery, neither were there any marks of ulceration or disease of its

tunics. The brachial vein and nerves were uninjured. No attempts at repair had commenced either in the bone or soft parts.—*Abridged from the Prov. Med. and Surg. Journal.*

PHYSIOLOGY.

RE-ESTABLISHMENT OF SENSIBILITY IN AUTOPLASTIC FLAPS.

At the Meeting of the Academy of Sciences on Feb. 10th, a memoir was read by M. Jobert de Lamballe, on the Re-establishment of Sensibility in Autoplastic Flaps. The author sums up in the following terms the conclusions to which his observations upon man, and experiments on the lower animals, have conducted him:—

1. Immediately after autoplastic operations, the sensibility of the flap diminishes or disappears; this is in direct relation with the loss of blood.

2. Until the section of the pedicle, the sensibility is retained, in some degree at least.

3. At the expiration of a certain period after this section, vascularity and sensibility reappear in the flap simultaneously, and increase in an equal ratio.

4. In many cases, the vascularity of the flap becomes considerable, and its sensibility is then increased in a proportional degree.

Anatomical investigation has furnished the following facts:—

1. The autoplastic flaps, after the section of the pedicle, are isolated from the rest of the system by a cicatricial tissue.

2. There exist, as means of communication between the flaps and the rest of the organisation, only those vessels which traverse the tissue of the cicatrix; nervous filaments are never seen in this new formation.

3. The nerves which originally existed in the flap waste, and eventually disappear.

4. The nerves of the part surrounding the flap stop at its borders; sometimes they terminate abruptly in a kind of enlargement of the neurilemma, at others they are lost in the tissue of the cicatrix, without our ever being able to trace them into the flap.

CHEMISTRY.

ON COVERING BODIES WITH NICKEL.

M. BOETTGER states that he has discovered a salt of nickel, which answers better than the cyanide for covering bodies with a layer of that metal. This salt is the ammonio-sulphate of nickel, which is prepared like the ammonio-sulphate of copper. All cupreous objects plunged into this liquid are speedily covered with a beautiful layer of nickel, of a silvery whiteness.—*Annaire de Chimie*, 1845.

LONDON MEDICAL GAZETTE.

Lectures.

LECTURES

*Delivered at the Royal College of Surgeons,
May 1845,*

By BRANSBY B. COOPER, F.R.S.

Professor of Surgery, &c.

ON Saturday last Professor Cooper concluded his interesting course of lectures on Fractures and the Reparation of Bone. In this short abstract it is our intention to present to our readers the Professor's observations on a subject which has both novelty and interest in relation to the action of pus upon the sequestrum of bone.

The Professor commenced his Lectures by making some useful observations on the functions of the osseous system in the animal economy, and then proceeded to the structure of bone itself, correctly remarking, that from its hard, and apparently inorganic nature, many had been led to regard it as partaking but slightly of that vital power which characterises the softer structures, whereas, in reality, the same laws preside over and govern the formation, growth, and reparation of each. This view was illustrated by a well-chosen series of preparations and drawings, shewing the gradual development of bone in the foetus, in which the Professor pointed out that the ossific matter deposited appeared to be less with a view to the priority of use in the particular bone, than to the amount of earthy matter ultimately to be found in the various bones, but at the same time mentioned that the progressive development seemed in some instances to be regulated by both of these intentions. A parallel was next drawn between the formation and reparation of bone; here, by analogical reasoning, the lecturer demonstrated the identity of the means employed by nature in both of these cases, and proved, we think, satisfactorily, that the difference in the result is due to a difference in the degree only of the operation, and not to any difference in the operation itself; and his remarks on the part which Protein plays in these important processes were not less interesting than instructive.

The nature, cause, and external appearance of fracture in bone, were next dwelt upon with great perspicuity, and the daily changes which occur after a fracture, from the first infliction of the injury, up to the period of reunion, were shown from some excellent drawings which had been made from recently fractured bones.

The Professor next introduced to the notice of his audience an instrument, invented by Dr. Jarvis, an American surgeon, for re-

ducing fractures and dislocations, and commented on its use. This instrument has been modestly denominated "the Adjuster" by its ingenious inventor; a name which correctly enough points out the ultimate effects produced by its application, but conveys no adequate idea of the enormous power and wonderful simplicity of action which characterise this important invention; and Mr. Cooper gave it as his opinion, in unqualified terms, that the apparatus must necessarily rise into the most general use, although at the same time he seemed to consider it as more applicable in bad cases of fracture than even in dislocations, as these forces, as now applied, through the use of the pulleys, rarely failed in them, although every day insuperable difficulties in the treatment of complicated fractures occurred in the practice of the most skilful surgeons.

In his last two lectures the Professor confined himself entirely to the subject of diseased bone, to which he appears to have devoted much attention, and he succeeded in throwing great light upon the process adopted by nature to free herself from difficulties which at first sight appear insuperable.

"In the case of the sequestrum of bone," observed the Professor, "we find the dead bone enclosed, not only in the surrounding soft parts, but actually enveloped by newly-formed living bone, whence its removal by any other than mechanical means might seem impossible; yet it is well known that it is removed, and absorption has been pointed out as the method employed to effect this object. Sir W. Blizard, and others, have shown that by placing portions of bone in ulcers, a part is removed, for the bone loses weight, and thus it was supposed to have been removed by the surface of the ulcers. The fangs of transplanted teeth are also known to be acted on, and Mr. Wilson ascribed this to their absorption. Those surgeons who have carefully studied the functions of the absorbents consider the removal of dead bone by these vessels as extremely improbable, and the merit of reconciling the facts with the true circumstances of the case, appear to be due to Professor Cooper, who has investigated nature's process throughout, and has proved, through the assistance of an experienced chemist, that the discharge arising from diseased bone contains a large quantity of the solid constituents of bone in solution, which consequently pass off in these fluids. He was thus led to believe that nature finds in the animal portion of dead bone a solvent for the more solid and inorganic portions, and that the surrounding tissues, by the pus they throw out, join in the attempt to extrude a substance, which, although once organised, has become an extraneous and foreign body.

Not only is this discovery of the greatest use as pointing out the means employed to effect the removal of the dead bone, but it also enables the surgeon to ascertain without the assistance of the probe whether bone be diseased or not; for it is sufficient to know by a chemical examination of the matter discharged, whether phosphate of lime be present or not, to infer at once the existence of dead bone. These discharges no doubt differ with the nature and extent of the disease existing in the bone, but the discharge from a case of diseased bone, at present under surgical treatment, was found to yield after incineration from 72 grains of pus—

grs.

Phosphate of Lime 1.75 or 2.43 per cent.
Carb. Lime and Soda. 15 or .208 per cent.*

The experiment, therefore, of Sir W. Blizard merely shows that the purulent discharge of ulcers is capable of effecting the solution of bone, and carrying it off; and no doubt the fluid which continually oozes from a transplanted tooth possesses the same property; thus refuting the arguments of Mr. Wilson on this subject.

Having discovered nature's method of removing bone, it becomes practicable for us to imitate or assist in the operation. The injection of nitric acid was long ago proposed for the purpose of dissolving dead bone, and we now see that this is strictly in accordance with the means employed by nature; but nitric acid is a powerful caustic and irritant, its use is therefore injurious to the surrounding living parts, and necessarily interferes with the process of reparation, whereas the fluid employed by nature is harmless, and permits of the reparation of the injury, whilst it removes the obstruction which impedes success. Professor Cooper, at the end of his course, said he was still prosecuting experiments on this subject, and expressed with some confidence a hope that he would be enabled to find a solvent of bone which shall possess all the requisites essential to insure a steady solution of dead bone

* Very few of our chemical works contain analyses of pus, and the constituents are stated in vague and general terms. The fact that phosphate of lime exists in this secretion, as an occasional constituent, offers no objection to the above views, since in ordinary pus, the phosphate exists only in traces, while in the pus from bone, it has been found by a good chemist, to form as above mentioned, nearly two and a half per cent. Frommherz states, that traces of the phosphates of lime and magnesia have been frequently found in this liquid (*Lehrbuch der medicinischen Chemie*, B. 2, S. 323,) and a still later writer on Pathological Chemistry, L'Héritier, says, that Dumas has found in this secretion phosphate of ammonia, and in the incinerated residue, the phosphates of lime, magnesia, and potash. (*Traité de Chimie Pathologique*, 673.) The proportions are not stated, but it may be inferred that these phosphates existed only in traces.—*Ed. Gaz.*]

without injury to the surrounding tissues. He is now, we believe, employing a solution of phosphoric acid for this purpose; for even when moderately concentrated, it exerts no corrosive action on the skin, and its combination with phosphate of lime forms a super-phosphate, which is so soluble as to be deliquescent, and therefore easily removed in a liquid form. The Professor also recommended phosphate of soda in preference to sulphate of magnesia, in cases of disunited fracture, when aperient medicines are indicated. This appears to us well worthy of attention, as a means of supplying at once the necessary evacuation from the bowels, and placing within the reach of the absorbents a substance fitted to supply the deficiency which exists in the system for the reparation of bone.

LECTURES

ON CERTAIN

METALS & METALLIC PROPERTIES,

Delivered at the Royal Institution,

BY PROF. FARADAY, D.C.L. F.R.S. &c.

II.—April 19.

COPPER.

COLOUR. CONDUCTION OF HEAT AND ELECTRICITY—TENACITY—ART OF BRONZING.

I PROPOSE taking Copper, and such properties of metals generally as are allied to it, for the subject of the lecture to-day; and I shall shorten the introduction as much as possible, for the sake of getting at the facts that immediately concern us.

Copper is a very remarkable metal in many points of view, and amongst others, for the manner in which it is presented to us in nature. Through the kindness of some friends, I have the opportunity of shewing you many fine specimens, illustrating the mode in which it is presented to us in nature. Here is a specimen, pure, perfect and dense, which resembles a piece of rock under the hammer. Here is a specimen in which the metal is combined with oxygen and sulphur, and there are many other specimens which explain themselves. Here is one, which I shew, not for its beauty, but for its utility; it being the great ore of copper which is wrought in this country. We produce a great deal of copper, and, in the west of England and in Wales, there are abundant supplies. There are before you many varieties of the natural forms of copper, but I must only distinguish one—malachite. This magnificent specimen has been lent to me, to illustrate the subject, by Mr. Murchison. It shews what enormous concretions of this substance are met with in the Ura-

lian mountains. This piece of copper ore is estimated at the value of £280 in the rough state, and comes from the same locality as these beautifully wrought specimens of malachite, consisting of candlesticks, an inkstand, and a vase. Here are also specimens shewing this peculiar condition of copper, in which the metal becomes slowly combined with oxygen and carbonic acid, under the agency of water. We learn from the researches of Mr. Murchison, in the Uralian mountains, that a beautiful natural process has been in operation, producing this green mineral in the form of stalactites. The copper is deposited here in the same way as what is commonly termed petrification takes place at Matlock, and other places; calcareous matter is deposited in a similar form as carbonate, and malachite is probably deposited under similar circumstances. But whether we have it in masses or in stalactites, the mineral appears to owe its origin to a chemical action which is continually going on in the caverns of rocks, and in the bowels of the earth.

I must not detain you long with the chemical processes for the extraction of copper, but merely point out briefly how we obtain the metal. Here is a specimen of the principal ore of this country—the sulphuret (copper pyrites)—which, being exposed to the air and heated, gradually loses its sulphur, which is burnt off, and various slags come from it. The metal, first in one state, then in another still more perfected, and at last quite pure, is brought forth from the furnace, and by a series of calcinations and exposure to the air it is finally obtained in the state in which you now see it. If you could stand near enough to the finishing furnace of copper works, you would see, at the conclusion of these processes, a large body of pure liquid metal, which is thus simply brought into a state fit for use, in the form of bars, plates or sheets. The latter is a very common form of copper, with which every one is acquainted.

The first point that I shall mention regarding copper, is its *colour*: for it is very striking in this respect. It has a fine red colour, which deepens in the air, in consequence of the formation of oxide over it. Except titanium, I do not know any metal that has so deep a colour as copper. I shall first speak of the colours of metals generally. Titanium is the deepest of all; for it resembles highly burnished copper, then copper, then perhaps gold, and then some other metals very nearly white, or a bluish white. There is a very curious point respecting the colour of metals. You are not made aware, in the first instance, in looking at them, of their real colour, and for this reason,—they not merely reflect the colour which is peculiar to them, but they throw back, at the same time, a great deal of the white light

that impinges upon them. If I hold a sheet of copper in the sun's rays, I shall throw back a beam, but not a pure beam, of white light. Dr. Wollaston taught us how to analyse the effect of repeated reflexions on the surface of metals. I have here an arrangement of five copper plates, so placed that, by repeated reflexions upon each other, we are able to ascertain the true colour of the metal, which is of a very deep red, the white light being entirely lost in these successive reflexions. The same result is obtained by looking into the interior of a highly burnished copper vessel. If you treat layers of gold in this way—if you cause them to produce successive reflexions, and look at the last reflexion, you would say that it was copper; for instead of being light yellow, it is of a deep red; the colour seen on looking into the interior of gilt vessels. On examining any of the vessels before you in a strong light, you will perceive that gold is deeper coloured in some points than in others; these points are seen where the white light does not directly meet the surface;—and on looking into cavities or hollows in the metal, where the light has to be bent two or three times, you get the double and treble reflexion, and hence the colour becomes much deeper. In the old fashioned gilt frames, with a number of gold balls on a flat surface, you see between the gold ball and the surface, the true deep orange red colour (not yellow) belonging to gold. Those parts are deprived of the white light which would otherwise be thrown back, and obscure it. I will detain you by carrying you back for a moment to the colour of gold, as described in the last lecture: the metal being yellow, or strictly speaking orange red, the transmitted ray is green. I do not wish you to take any thing for granted, and I therefore repeat the experiment, to illustrate the transparency of gold, and to shew that the transmitted ray is really green. The green ray which passes through gold is now thrown upon a small screen of ground glass, and the result establishes the fact I have stated. So far as we can penetrate into these matters, we find that each metal has a very striking power of itself in altering the colour of light by reflexion and transmission. Silver, by reflexion, comes out a kind of yellow green; lead a bluish white; tin resembles silver, but, if any thing, of a more pure white; steel, by repeated reflections, becomes of a fine blue colour. When any of these metals are made transparent, the lights seem to be those which form the complementary colours.

Having thus described the external appearance of metals, we must now consider a little their internal condition as a mass of particles, giving their own properties, not to the mere surface, but to the entire mass. I shall best initiate you into the general considerations that arise out of the properties of

the particles of metals, if, in the first instance, I take some of the simplest; and therefore I have set down for discussion to-day the *conduction* of power, by which I mean the property that metals have, above all other substances, for the conduction of certain powers of matter. I may state briefly, that we are enabled, according to certain conditions of things, to generate or throw into action certain powers of matter, and transmit them from place to place by certain laws, or produce them in one place, and use them elsewhere. The power of heat is one; electrical force is another. Power can be thrown from place to place, under certain conditions, using nothing but matter, and arranging that matter by laws that govern the universe. The metals have the most remarkable capacity as regards the conduction of power.

I shall commence with the *conduction of heat*. I will place here a little stand, with four cylinders, equal in size, of different matters and substances. I have taken two that are metallic, and two that are non-metallic, in order to distinguish metals from all other solid bodies. Here is a hot vessel, on the cover of which I will place these cylinders, and on the top of each of them a small portion of phosphorus. According to the order in which the phosphorus takes fire upon them, you may set down their relative power to conduct heat. Any irregularity on the surface may be compensated for by regularity in the arrangement. There are no means of conveying heat from the vessel to the tops of the cylinders, except through the cylinders themselves, and they are placed equi-distant. The cylinders consist of copper, stone, lead and glass. This experiment is meant to prove that metals, as a class of bodies, conduct heat in a manner far surpassing what takes place with respect to any other solids. Solid bodies which consist principally of metals, conduct heat very well, as, for example, a compound of copper and oxygen. If I had used other cylinders, it would have been found that they conducted heat in different degrees, but the metals would have surpassed all non-metallic substances. I have here an arrangement which is more to my purpose—a cylinder of wood and a cylinder of copper, which can be joined together. They are equal in shape, size, and condition, and I have stretched a piece of paper accurately over them, where they unite. By a lamp we can cause heat to act upon them where the junction occurs, and the paper will be injured, or burnt, less over the copper than over the wood. I have placed a piece of phosphorus over one part of the copper cylinder, and another piece over a corresponding part of the wood; and on applying heat equally to the centre of the mass, you observe that the wood has already scorched its paper, set fire to it, and burned

it; but the phosphorus on the wood at a little distance is not burned. What becomes of the heat? The wood cannot take away or convey the heat, as copper does; consequently the phosphorus on the wooden cylinder does not ignite. In the one the heat cannot travel, and the wood feels cool; in the other the heat is conducted: the whole of the copper is now getting warm; the paper is uninjured, but the phosphorus takes fire.

There is an experiment here, which will shew whether two metals are equal conductors of heat. Here are two bars—one of copper and one of iron—equal in shape, arrangement, attachment, and other conditions. There are eight small balls fastened to them, at equal distances, by cerate. On applying a spirit-lamp at the centre, equally between the two bars where they are in contact, the heat will travel by the molecules of the metals, and, as each ball falls, it will shew the power of heat to melt the cerate, and consequently the rapidity of conduction in the respective metals. The following table will shew how much they differ from each other, and how the metals surpass other bodies in their power of conducting heat.

Gold	1000
Silver	973
Copper	898
Platina	381
Iron	374
Zinc	363
Tin	304
Lead	180
Porcelain	27
Marble	14
Brick	11
Charcoal	4

From this table it will be seen that the conducting power of gold is nearly three times as great as that of zinc, while copper possesses more than twice the conducting power of iron.

I might refer to many other experiments, but time will not allow me. If I place a German silver spoon upon one made of true silver, and apply a spirit-lamp, the heat will travel along them, but the latter will first burn my fingers—the one (silver) will be quite hot, while the other is quite cool. So if pieces of phosphorus be placed on the two at one end, while the bowls are immersed in hot water, the phosphorus will be found to ignite first upon the silver, this being the best conductor of the two metals.

I must now take you to another power, in order to shew the capability of conduction (*voltaiic conduction*) which is possessed relatively by the metals, and by metals far above all other bodies. For this test we are indebted to an instrument of a most extraordinary kind—an instrument manifesting a much nearer approach, if I may so say, to

the spiritual part of our system, than any thing we can construct out of other ordinary kinds of matter. I refer to an instrument coming so near to it in certain cases as to have been used to replace what we call nervous agency—the voltaic battery behind me. I have here the battery of Grove, which I think is the best. It is not for me to detain you on the nature of voltaic batteries, but to follow up this consideration—what is the value of metals as conductors of matter? We will turn to the power of electricity, and will use the very commonest illustrations. From the presence of a spark that is now going forth from the poles, there is an indication of a certain power which is obtained from the battery behind me. But how did I bring it here? By making use of that property which the metals, above all other things, possess—of conduction. The moment the connexion between the wires is made the power is manifested. This arrangement gives an accurate and a ready means of making a comparison of matter with matter as a conducting power. Is there any comparison in this respect between metals and other substances? None but one of infinity of difference. If I put a piece of metal across the terminal wires, I shall find that my power is gone: I have now no spark here. The conclusion to be drawn is that the cross-wire has conducted away the power: take it away, and the power is restored as perfectly as before. If I place wood across the terminal poles, it has no power to take away force as compared with metals; and the same may be said with regard to glass. On taking metals, you observe an extraordinary difference of power in carrying off the current. By making a long bridge, you see how much power is stopped. The wire is getting red hot, which shows what is taking place. There is still great power left to go through the terminals, but when I make the wire to have a longer communication between them, I have less power; if I make it shorter and thicker, I have nearly all the power going through. Although, therefore, the metals are good conductors, as compared with glass, or wood, or water, yet they are, under certain circumstances, interrupters of power.

With regard to water, the fluid before me is under the most favourable circumstances for connecting the two terminals one with the other. Here is a great mass of water; I have connected the wires by water, and you will scarcely find any diminution of power at the terminal poles. The water does not interrupt or carry off the current. The power is as intense at the poles, as it was before the connection was made with the water.

When we carry out these experiments, we have beautiful means of shewing the power of metals in conducting electricity. If we

take the different metals, and place them one after another in a bridge, the heat is more or less diminished in proportion to the power which the particular metal has in carrying the current across. If we place the metals in a series—that is to say, an alternation of platinum and silver—if I prove the case with these it is sufficient for the whole number: we then get a very striking result. You see the perfection of power when we are dealing with things that never deceive us.

[A compound wire of silver and platina in alternate lengths was used. The platina lengths only became red hot during the passage of the current.]

First of all, I will so connect this arrangement as to have the current passing through the bridge, and you now see the beautiful condition into which wires of equal size are brought by it. More power is manifested in the wires that become red hot, than in the intervening portions, and there is very great heat evolved. By successive lengths of wire, this state of things may be carried to any extent. This experiment proves that platinum conducts badly, compared to silver, for the power goes to heat it, though either of them possesses the power of conduction almost infinitely in comparison with non-metallic matter.

There is a singular consideration, which Sir Humphry Davy first made known, with regard to this power, that I wish to shew, because it concerns the metals, namely, that the cooler metals are, the better they conduct. I have now heated the connecting (platina) wire red hot by increasing the power; I immerse one half of it, in the form of a loop, in a jar of water, which scarcely conducts at all, the only object of the experiment being to cool the part of the wire immersed. More electricity passes through that portion which is submerged than that which is outside, because the latter is hotter than the former, and is therefore a worse conductor; the water does not take any portion of the electricity, it all passes through the wire. As the temperature rises, the wire conducts worse. I show the experiment on platina, because that suffers nothing by chemical action, and we can carry on the experiments without any chemical effects from the air. I can do it with copper, but not without the action of oxygen upon it.

[A long thin platina wire was brought to a dull red heat by joining it to the terminal poles of Grove's battery, and a large loop of it was then immersed in a vessel of water. The ends of the wires out of the water became instantly of a glowing red, increasing, by farther immersion, to a bright red heat, while the part immersed was cooled to the temperature of the water.]

I will now show the manner in which we

make use of metals, especially copper, in experiments. I have placed gunpowder at some distance above me, which I wish to fire. As I can heat wires by the electrical force, I can convey it through metal, and especially through copper, which is best for the purpose, being an excellent conductor. It is easily drawn, easily arranged to any form, and is useful to an extreme degree. If I want to convey the power to the gunpowder, all I have to do is to carry on the communication by this metal, uniting the copper wires in the situation for explosion by a thin platina wire surrounded with the gunpowder, and the moment I make contact with the two poles of the battery I shall ignite the powder.

[A quantity of gunpowder was thus fired at about twelve feet elevation, the platina wire immersed in it having become red hot immediately on joining the terminal poles.]

There is one effect consequent upon this property of copper. It resides only in copper, but as it can be afterwards transferred to other metals it is exceedingly beautiful, and illustrates better than anything else the value of giving attention to the properties of matter for the purpose of increasing our store of knowledge, and enabling us to apply it rightly in the discovery of new facts and the explanation of old ones not yet accounted for. The philosopher's course is to collect old facts or create new ones, and try to explain them by general laws. The experiment I am about to show is a remarkable illustration of this kind. I purpose making this needle on the table vibrate a certain number of times, and it will lose in motion a given space at each vibration. I shall let it start from this position, and then count the vibrations. There is one, and it will come a little short; there is a second beginning, and it will come a certain amount shorter still, through friction on the pivot and resistance of the air; a third is taking place, and it will again fall a little short. Now, if I make that experiment with copper, putting the needle upon the middle of a large plate of copper, and then again try the vibrations, though I may not hit the same place, yet you will soon see an extraordinary difference—the needle vibrating over the plate of copper will move more slowly, and will stop earlier. When it returns it will come back a considerably shorter space, the next time much shorter, and after four or five swings it will come entirely to a stand-still, the air and the friction on the pivot being the same as when the needle vibrated on the table. If I take away the copper, and put the needle on glass, it will swing ten or fifteen times, and lose scarcely anything. This property of copper in influencing the vibration of the needle was discovered by Arago, who first described it, and extended his experiments to all other metals. I have here

a copper plate, capable of being set into rapid motion by a wheel, and I have a large magnetic-needle suspended over it. I have so arranged it that it shall not swing much, and be pretty near the level of the copper. The swinging one side or the other I can overcome. If I try to attract the magnet I cannot do anything of the sort; I may try to draw the magnet away by a piece of silver or copper, but nothing of the kind happens: these metals do not affect it when at rest. When, however, a few revolutions of the copper plate are made by the apparatus before me, you will see what takes place—the magnet, although previously at rest, will now follow the plate in its revolutions. If the motion of the plate be reversed, the magnet will travel the other way; it is actually dragged, as it were, over the copper in motion. Do not suppose that this is consequent upon the air being set in motion, because if I put a sheet of paper underneath, and cut off entirely the effect of the copper plate on the stratum of air above it, the same thing will occur. I will interpose this sheet of paper between the copper plate and the suspended magnet; on setting the copper in motion, the magnet will still move round simultaneously with the plate, yet there is no wind influencing it. On reversing the motion the magnet will be stopped, and then proceed the other way. Although I may now and then accidentally touch the magnet, and stop it, yet it is able to recover itself, and move with the copper—a very extraordinary property of copper, and of all metals, in different degrees, which has been resolved into neither more nor less than the power of conduction. When we come to the origin of voltaic power in zinc, I may then show you that this extraordinary action of copper is simply consequent upon the electric relations of that metal, and its influence upon the magnet.

There is one other point I wish to bring before you in this lecture, namely, that which relates to the *tenacity* of metals. Copper gives us one or two beautiful illustrations of this property. We have in metals which are called ductile, a property manifested by the motion of their particles one over another without the destruction of their continuity; a power of extending them which cannot readily be exerted in any substance but metals. Here is a cylinder reduced from a larger one by the process I am going to show you. If I take this length of wire and pass it through a hole in this machine, you will soon find a singular effect taking place. This hole is nearly the size of the wire, and therefore I shall not lengthen it much; but, if we take the next aperture, which is a kind of square, and smaller than the wire, you will find to what an extent we have caused the particles to move over each other. This is due to a property which is

called tenacity, combined with malleability, or mobility, which I have already illustrated.

But there are two or three points about the tenacity of metals very important, because this property is now used in an extensive manner as a means of giving stability or overcoming force. I have here suspended a heavy weight; but where is the illustration of tenacity? The weight is loose—the wire sustains it, and thus furnishes an instance of the extraordinary degree of cohesive power which its particles must possess: the attraction of the particles is able to overcome the gravitation of that weight. Here is an apparatus of Dr. Young's, a man whose fame is rising higher from day to day—and which cannot rise too high—in literature, in mathematics, and in mechanics. He caused a wire to pass through at a given place, secured it, and then he had the power by means of a little winch of drawing it tight. He then draws it over a pulley, and makes it tight at another part of the machine. There is a steelyard that presses it down, and upon that is a weight. By placing the machine in motion the steelyard rises—it is now suspended in the air. The wire by cohesive attraction or tenacity is able to sustain the whole weight of this steelyard, which is equal to two pounds on every notch. By giving tension to keep it raised, the wire does not give way, but the weight sinks. I am thus drawing the wire by mere weight, without using a perforated plate, and I can thus make ten feet of wire two feet longer without destroying it as a piece of metal. The wire has now broken, from the weight pressing on it being too great. We can repeat the experiment and ascertain the amount of power given. We can try wires up to two hundred weight of pressure, repeat the results, and go on to the most beautiful conclusions. The following table gives the tenacity of a wire having a diameter of the 656th part of an inch. It expresses the strength by the tenacity of metals, as determined by this machine.

Iron	549
Copper	302
Platinum	274
Silver	187
Gold	150
Zinc	109
Tin	35
Lead	28
Mercury	0

There are some curious conditions about this property. If I take a wire in its ordinary state I find that the particles are not at first in their strongest position; a property comes out in the malleable metals, especially in copper, which belongs to no other class. If I fasten the lower part of a wire to fifty-six pounds weight, I dare say it will be strong enough to bear it. By laying

hold of the upper part with a pair of pliers I can lift the weight, but the wire stretches a little beforehand. It is now at full tension, and sustains a certain weight. Here is the height at which this wire can support the weight, an inch from the ground; but I make the wire longer and stronger in raising the weight. To make a thing smaller, and at the same time stronger, is a condition peculiar to metals in the state of wire. If I give it a little jar, the weight falls, and the wire becomes longer: I have now wire-drawn it merely by gravitation. It is longer, and therefore must be thinner; yet it is stronger, because it now lifts, without difficulty, and to any height, a weight that before rested almost on the ground. I may diminish that wire in diameter until it is a fifth less than it was originally, yet it becomes at the same time stronger. We have nothing like this remarkable property in the arrangement of any other substance.

These experiments show that copper has a power of mobility in its particles over other metals without losing strength and tenacity, and to a very extraordinary degree; the consequence is, that we can draw copper to the finest wire, capable of being woven into cloth, and obtain leaves of it which are as beautiful as gold, though not quite so attenuated.

Upon copper and its malleability is founded a beautiful ornamental art, namely, the producing of what are called *bronzes*. Here are preparations of copper first beaten to leaf, and afterwards into a fine powder. It is curious, and not uninteresting, to see the manner in which art advances our knowledge of these properties. These bronzes or metallic colours are used for putting on paper in various ways. A friend has sent these ornamental papers, prepared for bronzing, by the application not of leaf, but of powdered copper, and I will show the principle on which it is applied. They print the pattern on the paper first with a varnish, which is very adhesive and dries rapidly; then over that, when the varnish is almost dry, they rub these powders with a piece of soft cotton, and you will see how the lustre comes out. The lustre that belonged to the leaves themselves belongs to the little particles that are made to adhere on the paper by means of the varnish; the paper is generally well polished or glazed, and of various colours, and the fine particles of metal are laid down by rubbing in a parallel direction. The metal papers around linen, and the ornamental covers around books, are produced in this manner.

[Some beautiful specimens were produced in a few minutes, presenting various shades of metallic lustre from a bright gold to a deep ruby red colour.]

Original Communications.

REMARKS ON THE MODE OF ASCERTAINING THE PROPORTION OF SOLIDS EXIST- ING IN THE URINE.

BY GOLDING BIRD, A.M. M.D.
Assistant-Physician to Guy's Hospital.

I DO not propose, in the following remarks, to make any allusion to the high importance of being able to recognise differences in the chemical composition of urine in disease, but rather wish to draw attention to another series of indications afforded by the urine which have hitherto been far too generally neglected: I refer to the proportion of solids excreted by the kidneys in a given time, independently of the presence of abnormal ingredients, or of natural elements existing in abnormal mutual proportions. In fact, until the publication of Edmund Becquerel's work, this very important aid (as I believe it to be) in the diagnosis and treatment of disease, had scarcely attracted any attention.

Presuming that in any given class of affections the several ingredients existing in the urine preserve nearly their normal ratio, it is obvious that if by any means we could appreciate with tolerable accuracy the quantity of "real urine" excreted in a certain time, we should be able to learn, not only to what extent the kidneys are performing their great and important function of depuration; but should also obtain data by which it would be possible to measure, within certain limits, not only the amount of nourishment acquired from ingesta, but of the rapidity of the destruction of the effete tissues of the body under the influence of the oxygen of the arterial blood.

In this manner we should be able easily to recognise the existence of a series of causes influencing the condition of our patients, the detection of which would otherwise have been scarcely possible.

The first element in an inquiry of this kind will be, to obtain a tolerably accurate measure of the quantity of urine secreted in twenty-four hours. Simple as this appears, it in practice is attended with no small difficulty. Not only is it no easy matter to make

our patients quite understand what we require, but the loss of urine generally voided during the action of the bowels will frequently prove no small obstacle to our learning the exact quantity secreted. By some little tact, the latter difficulty may be generally nearly overcome, and the former is met by giving the patient a definite and distinct direction as to the time when he is to begin to collect his urine. I am accustomed to tell the patient to pass water at noon, and, rejecting the portion then excreted, to collect all that he passes up to the same time next day, when he will take care to empty his bladder completely. In this way, twenty-four hours' secretion may be collected and measured. Unnecessary as these minute directions may appear, they are nevertheless important; as without them, the patient is almost sure to collect more urine than he ought, by preserving the portions passed at noon on the first day, in addition to those voided on the succeeding day.

Having thus measured the amount of urine secreted in a given time, we are yet far from having any satisfactory information as to the proportion of work done by the kidneys in a given time, as far as their depurating functions are concerned; the amount of fluid in the renal secretions being liable to serious variations, according to the quantity of fluids drank, the action of the skin, &c. Thus, a person may, under peculiar circumstances, void, in twenty-four hours, forty ounces of urine, and on the next day but twenty, and yet the amount of depurating duty performed by the kidneys be the same; for the former bulk of urine, if of a density of 1.015, will contain about as much solid matters as half that quantity if of a specific gravity of 1.030.

Notwithstanding the excretion of water is a most important duty of the kidneys, yet it must not be regarded as their essential one, as this fluid is exhaled abundantly from every other secreting surface and emunctory of the body. The characteristic function of the organs under consideration must undoubtedly be regarded as the excretion of highly nitrogenised matters derived either from the wear and tear of the animal tissues, or from imperfectly assimilated food. Therefore, to obtain a measure of the amount of integrity of this great depurating func-

tion, we must not only measure the urine, but calculate with tolerable accuracy the amount of solid matters really existing in it. This can, of course, be effected by the evaporation of a given quantity to as dry an extract as can be obtained. The practical difficulties attending this process are familiar to every one who has ever performed the task; and moreover, the time required for its performance would preclude its being had recourse to sufficiently frequently to be of any real service. I have elsewhere noticed the objection to this mode, as well as the advantages it presents, and have calculated a table by which, on mere inspection, the quantity of solids in a pint of urine can be readily calculated*.

Since the publication of this table, I have calculated another from Dr. Christison's formula ($\Delta \times 2.33$), which shows at a glance the number of grains of solids in, and the weight of a fluid ounce of, urine, of every density from 1.010 to 1.040. Although ready to admit that this mode of calculating the quantity of solids is not susceptible of rigid accuracy, still, I maintain that the total error existing in a series of observations thus made will be far less than if actual evaporation of the urine was performed; and further, the large number of observations capable of being thus made by every one, amidst the fatigues of large practice, render it of infinitely greater value than a process which requires time and practical skill for its performance.

Specific Gravity.	Weight of 1 fluid oz.	Solids in $\frac{1}{3}$ j.—grs.	Specific Gravity.	Weight of 1 fluid oz.	Solids in $\frac{1}{3}$ j.—grs.
1010	441.8	10.283	1025	448.4	26.119
1011	442.3	11.336	1026	448.8	27.188
1012	442.7	12.377	1027	449.3	28.265
1013	443.1	13.421	1028	449.7	29.338
1014	443.6	14.470	1029	450.1	30.413
1015	444.	15.517	1030	450.6	31.496
1016	444.5	16.570	1031	451.0	32.575
1017	444.9	17.622	1032	451.5	33.663
1018	445.3	18.671	1033	451.9	35.746
1019	445.8	19.735	1034	452.3	35.831
1020	446.2	20.792	1035	452.8	36.925
1021	446.6	21.852	1036	453.2	38.014
1022	447.1	22.918	1037	453.6	39.104
1023	447.5	23.981	1038	454.1	40.206
1024	448.0	25.051	1039	454.5	41.300

A glance at this table presents us with a mode of recollecting the quantity of solids existing in urine of different specific gravities, when the table is not at hand for reference—a piece of short memory of no small service in practice. Thus, if the specific gravity of any specimen of urine be expressed in four figures, the two last will indicate the quantity of solids in a fluid-ounce of the urine, within an error of little more than a grain, when the density does not exceed 1.030; above that number the error is a little greater. To illustrate this, let us suppose we are called to a patient, the integrity of the depurating functions of whose kidneys we are anxious to learn. The quantity of the urine excreted in twenty-four hours amounts, we will suppose, to three pints, or sixty ounces, and the density of the mixed specimens passed in the time alluded to is 1.020; now we merely have to multiply the number of ounces of urine by the two last figures of the specific gravity, to learn the quantity of solids excreted; or $60 \times 20 = 1200$ grains of solids. If the table were at hand, the calculation would be more rigid, for we should then multiply 60 by 20.79, instead of 20; the product, 1247 grains, shows that by the former mode an error of 47 grains has been committed; an amount not sufficient to interfere materially with drawing our inductions by the bedside, and of course capable of immediate correction by referring to the table at our leisure.

From a large number of observations, it appears that the average amount of work performed by the kidneys in the adult, may be regarded as effecting the secretion of from 600 to 700 grains of solids in twenty-four hours. Although certain peculiarities connected with muscular exercise, regimen, and diet, as well as certain idiosyncracies of the patient, may influence this, yet if we regard 650 as the average expression of the number of grains of effete matter excreted in twenty-four hours by the kidneys, we shall not commit any very serious error. In calculations of this kind much latitude must be allowed, and it ought at least to be assumed that the kidneys may excrete fifty grains more or less than the assumed average, without exceeding or falling short of their proper duty.

I do not now wish to anticipate by any crude remarks or hasty inductions

the information afforded by the investigations alluded to. It is only after the collection of a large number of data, that any general conclusions can safely be drawn, but I may be permitted to direct attention to one fact, at least, which the quantitative examination of the urine teaches us, viz. the existence of a previously overlooked source of emaciation and exhaustion connected with the abnormally rapid destructive assimilation of tissue, and detected only by the simple processes above pointed out. A series of observations of this kind have been going on for some time under my inspection in the wards of Guy's Hospital, and, from the facts already elicited, I feel confident that before long they will enable me to communicate to the profession some very remarkable and useful results.

In conclusion, I may remind the reader that in taking the specific gravity of the urine, the stem of the gravimeter should be sufficiently long to have every degree distinctly visible, and the degree immediately below the level of the surface should be chosen, to compensate for the errors arising from capillary adhesion of the urine to the glass. It is hardly necessary also to state that the temperature of the urine should be as near 60° F. as possible, and that in every case a specimen should be selected from the mixture of all the urine passed in twenty-four hours, and not from that voided at particular times of the time.

If I may venture to suggest a task to such as are inclined to afford their share of information on this important matter, I would recommend that a well-marked case of any disease be chosen, and a daily record of the quantity and specific gravity of the urine be kept, noting when any marked alteration appears in its quantity or appearances, the state of the skin, and the state and frequency of the alvine evacuations. In addition to this, the action of urine on litmus paper, and the presence or absence of deposits, might be observed. Observations of this kind, requiring merely a little ordinary attention, involving no chemical skill or sacrifice of time, might be made by every one, however much engaged in practice, and from a collection of a series of this kind the most important information might be fairly expected. I may be permitted to say, that I should feel personally

obliged to any gentleman who could at his convenience furnish me with any observations of this kind, for I am fully impressed with the importance of collecting the results of the examination of the urine made in different localities and under different circumstances.

Middleton Square,
April 21, 1845.

BICEPHALOUS CHILD,

BORN AT THE FULL PERIOD OF GESTATION.

By JOHN WICKENS WEST, Esq.

M.R.C.S. L.A.C. &c. &c.

DURING the night of the 27th of March, I was requested by the husband of a woman, who had a few minutes before been confined, to examine the child, which, he had been informed by the midwife, presented a very unnatural appearance, having two distinct heads. On my arrival I found it to be a double-headed child, of the ordinary size and weight, of the female sex, living, and apparently well-formed in every other particular. The mother was in a state of much nervous excitement, and was exceedingly desirous I should remove the deformity. The second head, as large as the natural one, was attached to that part of the spine of the child occupied by the two inferior cervical and two superior dorsal vertebrae, which, on minute examination, I discovered to be deficient; it was well formed, and had eyes, nose, and mouth fully and naturally developed; but the ears were absent. The neck was partly covered with hair, and appeared more like the continuation of the scalp of the other head than the common integument. The child lived four hours. The second head presented no signs of animation. The act of respiration, during the period of its existence until a few minutes of its death, was naturally performed.

I was not permitted to make a post-mortem examination, which I much regretted. The mother has had several children, all well formed. Her present labour was unusually quick, an hour scarcely elapsing between its commencement and termination; and it was accomplished without assistance.

The woman during her pregnancy was fully persuaded the child would be defective. She had an impression on her mind, from some circumstance that occurred, that all would not be right.

Notwithstanding it is generally denied that impressions on the mind during the period of gestation can exercise any effect on the fœtus, still frequent instances occur to us where the mother is convinced during her pregnancy, from fright or other causes, that a deficiency will arise, that we are at times inclined to believe that the problem is not yet solved.



PRACTICAL OBSERVATIONS
ON THE
VARIOUS FORMS OF DYSPEPSIA.

By ROBERT DICK, M.D.

Author of a Treatise on the "Derangements, Primary and Reflex, of the Organs of Digestion," "A Treatise on Diet," &c.

[Continued from p. 25.]

BEFORE proceeding to a consideration of the treatment of dyspeptic derangements, I shall very briefly advert to some of the sympathetic affections, which these derangements, especially if long continued, give rise to in other organs. And first, I shall notice that tenderness on the cartilages of the right ribs, and soft parts therewith connected, which Dr. Wilson Philip describes, and which he explains from the juxta-position of the ribs to the thin edge of the liver, and of the thin edge of the liver to the irritated pylorus: for "juxta-position," he observes, (Treat. on Indigestion) "is one of the most powerful causes of sympathy." I doubt this; nor can I conceive how mere juxta-position is, or ever can be, such a cause. I refer the effects described by Dr. Philip, to juxta-position in part, indeed, but to something more. I believe *elevated temperature* to be that,

which, in this case, gives effect to juxta-position. Serous membrane is easily disposed, by several causes, to become irritated, and to throw out coagulable lymph. Pressure, the contact of air, the presence of a foreign fluid, and, I believe, the elevated temperature of an irritated part or organ, are sufficient to excite serous membrane to morbid sensation and morbid action. In this way, I explain the effect of the sub-inflamed pylorus on the thin edge of the liver, the thin edge of the liver on the serous membrane of the angle of the ribs: for this tenderness principally accompanies what is called irritative dyspepsia. On a like principle I explain many of those cases of adhesion between the pulmonary and costal pleura, which we meet with in subjects whom we cannot ascertain to have ever been the victims of any acute pleuritis. By the reduction of temperature and of fulness, I would explain the relief, so far as it goes, obtained from the application of leeches to the epigastrium, in irritative dyspepsia, which effect Dr. Philip seems to speak of as mysterious and unaccountable, "there being no connexion between the two sets of vessels," that is, between those of the abdominal parietes and those of the stomach.

I would also, before proceeding further, notice the observation of the same physician, respecting secondary affections, by which, he alleges, the original dyspeptic affection is relieved. Of this, which is occasionally observable, he gives a somewhat imperfect explanation: and one might be led from his words to infer, that, on the falling out of the secondary affection, the stomach almost recovers its original vigour. But the apparent relief (for it is only apparent) which ensues in the primary stomachic affection, after the occurrence of a secondary one, is generally owing to the mere fact of the former having passed into its chronic stage; the real vigour of the stomach being, however, impaired, and that of the system generally.

Sympathetic affections of the Heart in Indigestion.—In many of the forms of dyspepsia, the heart and its action are but slightly and occasionally affected, and that too only in the advanced stages of the disease.

But in cases in which the heart is already organically diseased, and even,

sometimes, when we have reason to believe it healthy, we find that it is materially affected by derangements of the stomach.

1st. Flatulent distension of the stomach may produce pressure on the aorta, or on the vena cava inferior, arresting the flow of blood in either tube. The latter accident will tend to produce a vacuum in the right auricle and ventricle: the former, to cause distension of the upper part of the aorta and left ventricle, making it labour, and, if protracted or frequently repeated, tending to produce hypertrophy. In this way it is, that the apoplexies of full meals are produced: the blood, in its course to the lower extremities being impeded by the pressure of a heavy stomach on the aorta, is forced to the superior part of the body, and the carotids too strongly inject the brain.

2nd. If, in the progress of the dyspeptic affection, the liver become diseased, and its circulation being impeded, a less than the due quantity of its double circulation is returned to the heart, the first of the two effects just pointed out, as resulting from flatulent distension of the stomach, will ensue, causing a disturbed action in the right cavities of the heart.

3d. Indigestion may affect the heart by the route of the nerves. It may do this through the intercommunion of the various parts of the sympathetic itself; the splanchnic nerve, for example, conveying irritations to one part of the ganglionic circle, the cardiac nerves reflecting them on the heart; or the vagi nerves may be the channel.

Sympathetic Affections of the Lungs.

—There is more than one mode in which derangements of the digestive organs may affect the respiratory ones, inducing first inflammatory action, and ultimately structural change in the lungs.

1st. Gastric irritation may be propagated along the œsophagus, and, if long continued, may engage the larynx and trachea in chronic disease, which may descend, and, after a time, affect the substance of the lungs itself.

2d. Enlargement of the liver, and frequent flatulent distension of the stomach, may irritate the lungs, by impeding its play; and structural change of the liver, by rendering that organ inadequate to eliminate duly from the blood certain of its *effete* ingredients,

may throw on the lungs the burden of doing this, by the law of *antagonism* pointed out by Müller, and thereby give rise to irritation in the respiratory organs.

3d. Irritation of the diaphragmatic nerve by an enlarged and inflamed liver may be transmitted to the medulla oblongata, where it has its origin, and be reflected on the pneumo-gastric nerves emanating from the same place; which may thus be the channel of secondary morbid manifestations in the lungs. Adhesions of the liver to the diaphragm, by irritating the phrenic nerve, may cause the same result.

It would be easy to show how the skin and the *sensal* organs are affected by the qualitative derangements of the blood caused by dyspepsia, as well as by nervous sympathy with the organs of digestion, when in a state of irritation or debility. It would be likewise easy to show, and to illustrate by many cases, how other organs, when deranged, sympathetically influence the digestive processes, inducing what may be called secondary indigestion.

As regards the *cutaneous surface*, it may be observed that paralysis or constipation, more or less complete, of the skin, and the consequent interruption of a so extensive and important eliminatory outlet, must affect the gastric, hepatic, pancreatic, and intestinal secretions; in other words, the process of digestion. The liver is the organ which in this case most suffers. Irritation of the skin may also affect the digestive organs through the peripheral branches of the sympathetic. The inflammation of the mucous membrane of the stomach and intestines which follow large scalds or burns of the skin, are referrible both to the stoppage of cutaneous exhalation from an extensive disorganised surface, and also to nervous irritation propagated by the route just noticed from the periphery to the centre of the body. And the occasional retrocession of morbid action, in eruptive fevers, is not always chargeable on rash exposure to cold repelling the disease inward, as the nurse will tell you, but partly, at least, to the exantheme so profoundly and extensively affecting the cutaneous surface, as gradually to interrupt the respiratory function; thus forcing some already irritated and enfeebled organ to take on it a dangerous *antagonistic*, or (to use what is

perhaps a more proper word), a supplementary or substitutive action.

Filthy states of the cutaneous surface, may, it is obvious, by interrupting its function, disorder the digestive organs.

The above facts enable us to reconcile the apparently opposing statements of dyspeptics; some alleging that cold improves their digestive powers; others that heat does so. In cases of gastric irritation, with a hyperæmic state of the mucous surfaces, heat, acting on the skin, and producing the effect of a great derivant or counter-irritant, will no doubt relieve central congestion and irritation. In cases of indigestion, depending on atony and anæmia of the stomach, external cold, forcing the blood to internal parts, must improve the action of the organ, for where there is vascular determination, volume, and activity, *not* of an inflammatory character, there secretion and muscular action are improved.

The lungs may influence the digestive organs, by irritation existing in the mucous membrane of the former being propagated down the œsophagus on the mucous membrane of the latter. I believe that slighter degrees of gastric irritation, shades of sub-inflammation, are often thus transmitted from the thoracic to the abdominal mucous surface. Again, the *par vagum*, irritated in the lungs, where the higher branches are given off, may manifest functional derangement in its gastric divisions; or the sympathetic may be the route of sympathetic functional disorder of the stomach. There is another cause, which though operating extensively, ought not the less to be noticed, because its effect is of a very general nature. I refer to pulmonary congestion, it matters not from what cause. It must have a tendency to beget abdominal plethora and hyperæmia of the mucous surfaces of the stomach and intestines, which, though commonly reckoned among mere functional derangements, because not strictly structural, yet, when continued, have all the ill effects of structural disease.

"It is difficult," observes Dr. Johnson, "to account for the production of dyspepsia by disease of the heart, except on the physiological principle of sympathy." Now, Mr. Langston Parker, in his work on the "Stomach in its Morbid States," has pointed out one way. "On examining," writes this

gentleman, "into the state of a patient labouring under what he himself considered mere prolonged and obstinate indigestion, I discovered he had extensive valvular disease of the heart, and that his stomach disease resulted from an unusual quantity of blood retained in the mucous coat of the stomach and its veins, from a mechanical obstacle to its free return to the heart, caused by disease existing in that viscus." But the cause here indicated by Mr. Parker probably extended its influence further than the mucous coat of the stomach. Doubtless, the liver, and the mucous coat of the duodenum and intestines, were kept in a condition of vascular plethora, as well as the stomach. Here, then, is a most distinct and satisfactory exemplification of one of the modes in which cardiac disease may affect the stomach and the abdominal organs generally.

Next, as regards dyspepsia sympathetically induced by derangement of the cerebro-spinal centres, we may take Müller's explanation. "When these central organs," he observes, "are exhausted by want of rest and sleep, or by the impression of acute diseases, the dependence of the organic viscera on them, which is not observable when the supply of nervous influence to the sympathetic is arrested only for a short time, becomes as evident as in parts supplied by cerebro-spinal nerves." Hence, intense or prolonged mental exertion or moral excitement, exhausting the brain; extensive and severe affections of the skin, draining the central nervous power, through the cerebro-spinal nerves, and causing, through the cerebro-spinal axis, reflex irritability of the sympathetic, and, through the sympathetic, of the digestive organs, or else diverting from the organic nerves the reinforcing reparative influences of the nervous centres, may give rise to dyspepsia. Thus it is, that, through the medium of the brain and its prolongations, MIND and its operations influence digestion.

We would, in conclusion, observe, and the remark is practically important, that digestive derangements, though coexistent with hepatic disorder, with abdominal plethora, with pulmonary disease, with muscular debility, may yet be neither the cause or the consequence of this. One common cause may have given coëtaneous birth to the

stomachic, hepatic, pulmonic, cerebral derangement: and the cure of all is to be sought in the removal of that common cause. Thus, sedentary habits, undue confinement, whether from indolence or necessity, deprivation of free and pure air, and of exercise, are examples of causes which may produce all the various affections just enumerated, conjunctively. In such cases, any treatment directed to the stomach exclusively, with the hope of removing its derangement, and also the other ailments supposed to be thereby induced, must evidently be futile, unless in that treatment be included the removal of the common cause which occasions the various affections. Before instituting treatment, we are therefore ever to consider whether the stomachic disorder be really the cause of other coexistent derangements, or merely an effect, in common with them, of some general unfavourable agency, to which the patient is exposed.

Symptoms of Indigestion.—There is so much of an individual character in the cases of dyspepsia which present themselves, that it is extremely difficult to give a generic portrait that will be of much service. The chronic dyspeptic patient has not uncommonly, in his countenance, an odd mixture of peevishness and reserve, or of timorousness. Whether he be emaciated and pale, or otherwise, there is generally something in his appearance which satisfies the physician that his case is not of a violent or urgent kind. The fluency, fulness, and oftentimes the extreme precision and intelligence, with which he states and endeavours to explain his symptoms, are remarkable. That statement not unusually is, or seems to be, over-coloured: this may be owing to the fact, that the frequent recapitulation of his ailments among his own friends having ceased to interest or alarm them, he deems a strong picture necessary to arrest fresh attention. Hence, his sufferings are usually represented as unprecedented; we are informed of the various plans of diet which have been suggested to him, and what benefit did or did not accrue from each; what changes he has from time to time made in physicians and medicines; what benefit he derived, or failed to derive, from this or that watering-place; his growing disrelish of life is hinted at; he perceives a gradual

loss of intellectual power; he proposes a total change of life and occupation; thinks, it may be, of exchanging rural quiet and repose for active civic scenes; more serious still, the instances are by no means rare, in which the patient avows that his sufferings have been such, and so long continued, as to have suggested to him, at times, the idea of self-destruction. Such, in general, are the inaugural declarations of the chronic dyspeptic to the new physician whom he visits for the first time.

We may or may not detect in the patient's appearance adequate grounds for the dismal narrative. The emaciation, which sometimes does exist, is, in many cases, owing to the abuse or mismanagement of purgatives. Nor, if what Doctors Copland and Johnson state is true, are we to look, in all cases, for obvious visible signs of disease. In the article, *Digestive Canal*, of his Dictionary, the former observes:—"I must contend that disorder of the digestive processes frequently cannot be referred, after the most patient investigation, to either of the sources (*i. e.* irritation or structural change), but must be imputed to altered states of the vital or nervous powers." Dr. Johnson expresses himself much more strongly. "The very worst forms of this disease," he writes,—"forms, in which the body is tortured for years, and the mind ultimately wrecked, *often exhibit no sign or proof of indigestion in the common sense of the word, the appetite being good, the digestion complete, and the intestinal evacuations nearly natural.*" We have some doubt if cases of this kind ought to be ranked at all under the head of indigestion, and we have some notion that the cases which Dr. Johnson must have had in his eye, when he penned the paragraph quoted, must have been those of pure hypochondriasis, or of insanity. We cannot perceive how it can be legitimately presumed that dyspepsia is the ailment, when there is "no sign or proof of indigestion," when "the appetite is good, the digestion complete," &c. It has been more usual than is generally suspected, to confound hypochondriasis and some forms of insanity with chronic indigestion.

The symptoms of indigestion may be conveniently divided into those of occasional, and those of permanent dyspepsia, and both of these may be subdivided into symptoms manifested along

the *prima via* itself, and the adjacent organs, and those manifested in remote parts and organs.

Occasional indigestion lasts ordinarily from one or two, to six or eight days. The symptoms referrible to the digestive organs themselves are as follows. There is a feeling of weight and distension at the pit of the stomach. This lasts for three or four hours after the meal, and then generally ceases to be felt. But just when the sensation of fulness is beginning to subside, ill-odoured flatus is apt to rise from the stomach, affecting disagreeably the olfactory nerves. This flatus sometimes forces before it to the upper part of the throat, or even into the mouth, part of the contents of the stomach, the smell and taste of which are rancid. Or this expulsive effect is owing to a slight disposition to vomit; the deranged contents of the stomach acting on itself somewhat as a mild emetic. By and by, however, all this commotion subsides, and the sensation of fulness passes. But, in proportion as the stomach is relieved, a similar feeling of distension is felt obliquely downward and to the right of the organ, and gradually through the whole abdomen, and there is not uncommonly considerable flatulent distension of the bowels. There are in the evening symptoms of what the French call *malaise*, corporeal and mental, and the night is characterised by unsatisfactory sleep, with startings and painful dreams. Next morning the patient rises unrefreshed; perhaps flushed or heated; perhaps with an obscure sensation of burning or pain at the pit of the stomach; generally with a tongue loaded more or less at its back part, or red and sore round its edges and its point, and with an ill taste in his mouth. He is often thirsty at this time; and this feeling, along with that of heat in the stomach, prompts him probably to take a draught of cold water the instant he steps from bed, and to feel at breakfast a greater appetite for the tea than for the solid materials of that meal.

"To produce such indigestion," observes Mr. Herbert Mayo, "it hardly seems necessary that anything unwholesome should be taken. The party may have been in the habit of eating the same kind of food without its having disagreed before; so the fault in such cases is in the stomach which is accidentally out

of order, and then the least digestive part of an ordinary meal resists digestion and becomes an irritant."

Such is a sketch of the first eighteen hours of an occasional fit of indigestion: but it is to be noticed that the pain and burning sensation in the stomach, slight at first, may increase during the second, third, and subsequent days, and great tenderness on pressure then be experienced. The bowels may become irregular, and the urine show red, brown, or white deposits, or be discharged turbid, and in small quantity.

The symptoms of permanent indigestion may, in general, be stated as consisting in those already enumerated becoming durable, though, as regards some of them at least, without much or any increase of intensity, and in the addition of certain other derangements not remarked in the occasional form. Thus the pain and heat of stomach, and the tenderness felt on pressure there, frequently become less after permanent has succeeded to occasional indigestion. But the pit of the stomach and the upper part of the abdomen are often now fuller than heretofore. The tongue presents a variety of appearance. It is sometimes enlarged with a glairy and deeply fissured surface; sometimes covered with a white froth; sometimes with a dirty white or yellow fur; sometimes with a thin layer, resembling the bluish white pellicle which forms over imperfectly skimmed milk. It is sometimes red and rough, with many small nipple-like points, resembling those on the tongues of the carnivori: sometimes dry and shrivelled, sometimes purple. The edges of the tongue are often sore and blistered-like, and the throat feels as if swollen and narrowed, so that deglutition is performed with some difficulty. This last symptom, always of troublesome import, along with the sensation of distension of the stomach, which usually accompanies it, is, I believe, generally owing to a hyperæmic state of the mucous membrane of the parts.

The stomach is now seldom at ease; seldom free from sensations of burning, weight, rawness of internal surface, distension, &c. As the duodenum begins to participate in these states, the sufferings of the patient, of course, augment. The acute angle of this intestine, and the upper course of it

latter half, favour the occurrence of impaction, particularly if, in addition to this natural predisposition, there be debility of the bowel, and if the bile is not flowing duly. Dr. Johnson seems to doubt Dr. Philip's allegation as to the distension of the duodenum being ever due to anything but flatus, but doubtless it is sometimes owing to impaction; an occurrence which may even happen in the stomach. "We shall find very frequently," say the authors of Bell's Anatomy, "food of difficult digestion lying in the stomach, and oppressing it for days, *while food more recently received may have undergone the natural changes*, and have, at all events, passed through the stomach into the duodenum." The stools now begin to be disordered, and present every variety of consistence and appearance. They are of light-clayish colour, or white, light yellow, brown, dark brown, blue, green, deep brownish-red; sometimes as black as if iron had been profusely taken. As regards consistence, they are dry, tenacious, or adhesive, lumpish, frothy, liquid yellow, watery. Sometimes they show undigested masses, sometimes bits of fat, sometimes long stringy, tubular mucous productions. Sometimes they have no smell, and this is a bad sign; sometimes a heavy animal odour as from a decaying corpse; sometimes they are awfully fœtid. They are almost always less than natural, are voided with straining, and without the sensation of the bowels being fully evacuated. The bowels are at once irritable and obstinate. A moderate laxative sometimes causes an alvine torrent; again, a powerful cathartic fails. Meanwhile, a slow accumulation of excrement in the cœcum is often taking place, and may cause many obscure symptoms and sufferings. This accumulation is most apt to occur in the ascending colon, and this therefore it is which gives that greater fulness and firmness to the right side of the belly, which Dr. Philip speaks of.

Both Johnson and Philip speak of a spasmodic affection of the lower extremity of the *sphincter ani* mimicking stricture or some structural affection. To this my attention has often been called. I would add, that a relaxation, and a tumidness, with a tendency to protrusion of the lower bowel, are not less common, and are even a more an-

noying symptom than the one just described. Tenderness of the muscles of the belly often exists, and if mistaken for deep-seated inflammation, alarms. In my next paper, I shall describe the symptoms of chronic indigestion manifested in organs other than the digestive ones.

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[To be continued.]

BRIEF ANALYSIS OF PAPERS RELATING TO VARIOUS POINTS OF PHYSIOLOGY, MEDICINE, AND SURGERY,

PUBLISHED DURING THE LAST TEN YEARS.

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(*Physical, Humoral, and Nervous agencies in Health and Disease.*)

NEXT to the better and rarer sort of treatises, no contributions to medicine are so desirable as clear digests of the scattered views with which the profession abounds and is almost ready to be overwhelmed. It is essential that these analyses should appear under some responsible name. I regard it rather as a matter of casualty that I am the first to appear in the present style instead of the more weary egotism of five hundred pages, being convinced how self-evident it will be that the interests of useful writers and careful inquirers are equally concerned in the general adoption of such a method. The public is the judge of truthfulness, and posterity the arbiter of originality.

Contents:—A. Of General Principles—Etiology, Therapia. B. Nerve-functions, Disorders—Sympathy. C. Circulatory—Heart, Artery, Vein, Lymphatics. D. Respiratory. E. Thyroid Gland, &c. F. Digestion, &c. G. Hernia, &c.—Umbilicus. H. Strictures, &c.—Prostate. I. Ossifications, &c. K. Tendon, Tension, &c.

Of General Principles.

1. The prime doctrine of medicine appears to be, that health consists in a certain balance of the functions; and, that beyond their salutary oscillations, periodic changes, and mutual correlations and compensations, disturbance arises; first in one organ or element, then in another.

2. Diseases have a very definite course, and mostly tend to spontaneous recovery—which judgment aids or error perverts. (Vide First General Laws, &c. London, Churchill, 1840.)

3. Chronic inflammation is acute disease varying (?).

4. The unsteady course of many affections depends on relapse from cold, &c.;—one, acute or chronic, alternating with another; with intervals of recovery. Vis medicatrix is modified correlation or compensation. Metastasis is when one part is less favourably circumstanced than another. (Vide Disorders Variable, and Practical Inferences hence deducible, Guy's Hosp. Rep., No. xi.)

5. The rudimentary idea of irritation (whether as cause or process of disorder) should vary with the health and constitution, as when an injured part repairs or inflames, or when aciné fluctuates. Catarrh, secretory irritation, nutrition, or absorption, occur, according to the state of the blood. Pain, scald, and extravasated fæces, cause distinct processes. There are no simple sympathies. Worms are mostly harmless. The tongue, nares, skin, anus, gums, cough, &c., indicate chiefly the dispositions of the blood, for nutritions, &c. Epigastric blows, shocks, brain and spine irritations, vomiting, excitation, hysteria, and ischuria, when analysed, are evidently compound processes. (Vide Irritation, Med. Gaz., 1843.)

6. See also, Constitutional Irritation, or General Disturbance. (Ibid. 1843-4.) Introductory considerations—a plan of the relation of the animal functions. Humoral agencies and their advocates. Varieties of assimilation,—all changes in the blood. The influence of the generative functions, of exercise, of the capillaries, and of the arteries, &c., tending to disease and recovery.

7. How to analyse the varieties of irritation, which depend on the blood, as cachexiæ, fevers, and repairs; also inflammation; its differences, local and general. (Ibid. May 1844.)

8. Organizable (?) deposits are but growths.—Symmetry in disease is humoral, &c. We may go far to analyse depression, and sympathies, general and contiguous, &c. (Ibid. June 1844, two papers.)

9. Local inflammation not so much a cause as a concomitant of fever;

analysis of Louis' morbid anatomy of typhus. There are preparatory deteriorations of the body for fevers in every various grade, as also for inflammations. (Vide Humoralism in Fever, Inflammation, and Irritation, *ibid.* July 1844.)

10. The course of foreign bodies shut up in our tissues, or travelling, or being discharged, depends much on the bodily health—the state of the blood, &c. (Vide Story of a Grain of Sand, to illustrate the study of Practical Pathology, Prov. Med. Surg. Journal, Aug. 1844. *)

General Etiology and Therapia.

11. Besides the admitted effects of cold on the bodies of animals and vegetables; and in common chemistry, much remains to be considered, the heat, the pulse, and the want of safety-valve, seem to maintain pretty equal proportions. Heat depends on many different functions, not on one. We discover five influences from cold which affect the course of health, disease, and remedies, specifically. States of the nerves, congestions, delay of functions, reaction (irregular) diathesis, fever, wasting irritation. (Influences of Cold, Med. Gaz., June 1843.)

12. Five effects of heat. In delicate health easy play of the functions needful. Exciting the superficial functions of the body tends to lessen nutrition and secretion within. We may dissect the influence of warm-bath, clothing, and the course of sudden relapses. Many cases benefited by warmth, others oppressed. (Influences of Heat, *ibid.* July 1843.)

13. Warmth liberates vital and chemical functions. Warm climates excite the surface most, abstract internal stimulus; hence, internal diseases are less frequent and more rapid, whether fatal or not, and great injuries are better repaired. Infants, the aged and delicate, and those who have half lost a viscus, much safer in warm countries. (See Climate, with reference to Health and Disease, Prov. Med. Journ., July 1843.)

14. The capillaries furnish all nutrition and secretion, the nature of which depends much on the blood, which varies continually, consistently with health, the essence of disease, or the

* A peculiarity in this case was a persistent dry sinus leading to the secluded solid, which was finally cast out by the accumulation of skin-scales in the cell.

means of recovery. Many nervous fallacies. The blood regulates absorption, or arrests secretion, and balances the functions after perversions. (Vide Humoralism of Therapeutics, *ibid.* Dec. 1843.)

15. The nature and treatment of toothache are explained by reference to its causes, the variable state of capillaries, and their correlating and compensatory acts. The effects of drinks, posture, temperatures, inflammatory relapse, the time of digestion, abstinence, depletion, and of remedies,—locally, or through the blood, or through the nerves (?). (Vide Common Toothache, as illustrative of General Principles in Pathology and Therapeutics, *Med. Gaz.*, Jan. 1842.)

Nerve-Functions and Disorders.

16. The vessels of the head most delicate, and least distended. The face influenced by exposures. Hence, many peculiarities in head diseases. Hæmorrhages are atrophies, and so variable lupus, &c.; yet all normal nutritions are equal. (Practical Reflections, *ibid.* Nov. 1844.)

17. The sensibility of viscera little or none. Headache often (? only) external. Lesions of sensitive brain tracts are referred to the peripheral distributions of the several nerves. (Seat and Import of Headache, *ibid.* Dec. 1844.)

18. Aura, numbness and pain, in considerable variety, hemiplegic or not, with injury, hysteria, chorea, epilepsy, apoplexy, or palsy, depend on lesions of sensitive nerve-tracts in the hemisphere of cerebrum, or in their course from thence. (*Med. Times*, Dec. 1844, Jan. 1845.)

19. The cortex, commissure, and intergyal fibres, remain to intelligence (?).

20. Palsy is compression, subalation or division of motor cord.

21. Capillary disorder (hypernutrient?) of motor brain fibres approaching the pons varolii by crus cerebri or cerebelli, or beginning in the pons, is the cause of convulsions. One nerve or the spinal marrow may so convulse parts below. Many examples of disease of cerebrum encroaching on the pons on one side, first causing convulsions of the opposite limbs, and then of the whole body.

22. The same as to cerebellum.

23. Disorders in the pons, causing general convulsions. (See the Seat of Convulsions, &c., 2 papers; *Med. Times*, Oct., Nov. 1844.)

24. On reflex nervous acts, and their disturbances, and the more probable parts of nervous sympathies. (*Ibid.* July 1844.) Physics and humoralism limit nervous theories. Muscles act from distension, or reflex agency or volition. The co-ordinating cords of sympathetic motions are gathered up in the medulla oblongata; and the lower segments of the marrow have no excitomotor power in man.

The generalizers of reflex acts—views of Whytt, Mayo, Hall. Simple and reflex acts—direct or doubtful. Medulla oblongata. Exclusion of spinal cord, whose columns have various functions. (*Ibid.*)

The reflex centres apart from brain. Whytt, Alison, Hall. General doctrine of excitomotor influences simple; and derangements also. Sympathies not excitomotor. (*Ibid.*)

Induction quoad old sympathies weak—Mayo's reflex acts in the iris—Bell, Müller. Each part of a reflex arc may err. Proportion needful between causes and effects. Arcs only partially over the body; so should the diseases be—vomiting, asthma—real causes of Convulsions. (*Ibid.* and *Lancet*, Sept. 1844.)

Excito-motion in inverse proportion to the grade and maturity of the animal.

25. I have ventured to show that the sympathies of Hunter and Charles Bell may be referred variously to excitomotor, humoralism, and simple lesion of nerve-cords, in whatever parts of their course. Contiguous capillary sympathy I make to be humoral. I do not deny that some sympathy may yet be established. (*Prov. Med. Journ.*, Dec. 1843. *Med. Times*, May 1843.)

26. Lesions of the summit of the spinal marrow retard respiration and the pulse. Excessive safety-valve may cause slow pulse? (Cases, &c., *Lancet*, March, 1845.)

Causes of paraplegia in intervertebral substance. (*Med. Gaz.*, 1844.)

Circulation :—A, *Physiology*; B, *Pathology*.

A. 27. The corded valves of the heart require that the blood should

* The anterior lobe, the leg; the posterior, the arm?

throw back the curtains, and make the cords tense, and even elongate their conic muscles, before the latter can duly contract, and this action compensates systolic approximation of the ventricular walls. (Guy's Hospital Reports, No. 10.)

27. Where the valves of the heart are more than equal to the opening they close up, the curtains overlap, and present surfaces of contact whose extent varies with the energy of the circulation, and whose diseases, atrophic or inflammatory, are specific. (Ibid.)

28. The lymphatic system is constructed for rapid circulation (Ibid.)

29. The veins pulsate: a bristle applied with gum as a lever is visibly raised by a full vein. (Med. Gaz. vol. xviii. p. 530.)

30. The tricuspid is a safety-valve. The thin wall of the right ventricle yields to temporary distensions, and the valve is retracted out of place. This effect increases from birth, and varies throughout the series of warm-blooded animals, being greatest in the divers, which also have the greatest reservoir vessels. (Guy's Hospital Reports, No. 4 and 10; read before the Royal Society, 1835-36.)

31. White patches on the heart indicate points of projection, attrition, and inflammation, &c. (Guy's Hospital Reports, No. 6.)

32. The ductus arteriosus, at birth, may owe its closure to sudden compression over the left bronchus. Analogy in Reptilia. (Med. Gaz. July 1840.)

B. 33. After ligatures, arteries being empty, are weak, and so dilate.

34. The open states of the ductus arteriosus after birth are caused by obstructed pulmonary artery, or lungs, and narrowings of the aortic orifice, or arch. (London and Edinburgh Monthly Journal of Medical Science, July 1842.)

35. Similar causes of Communications between the two sides of the heart. (Two papers, Med. Gaz. Jan. 1841.)

36. Cases of Cerebral Aneurism, (Medical Quarterly Review, 1834; Aorta Transposed, London and Edinburgh Monthly Journal, Jan. 1844.)

37. The left bronchus flattened by dilatation of the left auricle. (Guy's Hospital Reports, No. 6.)

38. The nature and treatment of angina pectoris illustrated by considering the physiology of violent circula-

tion; the influences of repletion, senile changes of the heart, and of its valves; their surfaces of contact perforated or shrunken. Different states of different parts explain varieties of the disease. The pains shewn of various kinds, and the distresses.

39. Palpitation of either ventricle alone, or of both—over-full, and labouring, with or without hypertrophy. The cause,—fulness, debility or passing disorder of health, &c. See the Treatment of Dyspnœa, infra, (4 papers, Med. Gaz. 1841).

Respiratory Disorder, &c.

40. The bifurcations of bronchi are kept open by crescent cartilages. (Dr. Horner and Mr. J. King, Guy's Hospital Reports, No. 11.)

41. Dyspnœa to be analyzed. Derangements increasing with age; inspiratory effort and fatigue; besoin de respirer; suffocation; causes of dyspnœa various; the base of lungs a part in reserve; the effects of congestion, posture, repletion, exertion, cold, spasm (?), often combined; dyspnœa, with malformed hearts or bronchial obstructions. Here, and in angina, we see the mechanisms, the humours, and the nerves deranged, and remedies must unite a like triple application.

42. Summer asthma, catarrhus æstivus, or hay-fever—general disturbance, with local obstruction, capillary, &c. Many analogous affections. (Med. Gaz. August 1843.)

Sources of hæmoptysis various and special (Ibid. 1843.)

Thyroid and Perfective Assimilation.

43. The thyroid gland, composed of cells, arranged in flat lobules, irregularly compressed on the trachea in deglutition, &c. secretes albumen, which is seen to pass away by the lymphatics. (Comparative Anatomy, &c. T. W. King, and Sir A. Cooper, Guy's Hospital Reports, 1836.)

The doctrine of perfective assimilation, by spleen, thymus, lymphatic glands, &c. (Ibid.)

Stomach, &c.

44. There are various effects of gastric juice after death on the œsophagus, as well as on the left end of the stomach, which part is the especial source of the acid and digestive secretion. (Guy's Hospital Reports, 1842 and 1843, and Med. Gaz.)

Hernia, &c.

45. Most herniæ exist fifteen or thirty years before serious strangulations, which are not attributable to any new state of the sac, but to deteriorated nutritions and powers of vessels, &c. incident to the age (45 the mean). Hence, also, the peculiar course of the disorder locally and generally. Prompt surgery, and gentle measures, locally and generally, are the grand indications. The age of serious strangulations less than that of *fatal* cases. Various statistics prove the like, and the kind of local visceral changes also. (Guy's Hospital Reports, Oct. 1838; Med. Gaz. 1843.)

46. Persistent diverticulum ilii, discharging at the umbilicus, &c. (Guy's Hospital Reports, 1843.) Anal Muscles. (Ibid. No. 11.)

Stricture, &c.

47. The spasm of urethral stricture is injection and tumefaction; thickening, contraction, and induration, are results. Mostly there is a combination of these states, one set being essentially variable, the rest permanent; and the main treatment should be constitutional.

48. The doctrine of variable diseases explains, as it is illustrated by, old prostate disease, which is catarrhal and recurrent.

The mean length of stricture (fixed) is full an inch and a half. The bulb is the chief centre.

Instruments cause cicatrices, but cannot dilate them permanently—why they cannot seal up the canal; statistics of stricture—age—duration—end—sites, &c. Capillary injection (action &c.) subsiding spontaneously, or with medicine, physiological. (The Nature and Treatment of Urethral Strictures, and Mischief of the Sound, four papers, Lancet, 1843-4.)

Urinary Obstruction in the Fœtus (Guy's Hospital Reports, No. 5.)

Ossification, &c.

49. The repair of fracture is like that of grazed bone, or the course of exostosis, or even the mere growth of bone. The main supply of blood is from without, which, in about four or five days, deposits new bone on the old, and finally welds fragments (as distinct bones) together. In the repair of a stump, cancer of bone, or hydatid, &c.

bone upon bone, as earth abounds in the blood or not, is the rule quoad new bone.

Pressures and attrition also guide the degree of activity. There may be too little or too much action, deposit, or absorption. Ossific cancer is specific; in the lung, &c.

Periostitis begins almost as soon as the injury has been inflicted. The figure of the reuniting bone guided by periosteum, &c. (Cyclopædia of Practical Surgery, "Fracture," Appendix.)

Open fracture (compound) repairs by the simplest modifications of the above process. Peculiarities as to flat bones; cancelli, neck of femur, epiphysal arteries, neck of scapula (Ibid, and Guy's Hospital Reports, October 1844.)

The periosteum, original, or derived from granulation, adhesion, or cicatrization, is the chief source of the nutrition and repair of bone; bone upon bone increasing till the fragments are cemented by new bone, and till motion and strain cease to excite activity. Old bone, inflammation and earth in the blood, are the essentials. Absorption removes that which lacks tension, and what is unduly pressed, or too feebly nourished. (Ut supra.)

Patella broken across, and united by bone. (Guy's Hospital Reports, No. 13.) Episternal bones. (Ibid. No. 11.)

Tensions.

50. Tension has to do with the growth, excavation, repair, and wasting of bone—with its form, and that of each cancellus. To it I refer the ligamentous reunion of divided muscle, tendon, or ligament, as occasionally of bone. It explains the order of initiative ossifications throughout the fetal body, and that of the consolidation of the various epiphyses of the bones (excepting the effects of breadth of union-surface, &c.) It seems equally to affect the tunics of bones, nerves, vessels, ducts, and organs. Fasciæ, elastic tissues, and diseases. Varix is undue daily tension, and defective nightly repair. (Med. Gaz. April, 1844; Med. Chir. Rev. Oct. 1844.)

The decline of tension, or even excessive tension, accounts for isolations of parts of bones. (Prov. Med. Journ. Aug. 1843.)

Bedford Square, April 1845.

RECORD OF CASES.

By THOMAS MAYO, M.D. F.R.S.

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[Continued from p. 923, vol. xxxv.]

On Scarlatina with Collapse.

IN my last contribution* I added two cases of scarlatina, the treatment of which I characterised as "unsatisfactory." It seems desirable to endeavour to clear up the points in which they deserved this epithet. Each ran its course with rapidity; one in little more than three days; the other in rather less than two days. In each there was very partial eruption, and very rapid collapse, unexplained either by urgency of head symptoms or ulceration of the fauces. The general form of the disease to which they belong is not very unfrequent, but I entertain doubts whether it deserves a distinct place in any nosological arrangement of the species of scarlatina; for I am inclined to believe that it is a form of the disease produced by treatment, in respect to those points which are peculiar, namely, its rapidity and collapse. In each of these cases, and in others, which have been described to me as running a similar course, great and immediate pains had been taken to clear the primæ viæ. Now it is very questionable whether this precaution, no doubt a desirable one, if the means adopted are safe in relation to the character of the disease, is not carried out as a preliminary form of treatment too invariably in our practice?—whether, in the cases before us, a form of scarlatina, which would otherwise run a dangerous but not a hopeless course with the more marked phenomena of scarlatina anginosa, is not hurried at once by this treatment into an early state of fatal collapse?—whether the humoral pathology of the case is not dangerously interfered with?

Speaking generally of the treatment of scarlatina, it is observed by Sauvages, that "venesection, cathartics, diaphoretics, and stimulants, should be avoided." The value of this remark is certainly lessened by its inclusiveness. We are inclined to question the skill of a physician who forbids *all* treatment. But, undoubtedly, since the period at which Mr. Abernethy made that branch

of constitutional treatment popular, which consists in unloading the bowels and the liver, *that* has been the starting point of almost all our treatment of acute as well as chronic disease.

An autopsy was witnessed by me at the Infirmary about two years ago, which forcibly suggests to my mind the possible evils of this practice, if rudely pursued in scarlatina. This person, a female aged about 25, well made, and apparently in previous good health, the patient of my colleague, Dr. Clendinning, had died rather suddenly, and with no prior suspicion of danger, as I was informed, about the middle of the eruptive period of scarlatina. The eruption had been well out, and there was nothing to account for death in the extent of ulceration of the tonsils, &c. The eruption had come well out, I say—somewhat too well, indeed; for it completely bespread the mucous membrane of the small intestines, and, in some degree, of the large intestines. Thus there was probably too large a surface of the body, internal as well as external, unfitted for its vital duties; and thus, not improbably, the disease became mortal. Now the good management of my colleague makes it unlikely that any undue interference in the kind of treatment, or any neglect of treatment, should have occurred in this case. But in this morbid state of the mucous membrane, assuredly an irritating purgative might have effected a most dangerous aggravation of the danger of the patient, great as it was at any rate.

Of all the remedies that have been brought forward as effective in scarlatina, none advance a better supported claim than cold affusion, as proposed by Dr. Curry. This remedy, for its application, requires that the high temperature of pyrexia should be well established in the skin; and the possibility of its application may be prevented by a line of treatment which anticipates, as it were, or subdues pyrexia. Now it has been remarked, that the subsequent experience of physicians has not confirmed the views of Dr. Curry in the extent laid down by that eminent author as to cold affusion in fever. May not the remark which I have just made in reference to scarlatina be generalised? Is it not conceivable, that the deep-seated tendency of the English practitioner *always* to commence the

* Page 923, vol. xxxv.

treatment of fever with aperient measures, may have rendered the experiment of cold affusion thus far unsuccessful in fever generally?

For my own part, I think the neglect which Dr. Curry's discovery has met with infinitely discreditable to the medical science of England. We are now being indoctrinated into its mysteries by a German peasant and his irregular followers, after repudiating them as offered by the great discoverer himself.

I should perhaps be uncandid, if I closed this statement without admitting that the opinion of Dr. Curry was unfavourable to the appropriateness of his system to a form of scarlatina with early collapse, of which he gives a very graphic description.

"There is," says Dr. Curry, "a form of scarlatina to which the name of purpurata ought rather to be given; for the efflorescence is of a purple, not scarlet hue, in which, though the throat be deeply ulcerated, the pain and difficulty of swallowing are comparatively small, for the passage is kept open, and the sensibility destroyed, by the progress of gangrene. In such cases extreme feebleness and rapidity of the pulse, and great fetor of the breath, appear even at the commencement of the disease. The heat does not rise much above the standard of health. Great debility, oppression, headache, pain in the back, sometimes purging, accompany its rapid progress; the patient sinks into low delirium, and expires on the second, third, or fourth day. This disease is to be treated by large quantities of bark and wine, and the other remedies employed in gangrene. The cold affusion is scarcely applicable to it, and the tepid makes little impression on it. In my experience, indeed, all remedies have been equally unsuccessful."

Now it would appear, that in those cases of Dr. Curry, to which he considers cold affusion inapplicable, there was no hot or pyretic stage completed. But of the two cases in my last report, the latter certainly had a pyretic stage, as witnessed by myself; and the former had been treated conformably to such a supposition by a very intelligent practitioner.

[To be continued.]

MEDICAL GAZETTE.

FRIDAY, MAY 23, 1845.

We are now enabled to present our readers with those clauses of the Physic and Surgery Bill which have been added in committee. These, it will be found, have produced material changes in the measure. The first clause which has been added (17), is that which refers to the constitution of the preliminary board of examiners. By this, it is provided:—

"That a joint Medical and Surgical Board of Examiners shall be established in England, consisting of Six Physicians, to be chosen from time to time by the Council of the Royal College of Physicians in England, and Six Surgeons, to be chosen from time to time by the Council of the Royal College of Surgeons of England, who shall severally hold their appointments during the pleasure of the Council by which they shall have been severally chosen, and that no person shall be qualified to offer himself for examination by the Royal College of Physicians of England for the purpose of being registered as a Physician, or by the Royal College of Surgeons of England for the purpose of being registered as a Surgeon, or by the Royal College of General Practitioners in Medicine, Surgery and Midwifery of England, for the purpose of being registered as a General Practitioner, until he shall have been examined, under the direction of the Council of Health, by the said Medical and Surgical Board, and shall be by them admitted to offer himself for such further examination by the Examiners of the College to which he desires to belong; and the fee for such previous examination shall be such sum as shall be from time to time fixed by the Council of Health, not exceeding Two Pounds; and the said fees shall be equally divided between the said Colleges, who shall be empowered to make thereout such fixed allowances to the Examiners as to them severally shall seem fit, subject to the approval of the Council of Health."

It will thus be seen, as we intimated last week, that the Board will consist entirely of Members of the College of Physicians and Surgeons. They are to be chosen by the Councils of the respective colleges, and they are to hold their appointments during the pleasure of the said Councils. The duties of the Board will consist in examining, under the *direction* of the Council of Health, all who intend to enter the profession; but the kind of examination which the candidate will have to undergo, is not stated. A misconception appears to have arisen already respecting the functions of this Board: it has been supposed that after passing the preliminary examination, every candidate intending to be either physician, surgeon, or general practitioner, would have to be examined by the College of General Practitioners: but it will be seen that this is not the case. The only examination common to all is that of the Preliminary Board. Each candidate will then go before the College of which he wishes to become a member: hence physicians and surgeons will be required to undergo a double examination, while to a general practitioner the two examinations will be probably no more than they have now to encounter in passing the College of Surgeons and Apothecaries' Hall. There is, however, nothing to preclude a general practitioner from going before the Colleges of Physicians and Surgeons at a subsequent period, provided he shall have attained the age of 26 years, have studied his profession five years, and in reference to the College of Physicians, have graduated in some University.

Thus, then, this clause will, for the first time, impose a condition upon *English* physicians and surgeons, from which they have hitherto been exempt, *i. e.* of undergoing *two* examinations. By this it is probably intended to test

the knowledge of a candidate in each branch of the profession; for henceforth no candidate can be examined by either of the Colleges, until this preliminary board has given its consent, and the mere fact of his having passed this preliminary examination will not entitle him to registration. There will be a separate fee for this examination, which will not exceed two pounds.

The 18th clause is of considerable importance to those who are now engaged in studying their profession, and to those who may commence their studies before the passing of the Act. In order to prevent the new regulations from pressing heavily upon them, power is given to the Council of Health of dispensing with such provisions of the Act as to them shall seem fit. There is no reason to doubt that this clause will be fairly and liberally interpreted by the Council.

Some changes have been made with respect to registration. Every registered practitioner will be compelled to send his name, place of abode and date of testimonial, to the Council in the month of September (instead of January) in every year, or his name will be struck off the register. The fees for registration remain the same, and are only to be paid once.

Under the 14th clause, instead of the title "Licentiate of Medicine and Surgery" we have that of "General Practitioner" substituted; and it is expressly ordered, that the candidate shall furnish proof, before examination, that he has applied himself to medical and surgical studies during at least *five* years. No exclusive privilege is given to physicians or surgeons respecting appointments to public institutions. Under the 32d clause, registered general practitioners are qualified for such appointments; and they alone (34), will be entitled to recover charges for medical and surgical advice in any court of law. Clause 36

fixes a penalty of twenty pounds upon any one who shall act or practise as an apothecary in any part of England or Wales, unless he shall have been registered by the Council of Health, as a general practitioner in medicine, surgery, and midwifery; but this clause does not extend to those who were in practice as apothecaries before 1815, or to those who hold the present license of the Apothecaries' Society.

The clause respecting false pretences of qualification (38) goes a little farther than we had been led to infer from the speech of Sir James Graham, as the following extract will show:—

“Every registered person who shall take or use any name or title belonging to a class in the Registry to which he does not belong, or implying that he is a Fellow or Associate of any College to which he does not belong, shall be deemed guilty of a Misdemeanour in England and Ireland, and in Scotland of a crime and offence, and being convicted thereof, shall be punished by fine or imprisonment, or both, as the Court before which he shall be convicted, shall award.”

Thus, it will be seen, that every registered person must keep himself within his own class,—the general practitioner will not be allowed to assume the title of a surgeon or physician. With regard to all unregistered persons, the prohibitions remain the same as in the former measures. Doubtless, as we have before hinted, some ingenuity will be exercised by these persons in adopting a title which will answer their purpose with the public, and enable them to evade the penalties of the Act.

On the whole, there are many improvements in this measure: but there is one remarkable circumstance connected with the examination clause which appears to us to require explanation, namely, why a preliminary Board of Examiners is instituted for England alone. Why is a medical or

surgical diploma, conveying an equal right to practise throughout the empire, to be obtained by a single examination in Scotland and Ireland, and by a double examination in England? The consideration of this question we shall reserve for a future number.

Reviews.

Guy's Hospital Reports. Second Series. No. 5. April, 1845. Edited by GEORGE HILARY BARLOW, M.D. EDWARD COCK, EDMUND L. BIRKETT, M.B., J. H. BROWNE, M.B., and A. POLAND.

This number contains the following papers:—“On the Pathology of Phthisis; by T. Addison, M.D.” Cases in Medical Jurisprudence; by Alfred S. Taylor. Illustrations of some Forms of Sudden Death from Disease, as it occurred to Nineteen Individuals in the Manchester Workhouse; by D. I. T. Francis, M.B. Report of Cases of Diseases of Children treated in Guy's Hospital in 1843-4; by Golding Bird, M.D. Reports of Cases of Injuries to the Chest.”

Dr. Addison's paper may be considered as a continuation of a memoir published in a late number of the Reports. The facts contained in it are of remarkable interest, which they derive not only from their intrinsic importance, but from the very extended course of practical investigation which has led to their development. These observations appear in so condensed a form, that they contain in almost every sentence statements which are absolutely essential to the construction of the author's main arguments; it would therefore be impossible, within our space, to give either a condensation or a complete analysis of the paper. We shall therefore content ourselves with making a few extracts.

The author considers that certain morbid appearances in the lungs which are often mistaken for the products of tubercular disease, are in reality the results of pneumonic deposit: and that “pneumonia and inflammatory tubercle are identical.”

Dr. Addison arranges the different

forms of phthisis into three classes—pneumonic phthisis, tuberculo-pneumonic phthisis, and tubercular phthisis. Of the first of these he writes:—

“*Pneumonic phthisis* may be acute; the deposits and inflamed tissues softening down and disorganizing at once, without any attempt whatever being made at induration or repair; thereby constituting one form of acute or galloping consumption. It may be acuto-chronic; of which I would distinguish three varieties. 1. The inflammation, though more or less acute, is slower and more insidious in its course, and manifests some attempts at repair, as indicated by various stages and degrees of induration. The induration, nevertheless, is not complete; the pulmonary tissue continues to be friable; and sooner or later, that is to say, in a few weeks or months, softens down, and gives rise to excavation; most frequently by a somewhat slow ulcerative process; more rarely by an actual slough of greater or less portions of the indurated but still friable pulmonary tissue. 2. Inflammation may supervene upon or around ancient induration, leading to disorganization either of the newly-inflamed tissue, of the old induration itself, or of both at the same time. Lastly, pneumonic phthisis may be chronic; of which I would also distinguish two varieties; first, that in which old indurations undergo a slow process of disintegration, giving rise to vomicae; and secondly, that very rare form of the disease, in which an insidious inflammation proceeds very slowly to convert a considerable portion of pulmonary tissue into grey induration, without any necessary excavation whatever.”

Of the second form of the disease, Dr. Addison says:—

“By *tuberculo-pneumonic* phthisis is meant a very common form of the complaint, in which, although tubercles are present, the really efficient cause of the phthisical mischief is pneumonic inflammation. In this form of the disorder, the tubercles sufficiently indicate the strumous or cachectic habit of the individual, and manifestly predispose to the inflammatory change: nevertheless, they do not, beyond this, seem to be either primarily or essentially concerned in the serious changes observed to take place in the pulmonary tissue.

“However analogous and closely allied the abnormal nutrition which produces tubercle may be to that which constitutes inflammation, we cannot, in the present state of our knowledge, admit their identity.

“The great transparency in most instances, of simple pulmonary tubercle, for some time after its development, and the total absence of any degree of surrounding opacity, are irreconcilable with the necessity of actual inflammation for its production: nevertheless, pulmonary tubercles, and the ordinary effects of inflammation, have been confounded with one another.

“Simple pulmonary tubercle is most frequently of a grey colour, vitreous-looking, or semi-transparent, moderately hard, offering considerable resistance to pressure between the finger and thumb, and is apparently homogeneous. It varies in size from that of a mere point, to that of a mustard-seed, and rarely exceeds the latter.

“To these tubercles, by way of distinction, I would apply the term *sthenic*. They are comparatively little prone to disintegration; a tendency to which, is indicated by yellowish opacity and loss of cohesion.

“In other instances, simple pulmonary tubercle is, from the first, and however minute, of an opaque white, or boiled-rice colour; sometimes with a faint tinge of yellow; softer and more friable than the above; and occasionally attains a somewhat larger size. To these I would apply the term *asthenic*. They are much more prone to disintegration.

“Although no precise line of demarcation can be drawn between these two varieties of simple pulmonary tubercle, the one or the other is observed to preponderate in different cases of phthisis. The sthenic may, by deterioration, assume the character of the asthenic, but not the converse; the uniform tendency of all tubercles being retrograde, or towards loss of cohesion and disintegration.

“It is the sthenic variety of tubercle that usually preponderates in the tuberculo-pneumonic phthisis now under consideration.

“The apparent growth and increase of size of simple pulmonary tubercle, beyond that specified, depend upon changes taking place in adjacent cells, either from the development

of additional tubercles, or from inflammation.

"When tubercles are present in the pulmonary tissue there exists a great proneness to increased vascular action, congestion, or inflammation of the lungs themselves, and of their appendages, the larynx, trachea, bronchi, bronchial glands, and pleuræ. This tendency is, however, most strongly marked in the immediate vicinity of the tubercles.

"The commencement of this inflammation, either in the pulmonary tissue itself or in the bronchial tubes, is the ordinary commencement of tuberculo-pneumonic phthisis; and hence it is, that most of the symptoms and physical signs of phthisis may manifest themselves, without evidence of a primary change in the tubercles themselves, being discoverable after death.

"The inflammatory change which take place in tuberculated lungs resemble those resulting from inflammation of the lungs without tubercles.

"Although the red hepatization occurring in tuberculo-pneumonic phthisis very often passes quickly into softening, and the consequent formation of a cavity; nevertheless, when actual albuminous matter is thrown out, it, like that resulting from pulmonary inflammation without tubercle, usually manifests some attempts at repair, as indicated by more or less hardening and contraction of the deposit itself, and of the pulmonary tissue into which it is effused. These results of inflammation have been, very commonly, but erroneously, regarded as mere varieties of tubercular infiltration.

"It is the softening of ancient pneumonic indurations, or of the hepatizations which precede them, that constitutes the principal source of disorganization and excavation in tuberculo-pneumonic phthisis."

The author, however, adds:—"It is but just, and of some importance to admit, that although the general tendency to repair an induration in pneumonic deposits, and the absence of it in tubercle, are strongly marked, and sufficiently distinguishable, it is sometimes difficult or impossible to pronounce with certainty whether the change in the pulmonary tissue be the result of tubercles or of a bygone inflammation: neither is it at all times

easy to decide whether the inflammatory changes, when sufficiently evident, have or have not been preceded by tubercle."

In speaking of the third form of the disease, the "*tubercular phthisis*," the author says:—"It may be fairly doubted, whether, in perfect strictness of language, the term tubercular, taken in an exclusive sense, can with propriety be applied to any form of phthisis; for however strange and paradoxical it may appear, I venture to submit, that at the present moment, we are not in possession of any conclusive evidence, that either tubercle, or its disintegration, ever constitutes the primary and essential cause of the disorganization which characterises fatal phthisis. We have phthical disorganization without tubercle, and we have phthical disorganization with tubercle. In that form of the disease which I have described under the name of tuberculo-pneumonic, tubercles are present; but the tubercles being usually of the sthenic kind, and little compounded, remain, with few exceptions, quiescent, until disturbed by inflammation set up around them; this inflammation, moreover, proving the chief source of destruction, first of the pulmonary tissue itself, and consecutively of the tubercles. Nevertheless, as compound are, in every instance, more prone to disintegration than simple tubercles, we cannot be surprised that occasionally the most sthenic form of tubercles should, when compounded, undergo primary disintegration; that is to say, disintegration independently of that pulmonary inflammation which constitutes so essential a part of ordinary tuberculo-pneumonic phthisis. If the single term '*tubercular*' may be retained at all to express any particular form of phthisis, the author would feel inclined to appropriate it to that sad and fatal form of the disease in which asthenic tubercles prevail, and in which they manifest a strong tendency to assume the compounded character. This form of phthisis, then, is characterised by a preponderance of asthenic compound tubercles. These often exist in great numbers, either separately, or, more rarely, aggregated together, so as to occupy several adjacent lobules, or even a considerable portion of an entire lobe of a lung. It is not to be under-

stood from this that compound tubercles alone are to be found in this form of phthisis, to the entire exclusion of the tubercle in its simple, or even sthenic form; all that is meant is, the great preponderance of compound tubercles."

The anatomical characters of this form of disease are then detailed, with the various changes which the tubercular deposit is liable to undergo. The memoir concludes with a brief sketch of the several forms of thoracic disease which the author has known to be mistaken for phthisis.

"1. Recent pneumonic hepatization, especially when situated at the apex of a lung.

"2. Recent pneumonic hepatization supervening upon ancient or recent bronchitis.

"3. The various forms of pulmonic induration.

"4. Pulmonic induration with bronchial irritation.

"5. Suppurative, sloughing, or gangrenous pneumonia.

"6. Simple bronchitis, especially when confined to the apex, or otherwise circumscribed.

"7. Dilatation of the bronchial tubes with or without induration.

"8. General but recent pleuritic effusion.

"9. Partial or circumscribed, but recent pleuritic effusion.

"10. The flattening of the rib, and compression of the lung, occasioned by ancient pleuritic disease, especially when associated with bronchial irritation.

"11. Emphysematous crepitation, especially when coupled with dilated bronchi.

"12. Pulmonary apoplexy.

"13. Aneurism of the aorta.

"14. Malignant disease of the lung or neighbouring parts."

The author believes that both ancient and recent pleuritic adhesions occasionally give rise, during the respiratory act, to divers modifications of crepitation, ranging from that of the smallest subcrepitant to the largest mucous, or even gurgling roushus; he has reason to think that the sounds in question have been repeatedly mistaken for phthisical disorganization.

We trust we have quoted sufficient from this paper to convince our readers that the whole of its contents should

be carefully studied (in connection with the preceding memoir) by all who feel interested—and where is the medical practitioner who does not?—in the pathology and treatment of phthisis.

Illustrations of some of the Forms of Sudden Death from Disease, as it occurred to Nineteen Individuals in the Manchester Workhouse. With Remarks bearing upon the Diagnosis and Pathology of such Cases. By D. I. T. FRANCIS, M.B.

WE are happy to see this contribution from Dr. Francis; it forms a truly valuable addition to our materials for the elucidation of the causes of sudden death—a subject which has never been sufficiently extensively illustrated and systematized. The cases are taken from a wide field of observation, in which, we trust, the author will still pursue his course of inquiry. The amount of knowledge of disease which is yearly lost to the profession in the large workhouses and minor infirmaries, both in the provinces and in this city, owing to the absence of men who have either the leisure or the capability to make careful and accurate post-mortem examinations, is incalculable. Dr. Francis's cases are nearly all of great interest, and are recorded in a terse, and—what is very rare—in a satisfactory manner: the remarks which he has appended are just and appropriate, and deserve a careful perusal. The nature of the paper prevents us from making any analysis of it; but we shall insert several of these cases in another part of the journal.

Reports of Cases of the Diseases of Children, treated at Guy's Hospital in 1843-4: with Remarks. By Dr. GOLDING BIRD.

DR. BIRD justly remarks, that in none of our large public charities have wards been set apart for the investigation of the diseases of children; and it is obvious that, as out-patients only, it is scarcely possible to follow up their cases with sufficient attention. This has, we know, long been felt as a great deficiency in our large hospital schools. In seeing infants prescribed for as out-patients, the pupils have had opportunities of becoming acquainted with their diseases only in a very cursory manner; and, indeed, then with a few of their diseases only, for the great

majority of the infants brought in this manner are suffering from scrofulous and other chronic affections, while those labouring under acute attacks are rarely seen. Students in our large hospitals have scarcely any opportunity of becoming practically acquainted with the morbid anatomy of infantile diseases. Some time since, the hospital authorities of Guy's made arrangement for the admission into the house of those children among the out-patients whose cases presented any peculiar interest or danger. From October 1843 to January 1845, 830 children have been treated as out-patients; and of these 75 were taken into the hospital, and their cases carefully recorded. Dr. Bird reports a portion of these cases, confining his remarks to cases of remittent fever, croup, infantile syphilis, and scarlatinal dropsy. Each set of cases is followed by remarks which are of practical value. We make one or two extracts.

"Instances of syphilitic eruptions are always exceedingly frequent among the infant patients; and it is unnecessary to do more than refer to the preceding cases for the purpose of pointing out the very simple plan of practice pursued in all, and which in every case was effective*. There are few affections, indeed, among children, the treatment of which is more satisfactory than that of secondary eruptions. It is remarkable how often the wretched cachectic appearance of pallid, squalid children has been observed to improve marvellously within a week of the exhibition of the remedies: the little patients have almost seemed to actually fatten on their medicine. The only exceptions to these general satisfactory results have been the cases in which the exhibition of mercury has produced diarrhœa; and in these the remedy has generally been withdrawn for a time.

"Perhaps not the least important point in connection with infantile syphilis is the fact of its being so very frequently mistaken for other ailments; and hence the little patient's health suffers from the persistence of an ail-

ment which, whilst it yields with readiness to appropriate treatment, is notoriously obstinate if mismanaged. There is seldom any real difficulty in the diagnosis of these cases when once the practitioner has learnt to recognize them. The characteristic *snuffling* will often enable him to recognise the existence of disease, even before he has confirmed his opinion by visual examination. The puckered mouth, the position of the very characteristic eruption round the lips and anus, in addition to the peculiar varnished and fissured appearance of the parts from which the scales have faded, will seldom, if ever, fail to convert a suspicion of the true nature of the disease into positive certainty.

"Condylomatous excrescences from the margin of the anus have never, in any of the cases, accompanied the earliest development of the syphilitic affection, but were always secondary, being observed in those children only whose primary affection was neglected or incompletely eradicated. When the eruption occurring on the nates and face in the first few weeks of life had been promptly treated, no condylomata appeared on the anal margin, at least so long as the children were kept in sight. But, on the contrary, when the eruptions were neglected, condylomata were the almost certain results. I have not treated any case by iodide of potassium alone, although this drug appeared to be of peculiar service after the mercury had produced a decided effect on the disease. In one case, however, in which an infant, five weeks old, had syphilitic sores on the nates and face, I ordered its mother, a tolerably robust woman, to nourish the little patient exclusively by the breast, and directed her to take iodide of potassium in five-grain doses thrice daily. As this valuable drug soon pervades all the fluids of the body, and rapidly finds its way into all the secretions, I hoped to succeed in curing the child without giving it any medicine, save the iodide present in its mother's milk. After ten days' trial, however, the child derived no benefit, and it was found necessary to have recourse to the usual mercurial practice."

The following hint should be borne in mind.

"From what I have seen, I strongly suspect that if care was taken to the

* The plan of treatment usually employed principally consisted in the administration of a grain or two (according to the age of the child) of Hyd. c. Cretâ every night, succeeded, after a time, by iodide of potassium (in doses of a grain, twice or three times a day, with sarsaparilla). The condylomata were treated with sulphate of copper or black wash.

restoration of the function of the skin after the disappearance of scarlatina, by the use of warm baths and flannel clothing, cases of resulting dropsy would be very rare: I certainly have not observed an instance of its occurring when these precautions have been attended to."

Hospital Reports.

GUY'S HOSPITAL.

Case of Pulmonary Disease, presenting all the physical Signs of Phthisical Disorganization, followed by apparent recovery. Reported by Dr. LLOYD, for the Clinical Reports of Guy's Hospital.

M— F—, æt. 31, ag. 12 months, admitted on March the 6th into the clinical ward of Guy's Hospital, under Dr. Barlow. A fresh-coloured woman, with dark hair and light complexion, married thirteen years, and has had six children; by occupation a sempstress, and her habits sedentary. She has occasionally been in want of the necessaries of life. Twelve months ago, soon after her confinement, she caught cold, which was followed by a violent cough, accompanied by a good deal of thin expectoration, and which lasted for three months; six weeks of which time she was confined to her bed. She states, however, that she quite recovered from this attack, and remained free from cough for two months, when it returned, and lasted for six months, during which she was very much subject to perspiration at night. At this time she was an out-patient at Bartholomew's. This cough left her, and she had no expectoration for two months. A fortnight ago, however, having been exposed to damp and cold, she was attacked by shivering, &c. &c. &c., which were followed by sneezing, and subsequently by cough and pain in her side; and last week, after a violent fit of coughing, she brought up a considerable quantity of blood (about half a pint) of very florid appearance; the next day more, but of a darker colour, and so also on the following day; making, in the whole, upwards of a quart of blood. Soon after the expectoration of blood had stopped, she was troubled with a very offensive taste in her mouth, and a foetor of a peculiar putrescent character, accompanied by an expectoration of black particles of coagulated blood.

Present symptoms.—A very unpleasant foetor from her mouth, perceptible at a considerable distance. Tongue clean. Cough very troublesome. Expectoration in large quantities, composed of mucus, tinged with a

dark brown-looking stuff, like decomposed blood, very offensive. Very considerable dulness over the left apex anteriorly from the second to the sixth rib. Tubular respiration and pectoriloquy at apex. Respiration puerile on the opposite side. Posteriorly, the left lung is dull, with tubular respiration at apex, and mucous crepitation at inferior angle of scapula. Bowels confined; nails of the fingers hooked.

Olei Ricini, ʒss. st.

L. A. A. ʒss. Mist. Camph. ʒj. Spt. Ætheris. Nitr. et Tr. Hyoscyam. aa. ʒxx. 4tis horis. Lotio Sod. Chlorid. pro gargarism.

7th.—Cough very troublesome. Expectoration large in quantity; for the most part frothy mucus. Bowels slightly relieved.

Hyd. c. Creta, gr. vj. st. Olei Ricini, ʒss. post horas, iv. pt.

9th.—Cough still very troublesome, especially at night, when she lies down. Expectoration has lost the foetid smell. Complaints of pain in her side and chest when she coughs.

Empl. Canth. sterno, pt.

11th.—Cough somewhat better. She perspired a good deal last night, for the first time during this attack.

M. Mucilag. c. Tr. Camph. C. ʒss. et Tr. Benzoic. C. ʒxx. 6tis horis. Linctus Opiatus, p. r. n.

12th.—Feels somewhat better. Expectoration copious. Frothy mucus, mixed with some pus. Tongue shining and red, slightly furred in the centre. Bowels confined.

Oi. Ricini, et pt.

15th.—Cough no better. Has had no night perspiration. Expectoration the same, but has more of the earthy smell.

Adde sing. dos. Mist. Spt. Ætheris Nitr. ʒss.

19th.—She perspired a good deal last night. Complains that her cough is no better. A very unpleasant taste in the mouth. Expectoration copious. Stethoscopic symptoms remain the same as at the first report, excepting that the mucous râles are not heard so much. Pulse 100.

Infus. Ros. C. c. Syrup. Papav. ʒj. Quin. Disulph. gr. j. Tr. Digital. ʒiv. t. quotid.

22d.—Symptoms much the same; bowels confined.

Pulv. Jalap. C. ʒij. st. et pt.

25th.—Cough does not improve; rather more febrile disturbance; expectoration the same. Pulse 115. Tongue clean, shining.

Omitt. Quin. Cont. Alia.

27th.—Feels better and stronger; appetite improved; cough less troublesome; aspect more composed. Perstet.

April 2d.—Getting a great deal better; cough becoming less troublesome. On examining her chest, the left lung is still dull, and very little vesicular murmur is heard at the apex; there are, however, no mucous râles. Expectoration very little. She is gaining strength, and *she thinks* flesh, fast.

7th.—She is so much improved as to be this day presented.

Clinical Remarks, by Dr. Barlow.

The great interest of this case consists, as must be apparent, in its great resemblance (especially as regards the signs furnished by auscultation) to one of tubercular disorganisation of the left lung: had, indeed, this patient been treated by any of those means which have been so much vaunted as of infallible efficacy against tubercular consumption, her case would, no doubt, have been triumphantly paraded as one of the cure of that disease in a very advanced stage. The explanation (for which I believe that we are chiefly indebted to the recent investigations of my colleague, Dr. Addison) appears to be this:—that we may have a cavity, and consequently its physical signs, in either of the following ways,—1. Pleuro-pneumonia, giving rise to pleuritic adhesions, and, at the same time, to induration of a portion of lung traversed by a bronchial tube of some size, the lining membrane of which is generally more or less inflamed, and often distended by its own secretion; the contraction of this indurated lung, the surface of which is fixed to the walls of the chest, aided by the distension first named, giving rise to enormous dilatation of the tube. 2. From pneumonic induration softening down into a vomica. 3. From a vomica formed by the softening of a mass of tuberculated lung*. Now it is only when the disease is of this last class that it is necessarily fatal, and the very circumstance of the diagnosis between these different forms of cavity being extremely difficult, ought to make us very careful how we pronounce a case to be one of tubercular phthisis, solely upon the grounds of our discovering the stethoscopic signs of cavity. The last class is, unfortunately, by far the most frequent, and either of the former *may* be fatal; still, as in the case before us, we may sometimes entertain a reasonable hope of a favourable issue; and here I was induced to express such a hope to my class, upon the grounds of the right lung being apparently

healthy; the patient having been exposed to circumstances likely to induce pneumonia, and there being no symptoms, stethoscopic or constitutional, which might not be accounted for upon the hypothesis of the existence of pneumonia complicated with tubercles. The very foetid expectoration I have more than once witnessed in cases of broncho-pneumonia of an asthmatic character, but which have been subsequently recovered from. Although, therefore, it indicates very formidable disease, that disease is not necessarily fatal. The treatment which was here pursued was of the simplest kind, the object being to allay irritation and contract the circulation, and at the same time to support the strength of the patient. Quinine was once tried, but appeared to stimulate too much. The combination of acid with a small quantity of diigitalis was truly beneficial. Some months after this patient left the hospital I saw him in good health and flesh, but still presenting the signs of a *dry* pulmonary cavity.

Correspondence.

ON THE MEDICINAL USE OF THE OXIDE OF SILVER.

To the Editor of the Medical Gazette.

SIR,

My attention has been drawn to a letter in your last number, written by Mr. Lane, whose first communication, in another periodical, induced me to devote much time to the investigation of the properties of the oxide of silver, and I am glad to see the subject of blackening the skin mentioned in the article alluded to, as it is of great importance that medical men should be well informed respecting all the qualities of so active and useful a medicine. I have prescribed the oxide in twice or thrice the number of cases which are recorded in my "Practical Remarks," in many before, but in more since their publication, and my good opinion of the remedy in the cases in which I deem it appropriate is strengthened day by day. I have also received the most satisfactory reports from various friends. I have never seen an instance of the oxide blackening the skin, but then my patients have all been greatly relieved or cured within eight or ten weeks, most of them in much less time, as will be seen on reference to what I have written. Mr. Lane speaks of a case of discoloration,

* See Dr. Addison's Observations on Pneumonia and its Consequences, in Guy's Hospital Reports, 2d Series, vol. i. p. 365; and on the Pathology of Phthisis, vol. iii. p. 1.

in which a grain was given thrice daily during more than twelve months. I have myself received a letter from a provincial friend, who says that, after the oxide had been administered for many months, the skin was certainly blackened, but the patient had suffered more severely than any one whom he had ever seen from neuralgia, and the relief she obtained from this medicine, was very great. I have never recommended the oxide in neuralgic affections, and should only have recourse to it as a *dernier ressort*, considering that we have much more efficient measures at our command. In no case should I like to give any maximum dose of the oxide during a protracted period.

I believe, in conclusion, that where this medicine fails to relieve, especially in pyrosis, gastrodynia, and atonic menorrhagia, the fault will be generally in the preparation of it, or in its administration in cases where there is a febrile or inflammatory state of the system, which is always a contra-indication to its use. The results of my future experience shall be faithfully communicated to my medical brethren.—I am, sir,

Your obedient servant,

JAMES EYRE.

Brook Street, May 21, 1845.

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To the Editor of the Medical Gazette.

SIR,

I AM sorry to find I have given cause of offence to Mr. Lane: your editorial remarks, however, embrace the apology I should have felt it my duty to offer, and supersede the necessity of my saying more at present than that I regret the omission of which he complains.

It appears, after all, that the oxide of silver is not free from the discolorating properties of the nitrate: but I think the objection will scarcely be regarded as very serious, inasmuch as the oxide is rapid in producing its effects: and if its beneficial tendency be not manifested within a much shorter period than that in which its discolorating effects are produced, it is probable that it is not precisely the remedy indicated, and that some one or other of our ordinary tonics might be substituted with advantage.—I am, sir,

Your obedient servant,

R. H. ALLNATT.

Parliament Street, Whitehall,
May 19, 1845.

TEETH CUTTING MACHINE.

A Description of the Patent Dentifactor,
invented by MR. TOMES, Surgeon-Dentist
to the Middlesex Hospital.

THE author, in his description, divides artificial teeth into two parts:—first, that part which lies upon the surface of the gums and palate, and which he calls the base of the teeth; and secondly, the teeth themselves, which are fixed to the base. To make the base perfect, seems to be the greatest difficulty in dental art, since it is at all times difficult to make by hand irregular surfaces to fit each other, especially when the surface to be fitted is as convoluted as that of the gums and palate. Nevertheless, the whole value of artificial teeth depends upon their fitting with great accuracy to that surface of the mouth upon which they are destined to rest, and by which the pressure of mastication is to be borne. This difficulty is, however, completely overcome by the dentifactor, which is capable of copying, with the greatest possible fidelity, any surface placed before it. The usual method of fitting the base is as follows:—A correct cast, in plaster of Paris, being obtained, its surface is covered with red paint. The block of Hippopotamus tooth, now known by the name of dentine, is placed upon the cast, in the required position; by the contact, certain parts of the dentine will have received the paint; these are cut away, and the contact is repeated; the coloured points are again cut away; and this is done again and again, till the dentine is found to fit the surface of the plaster cast. This process takes a considerable length of time and good workmanship, and even then, perfect accuracy cannot be ensured. If gold be used for the base, dentine is fitted upon its surface for the grinding teeth; and here, as in the former case, great accuracy is necessary, otherwise food will work between the gold and dentine, and there become offensive. Up to this time, dentists possessed no means of ascertaining whether the cast of the mouth to which they were about to work, was correct or not. This defect is now remedied in the system proposed by Mr. Tomes. Having obtained the cast of the mouth in the usual manner, he presses upon it, when softened by heat, a peculiar kind of hard wax. This, when cool, is removed, and presents a perfect counterpart of the cast. The composition is then cut into the shape of the intended teeth, and is placed in the mouth of the patient, to which it will be found to fit perfectly, supposing the cast on which it has been formed be correct; but on the other hand, should it not fit, then attention will be drawn to the error in the cast, and a new one will be taken. So that this moulding wax furnishes a ready means

of testing the accuracy of the plaster cast before the teeth are commenced.

Should, however, the composition model fit the mouth perfectly, it is placed in the machine, with a block of dentine by its side; and by the action of a cutting drill, a copy is speedily produced, with such accuracy of detail that were the copy and the original in a similar material, it would be difficult to distinguish the one from the other.

The frame-work of the machine is of cast iron, and consists of an horizontal and a perpendicular portion, which join each at a right angle. Upon the vertical part are two slides, which move a plate of iron in two directions in the vertical plane—namely, horizontally and vertically. Upon the plate so moved are fixed the composition model of the artificial teeth, and the block of dentine; the two must, therefore, partake of absolutely the same motion. Upon the horizontal plane of the machine is a third slide, which moves horizontally also, but at right angles to the two motions of the vertical slides. A tracer and drill are permanently fixed upon this third slide; the tracer being placed opposite the composite model, and the drill before the dentine. The drill being put in motion by a foot wheel, the tracer, by means of the slides (which are moved by hand screws), is made to pass over the surface of the model, while the revolving drill being constrained to follow a similar course, cuts in the dentine a facsimile to the model over which the tracer has passed.

It is essential that the drill and tracer be alike in size and shape, and that the tracer be of such size and shape that can follow any part of the surface of the model. The machine not only works with great accuracy, but also with rapidity; it will therefore supersede hand labour in this branch of art, surpassing the latter both in the time of producing and in the quality of the production. It is probable that the instrument will be found available for supplying other surgical losses than those sustained in the organs of mastication and articulation, for which alone it has at present been applied.

BREAD.

IN 1830, Baron Ferrusai stated that there were in Paris 500,000 persons, who subsisted chiefly on bread, and that an increase in the price of this article, at the rate of one halfpenny per day, makes a difference in the year of 9,125,000 francs. In 1829 there were sold in Paris 412,000 sacks of corn, 290,710 of flour, and 1,050,000 hectolitres of oats; but, in all probability, only a small proportion of the latter grain was destined for human consumption.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Tuesday, May 13, 1845.

DR. WATSON, VICE-PRESIDENT,
IN THE CHAIR.

On the Use of Creosote Injections in Camp Dysentery. By JOHN BRAMSTON WILL-MOTT, M.D. Cantab. &c. [Communicated by Dr. WATSON.]

By the term "camp dysentery" the author means that epidemic form of the disease which has so often proved a deadly scourge in communities, and not those occasional cases which seldom prove fatal under proper treatment.

On the 3d Oct. 1844, the author was requested by Mr. Dalvins, surgeon of the Tonbridge Union House at Banbury, to visit the house with him, as a fatal dysentery was raging there. The building is well situated, high and dry, and well drained. Dysentery was prevailing in the neighbourhood, but not in the same severe form as in the Union House. Four cases had proved fatal, and two were in a dying state. Those suffering from the disease in a less advanced stage had constant discharges from the bowels of blood and shreds of mucous membrane, without fecal matter. The stench of the dejections was that of putrid animal matter. Vomiting was present in some cases, loss of appetite in all. Tongue not usually dry until the last stage; pulse feeble; skin harsh and dry, but not hot; abdomen not tense or painful, but the tormina and tenesmus very distressing. There was from the first extreme prostration of strength, and, as the disease advanced, low muttering delirium.

The remedies used had been chiefly calomel and opium, opiate injections, astringent mixtures, with catechu, &c. It was agreed to give opium freely, especially in injection, brandy when required, and nutritious diet: bleeding was out of the question, and calomel was neither indicated by present symptoms nor past experience. The first care was to introduce a more generous diet among the inmates, the regulation of which was left to the discretion of the medical officers.

On the 10th (a week after), the author visited the house again, and assisted at the post-mortem examination of two fatal cases. In the first, that of a man, æt. 45, there was injection and ecchymosis on the inner part of the ilium; of the mucous membrane, a mere tracery work, like lace, was left. On the cæcum were ulcerations partially cicatrized: the ulcers did not extend to the

colon. Liver and gall-bladder healthy. In the second case, a girl aged 6, there was considerable ulceration of the rectum and last three inches of the colon.

Several cases had occurred since the 3d. The most pressing was that of a man, æt. 51, who was attacked on the 1st, and in whom the remedies, up to this day (the 11th), had been of little or no avail. He was greatly exhausted, had constant evacuations of blood, with shreddy matter; no fæces; the smell was putrid and gangrenous. Hot turpentine fomentations were ordered to the belly, and, in addition, the author was led to try an injection composed of 3j. of creosote in 12 oz. of starch. He did not, he observes, use it empirically, but—looking at the character of the fever, of the slow nervous kind, the inertness of remedies introduced by the stomach, the little control exercised by medicines locally applied to allay spasm of the gut, the local nature of the disease as shown by inspection of the bodies, the disposition to gangrene, as well as ulceration, and the antiseptic and stimulant powers of creosote—these considerations induced him to try the remedy. On the 12th, the patient was rather better; the injection had caused a tingling sensation, but no pain. On the following days he gradually improved; and on the 18th, the evacuations were copious, highly offensive, containing a quantity of hard scybala; no blood or shreds were passed. The turpentine had been applied four times, and the creosote injection used every night since the 11th. After this he soon became convalescent. In several other cases, either under the observation of the author or his friends, this remedy was used, and with evident advantage*.

"It may be objected," the author remarks, "that my field of observation was too limited to arrive at any satisfactory conclusions; but so marked and undeniable was the success of the measures adopted in the few cases brought under my notice, and so confident do I feel that they would have been equally efficacious had the disease continued to spread, that I will venture to expose myself to such an objection rather than withhold the publication of results which may at a future time assist in arresting so fearful a disorder."

DR. WEBSTER made inquiries of Dr. Willmott respecting the time at which the change in the diet took place, and whether the creosote was administered previous to this step being taken. He considered it probable that the improved character of the disease might be dependent on the improvement of the diet, at the pooriness of which, previous to the change, he had been sur-

prised. He referred particularly to the large quantity of cheese contained in the allowance of the paupers, as most indigestible, and likely to produce bad effects.

DR. WILLMOTT said that the creosote was given only to those who suffered most severely from the disease, and who consequently could not avail themselves of the benefit of any change of diet. To the sick any kind of diet was allowed which the medical attendant might think proper to order. The improved diet was given to the healthy with the object of preventing the disease. It succeeded to a considerable extent in effecting this, as the cases which subsequently occurred gradually got milder, and eventually were merely like diarrhoea.

DR. DICKSON remarked that creosote, when given in large doses by the mouth, had been observed to produce great excitement, amounting in some cases to intoxication. Dr. Macleod had observed in some of these cases that the urine appeared as though mixed with Indian ink. Had either of these phenomena been observed in Dr. Willmott's cases?

DR. WILLMOTT had heard from Mr. Daykin, under whose care the cases more immediately were, that great excitement was produced by the creosote, which effected a complete revolution in the system. He was unable to speak advisedly of the state of the urine.

DR. BALY had been surprised to hear from the paper, that calomel had been found of no service in the cases which had been related. He regarded its value in dysentery as unequivocal, and referred to the description of the epidemic dysentery which occurred in the Penitentiary in 1823, by Dr. Latham, as evidence in its favour. The disease on that occasion was soon cut short by large doses of calomel and opium. He was surprised, if the disease in Dr. Willmott's cases were severe, that calomel and opium should have failed to cure, and that creosote should have been successfully employed. As an occasional adjunct, he could understand that creosote might be of service. In one hundred out of three hundred persons affected with the epidemic alluded to, he had employed injections of starch containing two drachms of tincture of opium; and in some cases where this was inefficient, black wash and laudanum had been substituted. Creosote might, therefore, be occasionally employed as an adjunct; but he could not understand how it was possible that so purely local a remedy could, by itself, arrest inflammatory dysentery. It must be borne in mind, however, that epidemic dysentery might vary remarkably in its character. The treatment adopted by Dr. Willmott was employed in too small a number of cases to fully establish its efficiency.

* The number of cases that occurred in the Union House was 34; the deaths, 8.

MR. LLOYD inquired the quantity of black wash used in injection, and whether it had been observed to produce pytalism?

DR. BALY said that the quantity used amounted to three or four ounces, made warm by the addition of a little boiling water. This quantity in some cases had been used three or four times. The remedy was not novel, being commonly employed in India. When pytalism occurred after the use of this remedy, he had attributed it to the calomel administered, of which he had given in some cases as much as ten grains three times a day. When salivated the patients usually did well. Altogether only nine deaths occurred of dysentery, uncomplicated with other diseases.

DR. BURROWS fully agreed in the opinions expressed by Dr. Baly.

DR. WILLMOTT observed, that previous to his being consulted calomel had been employed in several cases, but without success. The injection of starch and opium was also of no avail. He had used the creosote as a stimulant, and not as a sedative, with the view of arousing the failing energies of the patient. He could not be blamed for the small number of cases which had occurred.

DR. BALY replied to Dr. Cursham, that in the epidemic of 1823, no change of diet had been made with the view of arresting the disease. The food was more abundant, and of better character, than that of the Union workhouse, in which Dr. Willmott's cases had occurred, the prisoners being allowed twenty-five ounces of meat per week, besides other nutritious articles.

DR. WATSON inquired whether, in this epidemic, there was any evidence to show that the disease had been propagated by contagion.

DR. BALY said that nothing had occurred to warrant him in believing that in any case the disease had been contagious. Persons affected with other diseases did certainly suffer from dysentery when admitted into the wards; so far, it favoured the idea of its being contagious, but when it became epidemic it showed itself in various parts of the building at one and the same time. He regarded the disease as dependent on atmospheric causes entirely.

DR. J. EVANS inquired whether remittent or intermittent fever had prevailed previous to the outbreak of the dysentery.

DR. BALY replied, that not only did no such fever precede the dysentery, but the disease itself was attended with very little fever.

DR. JAMES JOHNSON said that he had seen a great number of cases of dysentery, both in this country and in other climates. In no instance had he seen it result from contagion. With Dr. Baly, he believed,

when epidemic, that it depended on atmospheric causes. The use of calomel and opium, the recumbent posture, and anodyne injections, was the treatment he had found most generally attended by success. Calomel and opium was our sheet anchor in hot climates. Recovery usually followed the production of pytalism. He had lately used tannin with much success in this disease. It had the advantage of being less irritating than creosote, was a powerful astringent, and could be easily injected into the bowels.

DR. KING said that dysentery of a severe form was some years since epidemic in the Deptford Union, owing to bad drainage. It had proved most fatal to women and female children, and was attended by a bloody discharge from the vagina. Leeches and croton oil had been found the remedies of most service.

DR. BALY was pleased to hear that Dr. Johnson's experience confirmed his own with respect to the use of calomel and opium in dysentery. What was the dose of tannin employed?

DR. JAMES JOHNSON had given it in doses of one to three grains. With respect to calomel, he had himself taken it in twenty-grain doses three times a day, for several days, and had employed it in similar doses in hundreds of instances. The liver in hot countries was usually affected in this disease, and was, indeed, the *primum mobile* of dysentery.

Constitutional Syphilis in the Father, a cause of repeated Abortions, and subsequent Infection of the Fetus, born at the full period, the Mother remaining wholly free from Disease; with Observations.

By WILLIAM ACTON, Surgeon to the Islington Dispensary.

THE author remarks, that the Medico-Chirurgical Transactions, as well as Treatises on Venereal Disease, furnish numerous instances of syphilis in infants, dependent on previous contamination of the mother alone, or of both parents; but surgeons and accoucheurs have hesitated in believing that the male can infect the embryo without infecting the female. Three cases are brought forward in order to elucidate the point in question.

M. H., nine weeks old, was brought to the author by its mother on account of an eruption, chiefly papular, over the whole body. The voice was hoarse, and there was slight discharge from the nose; the palms of the hands presented a sealy copper-coloured eruption. Emaciation was less than is usually observed in children labouring under syphilis, but that peculiar earthy hue of the skin generally was very evident. The mother states, she married four years ago, became soon after pregnant, and at the full

time produced a dead child, the skin of which was dark coloured, and peeled off on the slightest touch. During the following year she miscarried. On the occurrence of the third pregnancy, the child, the present patient, was born at the full period perfectly healthy. During the third week spots were observed on the genital organs, and they have been increasing up to the present time. No symptom, either of primary or secondary disease, could be discovered in the mother. The father about four years ago contracted chancres, was salivated, and secondary symptoms followed. He again took mercury, and, believing himself cured, married, and denies having had any primary symptoms since, but he has occasionally seen white spots on his mouth and tongue—has not remarked any spots on his body. There is nothing at present in his appearance to bespeak syphilis, nor can any recent marks of infection be discovered. The author directed an ointment, composed of Unguent. Hydrarg. Nitrat. and Spermaceti, to be applied to the affected skin, and a powder, containing two grains of Hydrarg. c. Cretâ, to be given at night. Within a month the child was free from disease, and had regained its healthy appearance. The author gives an abridged account of two other cases of secondary syphilis in men, whose wives were free from all disease, but had miscarried. He remarks that these cases furnish three instances of males affected with constitutional syphilis who marry and yet fail to communicate any disease to their wives, thus far corroborating our experiments that secondary symptoms are not inoculable or capable of transmission from an infected adult to an healthy female. They moreover make it probable that a male thus infected may so far exercise a morbid influence on the embryo, the result of cohabitation between him and a healthy female, as to cause its premature expulsion, or disease it so much, that soon after birth secondary symptoms will appear. The first case further induces the belief, that though syphilis may produce miscarriage, a healthy child can be subsequently born, although no mercury be given to either parent. If it be true that the father can infect the fœtus without contaminating the mother, it justifies the surgeon in sparing her a course of mercury, and may induce him to treat the child with some mild mercurial without fear of its being re-infected by the milk of the mother; thus offering additional evidence that the mother does not participate in the disease which the child inherits from the father.

DR. KING said, that when a child was born with syphilis, Dr. Hamilton, of Edinburgh, used to recommend that both parents should be placed under the influence of

mercury. He related some cases to show that a child might be born with syphilis, although the mother might be uncontaminated. He regarded the plan of treating children so affected by placing a flannel belt round their body smeared with mercurial ointment and covered with oil silk, as recommended by Sir B. Brodie, as an excellent mode of treatment.

DR. JOHNSON did not believe the father could give constitutional disease to his offspring, unless the mother were affected. If the local disease were produced in the mother, it would explain the occurrence of disease in the child.

MR. SIMON mentioned several cases detailed in the German journals, to show that in all cases where the child was born with syphilis, both parents had laboured under the primary disease, although in the woman it might not have been observed.

MR. ARNOTT had seen several cases of children born with syphilis, the mothers of which had never suffered from the primary affection. He therefore believed that the father might contaminate his offspring without affecting the mother. He had had no experience in the treatment of parents under these circumstances, but was inclined to adopt the practice of Mr. Colles, of Dublin, of placing both parents under the influence of mercury.

DR. W. MERRIMAN related some cases to show that the mother was not necessarily contaminated when the offspring was born with syphilis.

MR. WADE had been long convinced that the father might communicate syphilis to his child, whilst the mother remained unaffected.

After a few words from Sir G. Lefevre,—

MR. ACTON rose to reply, and expressed his regret that the paper had been read so late in the evening, that he had not time to reply to all the observations made. He should not have introduced his paper to the Society, had he not believed that the cases detailed were more complete than any others on record, as containing a correct description of the disease in the child, the symptoms in the father, and the negative evidence furnished by examination of the mother. His object was to show the real influence of syphilis in inducing abortion, not, as some supposed, an indefinite time after its cure, but to point out the possibility that a man can contaminate the fœtus during the period he himself is labouring under secondary symptoms. He could furnish abundance of cases from books founded on insufficient evidence. His object was to take the opinion of practical surgeons upon the question. Another practical indication he had pointed out in the paper, if his views were correct, was, that in order that healthy

children should be born, it was not necessary to place the mother under the influence of mercury—a proceeding always injurious to the child, by deteriorating the milk. He attributed the great mortality among syphilitic children to the administration of mercurials to the nursing mother. He preferred always administering it to the infant, however young, as it usually produced the best effects, as in the case detailed, particularly if the mild preparations were used.

Medical Trials and Enquests.

HOMICIDAL MANIA.

MARTHA BRIXEY, aged 18, was placed at the bar charged with the wilful murder of Robert Barry Ffinch (an infant), at the parish of Greenwich, on the 4th of May inst. The prisoner, a mild-looking girl, was accommodated with a chair, and during the proceedings seemed to suffer extreme emotion.

MR. BODKIN, in stating the case to the jury, observed—That it would be established beyond all question that the deceased came by his death by the hand of the prisoner, and he apprehended the law to be, that every person who committed an offence of the sort was presumed to be in such a state of mind as made him or her responsible for the acts committed, and the *onus* of proving that he or she was not so, was cast upon the party accused. Of the soundness of that rule there could be no question, and hence it was that the accused would have to make out that at the time of the transaction she was in a state of irresponsibility. The jury were probably aware that within the last few years a case which excited considerable interest was tried in that court,—he alluded to the case of Daniel M'Naughten, tried for the wilful murder of the lamented Mr. Drummond, and acquitted on the ground of insanity. After that case it had been thought right by the House of Peers to propound certain questions bearing on the subject to the judges, for the purpose of obtaining from that learned body their opinion on the law regulating the defence of insanity. One of those questions and the answer to it he would read to the jury, in order that they might see what was the result of the opinions of the highest legal authorities. The question put to the judges was as follows:—“What is the law respecting alleged crimes committed by persons afflicted with insane delusions in respect of one or more particular subjects or persons? as, for instance, when, at the time of the commission of the alleged crime, the accused *knew he was acting contrary to law*, but did the act complained of with a view, under the influence

of insane delusion, of redressing or revenging some supposed grievance or injury, or of producing some supposed public benefit?” The judges, in answer to this question, thus replied: “Assuming that your Lordships’ inquiries are confined to those persons who labour under *such partial delusions only, and are not in other respects insane*, we are of opinion that, notwithstanding the party accused did the act complained of with a view, under the influence of insane delusion, of redressing or revenging some supposed grievance or injury, or of producing some public benefit, *he is nevertheless punishable according to the nature of the crime committed, if he knew at the time of committing such crimes that he was acting contrary to law*, by which expression we understand your Lordships to mean *the law of the land*.” Such being the law, the only real question for the jury was, whether the prisoner, at the time she took the life of the deceased infant, was or was not in that state of mind which enabled her to distinguish between right and wrong, and to know that the act which she committed was contrary to the law of God and man.

Mr. John Drake Ffinch, examined by Mr. WILDE.—I am a solicitor, and reside at Greenwich. On the 20th of August last I had a son born—the deceased, Robert Barry Ffinch. On Sunday morning, the 4th of May, I was sitting in the dining-room, about a quarter to 10 o’clock, with my wife and Mr. Traill, the police-magistrate, when the prisoner entered the room in a very excited state, and addressing me, said, “Oh, sir, what have I done? What have I done? Will you forgive me?” I said, “What?” and immediately rose—as, indeed, we all did. The prisoner said, “Oh, sir, I am a murderer. I have murdered the dear baby. I have cut the dear baby’s throat.” I instantly ran from the room and proceeded to the nursery, and on going into the back or sleeping nursery, I found my child in his cot with his head very nearly cut off. There was an ordinary tableknife lying across the child covered with blood; and I saw that the child was dead. I then left the room, and on the landing I met Mr. Traill. I called his attention to what had happened, and then went down stairs. I saw the prisoner in a room called my room. She then again addressed me, saying, “Oh, sir, will you forgive me? what have I done? what will become of me?” She attempted to take hold of me, but I thrust her from me, and replied, “You wretch, you have murdered my poor child, who never could have injured you, and you will be hanged for it—that is what will become of you.” She then went down on her knees, and prayed to God to forgive her. A police-constable was sent for, and I gave her into his custody, and he

took her away. Before that, one of her fellow-servants brought her bonnet and shawl, which she put on. I desired the constable to take her away, when she said, "Oh, Sir, let me stop to change my boots." I said, "You have no occasion for them;" however, the boots were brought, and she changed them, and then went away. *In her general conduct she had always been previously extremely kind in every respect.*

Cross-examined by Mr. CLARKSON.—*Her conduct had always been quiet, harmless, and inoffensive.* I believe she was at the time under a course of treatment by the family surgeon for a disease (amenorrhœa) to which young women are subject. For a fortnight or three weeks before this transaction took place, I observed that she had become very dull and restless. Her mother was sent for, as it was contemplated that the prisoner should leave my service, but afterwards she prayed to stay. This was on Thursday, the 1st of May. I do not know that she had complained of her head. I had seen the prisoner with the deceased child in her arms on the morning of the murder, about an hour before it happened. I had no reason to suppose that the prisoner entertained any vindictive feeling to my wife or to the child.

By Lord DENMAN.—The prisoner had lived with me for three years on the 31st of August last. The children were very fond of her, and she was very fond of them.

Mr. James Traill, after corroborating the evidence of Mr. Finch, said—I saw the prisoner in Mr. Finch's room at the bottom of the stairs. I took hold of her hand, and was anxious to place her in the hands of a policeman, as there was no knowing what she might next attempt. The prisoner repeatedly addressed me by name, saying, "What will be done to me—what is to become of me—do you think God will forgive me, if I ask pardon and repent?" She repeated these expressions very often, calling herself a murderer, saying that she had murdered the poor thing, and using similar expressions; exhibiting what may be called great distress of mind. I answered her once by saying, "You poor miserable wretch!" but I did not give expression to any opinion. A policeman subsequently arrived, and I placed her in his hands, and then left her.

Cross-examined by Mr. CLARKSON.—Her action and manner exhibited great distress of mind. On her first appearance in the dining-room, my impression was that she had been guilty of great carelessness, and had dropped the child from the window, and not that she had inflicted wilful violence upon the infant. At first, I did not imagine there had been so dreadful a catastrophe. Her expression induced me to think at first

that it was the result of accident through very great carelessness, and that it had not been wilful. *Her language and manner exhibited a consciousness of what she had done.* Her behaviour or manner was just that of a person who had seen such a sad spectacle as that which I afterwards saw on going up stairs. I had often seen her before, and observed that she always conducted herself with kindness to the children, and was very inoffensive and respectful.

Mr. John Burton said—I am a surgeon. On Sunday, the 4th, I was called to the house of Mr. Finch, and proceeded to the nursery, where I saw the infant lying in the cot with its head almost entirely severed from the body. The cut went back into the vertebræ, and was quite sufficient to cause immediate death. The child was quite dead.

Sarah May, examined by Mr. BODKIN.—I am upper-nurse in the service of Mr. Finch, and have been in his service two years last June. I remember the morning this matter happened. I had attended the deceased that morning in the usual way, and had placed him to sleep in his cot, in the nursery, at about half-past 9 o'clock. The prisoner had nursed the deceased that morning, though she was not often in the habit of doing that. She always appeared to me to treat the deceased and the other children with very great kindness. After I had placed the deceased in the cot, the prisoner assisted me to make the beds in the same room. Whilst so occupied she asked me if I thought Mrs. Finch would allow her to stop. I said, no, for I was sure Mrs. Finch had determined that she should leave her service. The prisoner asked if I thought her mistress would forgive her and allow her to stop. I said I thought not, and that it would be much better for her (the prisoner) to keep quiet. On this she stood still, biting her nails for a minute, as if she was "in a study." Soon after that I had occasion to go down stairs, and I left the prisoner in the back nursery, where the deceased was lying in the cot. There were three other children at the time in the adjoining nursery. When I was down stairs in the back yard I heard a screaming from the house, and it turned out that then this affair had happened. During the time I have known the prisoner I always considered her a person of a *very kind disposition*, and the children were all very fond of her. There had recently been a death in the family, and the servants were all put into mourning, the prisoner among the rest. This was a little more than a month ago. The prisoner complained that the body of her gown did not fit her, and she ripped the body from the skirt, and thrust it with the poker into the fire. She

had before that had it altered a good many times, but still was not satisfied with it. For myself, I saw nothing the matter with the gown, which I think fitted the prisoner very nicely indeed. I had not noticed any change in the prisoner's appearance that morning. She did not look well, and was rather low in spirits at the time. When she burnt the body of the gown she was very much excited, and said, "she wished the dress at the devil." I felt it my duty to inform my mistress of this conduct, and I did so on her return from Dover on the 25th of April last, and I was present in the nursery when Mrs. Ffinch told the prisoner that she had acted very wrong; that she must have been in a very great passion when she did it; and that if she repeated such conduct again she must leave her (Mrs. Ffinch's) service. Her mother was sent for a fortnight ago last night, and I believe Mrs. Finch was induced to overlook the misconduct of the prisoner, and to allow her to stay in the service. The prisoner was told that if she altered the dress any more she must leave her place. At that time the prisoner did not appear to have any great desire to remain. On the following day, Friday, May 2, the prisoner was sent to fetch the children from school, and it turned out that she again on that occasion took the dress to be altered, and was a long time away from the house. On her return she came with the gown in her hand, and, in reply to Mrs. Ffinch, said she had been with it again to the dressmaker's. Mrs. Ffinch said to her, "Mary, I told you last night that if you went again you must leave my service, and now you must leave me." The prisoner began to cry, and said she was very sorry, and hoped she should not leave, and several times asked her mistress to allow her to stop, and added that she would never be happy again if she went away. On Saturday Mrs. Ffinch mentioned that she had been to Deptford to see a young woman, who was coming to take the prisoner's place in the nursery. The prisoner said she was very sorry indeed for what had happened, but hoped that she would be forgiven and allowed to stop. In the course of the Saturday I did not hear anything more; the prisoner seemed then to be very comfortable, and in the afternoon I heard her singing in the nursery. On the Sunday morning, while at breakfast, she inquired when her mistress was going about the young woman at Deptford, and I replied that I believed she would go to-morrow. The prisoner said she would not leave, for she did not like another to come in her place. For some weeks before this happened the prisoner had been unwell and taking medicine. She complained to me of a curious sort of aching pain in her head. She took medicine for some weeks, until she said her head was

better. The prisoner was very much liked in the family, and was treated with great kindness.

Mr. BODKIN.—Do you remember any conversation you had with the prisoner on the Saturday night before the child met with its death? Did she not say something about hanging? Tell us as nearly as you can what she said.

Witness.—She said, "I need not make myself so very unhappy as I do; one would think that I had committed murder, but I have not done so." I replied to her, "Martha, do not talk in that way. I hope you will never be guilty of such a crime as that." She then asked me if I ever knew of a woman being hung. I answered, "Why, if they commit murder they are hung as well as men who were guilty of that offence." The prisoner responded that she would as soon be hung as transported, or put into a madhouse. This conversation the prisoner began herself. She was continually talking about her leaving her place—that matter seemed to be always on her mind.

Cross-examined by Mr. CLARKSON.—The prisoner at times complained to me that the air of Greenwich did not suit her, and that her health was bad. This she also told her mistress, and then used to talk of leaving her place. The dress she cut up and put in the fire fitted her very well, though she said it did not fit comfortably, and that she wished it at the devil, for she would not wear it. After that she went and got some stuff of the same material, and made a new body to the dress. The family were truly kind to her, and she wanted for nothing—neither money nor anything else. From the time she came home with the dress in her hand, she seemed to be in a state of melancholy and wretchedness.

Lord DENMAN.—I thought you said she was cheerful and comfortable?

Witness.—Yes, my Lord, in the afternoon.

By Mr. CLARKSON.—I had said nothing to her about hanging or transportation till she commenced the subject. She always appeared fond of the children, and they were partial to her.

Elizabeth Middleditch, examined by Mr. WILDE.—I am housemaid in the family of Mr. Ffinch, and have been so for the last two years. On Sunday morning, the 4th, I remember opening the door to Mr. Traill, the magistrate, at 20 minutes to 10 o'clock, and, having done so, I returned back to the kitchen. I saw there the nurse, Mary, who had Elizabeth, one of my master's children, with her. In a short time after I saw the prisoner go into the pantry. I followed her there, and saw her take an ordinary table-knife out of the box. I asked her what she was going to do with it? She replied that

she was going to cut a pencil for Miss Mary. I said to her a smaller knife would be better for that purpose. She said she would take the larger one as well, as it would do to cut the children's bread and butter in the afternoon. I saw her try the edge of the large knife with her finger and thumb, and then she went up stairs, taking both knives with her. In a short time after this I heard a scream, and went up stairs. In the hall, I saw the prisoner and my master. I said, "Martha, what is the matter?" She exclaimed "Good God! I have cut the dear baby's throat." I had noticed of late a change in the prisoner's appearance. On the Sunday morning, at a quarter past 9 o'clock, I had some conversation with the prisoner while she was washing up the breakfast things. She said to me, "Oh, Elizabeth, I wish I was dead." I told her not to talk so, for both her master and mistress were very kind to her; and she then appeared comfortable. She was always a very kind and good-natured girl.

Caroline Matilda Prest, examined by Mr. WILDE.—I am cook in Mr. Finch's service, and have been so four months. This witness corroborated the evidence as to the prisoner's taking the knives, and trying the edge of the large one with her finger and thumb.

Mr. John Mould Burton, examined by Mr. BODKIN.—I am a surgeon, and attend the family of Mr. Finch. By desire of Mrs. Finch, I have, since the 31st of March, sent the prisoner some medicines to remove some constitutional irregularities to which young women are especially subject. Those irregularities had been of some months' standing, and the medicines I gave were intended to counteract them.

Cross-examined by Mr. CLARKSON.—I have frequently had occasion to attend young women who have been subject to temporary suspensions of the action of nature, and I believe any suspension of that action is calculated very much to derange the general constitution, and in proportion as the suspension is long or short, in the same proportion the general constitution of the patient is jeopardized. Sometimes the effect assumes an appearance as though the patient was labouring under dropsy, and occasionally, instead of affecting the body, it attacks the head. Under the latter circumstances, the patient is subject to dull chronic pains in the head and the region of the brain. This is attended with restlessness of manner, moroseness, and dulness of appearance. The patient is subjected, also, to fits of irritability, and great excitement and passion. These symptoms will present themselves very suddenly. I have known instances where the functions of the mind of a woman so situated have been seriously affected. I have not been watching the prisoner during the whole

of the time she has been taking the medicines I sent her: I saw very little of her, and only spoke two or three words to her, when she told me that she was better. I suggested to Mr. Finch that the prisoner ought to be sent away, because she had exhibited great violence of temper in burning the dress, which was such an act as unfitted her to be amongst young children. That act was likely to have arisen from the disease under which she was labouring, and I thought it would be an act of prudent precaution that she should be sent away. She has been under the influence of the medicine I prescribed for her up to the time of the melancholy catastrophe; I believe up to the very day. The waywardness she exhibited—first saying the air of Greenwich disagreed with her; then, that she would leave; next, that her feelings gave way, and she said she would not leave—these are all symptoms I should expect to find in a person labouring under the disease with which the prisoner was affected.

Re-examined by Mr. BODKIN.—I have no reason, from anything I heard or know, to suspect the soundness of the prisoner's mind, or to suppose she was labouring under any affection of the head.

By Lord DENMAN.—From what you have heard now, do you think she was a person of diseased mind previous to this occurrence?

Witness.—That is a very difficult question to answer.

John Booth, examined by Mr. WILDE.—I am a police-sergeant, and was on duty at the station-house when the prisoner was brought there, on the 4th of May inst. She asked me if I thought God would forgive her for what she had done, if she prayed to Him. I made some observation in reply, and asked her if she had had any quarrel or words with either her fellow-servant or with Mr. or Mrs. Finch? She answered "No, for that a kinder master and mistress there never were." In the course of her walking with me for exercise in the garden, she asked me if I thought she would be hung, or sent across the water in chains. She made several sudden stops, and said she could not stop there, crying, "Let me go out of this place." She also asked me if I thought Mr. Finch would forgive her in a week's time. She further inquired whether she would have to wear a prison-dress in Newgate, or be allowed to wear her own clothes? also, if I thought they would treat her harshly, as, if they did, she did not know what she should do, for that she had always been accustomed to be treated very kindly.

Elizabeth Garrow, examined by Mr. BODKIN.—I had charge of the prisoner at the station-house at Greenwich, and on the Monday morning she asked for, and was

supplied with, pen, ink, and paper, and she wrote the letter I now produce.

The letter was handed in and read by Mr. Straight, the deputy-clerk of arraigns, in these terms:—

“Dear Mary,—Pray send me another gown and collar, and a pair of gloves. May God Almighty forgive me for the wickedness I have done. I will pray for it earnestly.

“I remain, your sincere friend,
“MARTHA BRIXEY.”

This letter was addressed to the witness Mary, the nurse in Mr. Finch’s family.

Mr. BODKIN.—This, my Lord, closes the case for the prosecution.

Mr. CLARKSON commenced his address to the jury on behalf of the prisoner by declaring that, after an experience of upwards of twenty years in the criminal courts of the country, he never felt deeper anxiety and higher responsibility than on the present occasion. His learned friend, Mr. Bodkin, had truly told the jury that he (Mr. Clarkson) had no intention to struggle with the facts which had been proved in evidence—it would be idle for him to attempt to do so. Neither had he any reason to complain of the law as laid down by his learned friend in his opening; still less had he a right to complain of the solution given by the judges to the questions propounded to them by the House of Peers on the subject of mania. For though these questions were, in his humble judgment, wholly unnecessary, still they had collected, in a concise form, the valuable opinions of the highest authorities in the land upon that subject. He (Mr. Clarkson), however, contended that no general rule could be applied to cases of this sort. *Each case must be dependent on the peculiar facts which surrounded it*; and for that proposition he had the high authority of Lord Chief Justice Tindal, on introducing, as the mouthpiece of the other judges there, answers to the questions put to them by the House of Lords. Lord Chief Justice Tindal used, on that occasion, these words:—“My Lords, Her Majesty’s judges, with the exception of Mr. Justice Maule, who has stated his opinion to your Lordships, in answering the questions proposed to them by your Lordships’ house, think it right, in the first place, to state, that they have forbore entering into any particular discussion upon these questions, from the extreme and almost insuperable difficulty of applying answers to cases in which the facts are not brought judicially before them. The facts of each particular case must of necessity present themselves in endless variety, and with every shade of difference; and as it is their duty to declare the law upon each particular case, on facts proved before them, and hearing argument of counsel thereon, they deem it at once impracticable, and, at

the same time, dangerous to the administration of justice if it were practicable, to attempt to make minute applications of the principles involved in the answers given by them to your Lordships’ questions.” Such was the opinion of the judges, and so he maintained that the jury were to decide upon the facts adduced in evidence before them. He warned the jury not to be actuated in the discharge of their duties by any dread of attacks from without. He well remembered that, after the trial of the unhappy Scotchman, Daniel M’Naughten, a cry was raised that juries were in the habit of taking too lenient a view of matters of this description; and this cry led to the questions read by his learned friend being put to the judges. It was a mistake to suppose that juries had not done their duty because M’Naughten escaped, and Mr. Touchet was acquitted on the ground of insanity. He repeated there that the jury were to decide the momentous question now before them on the facts in proof, and on them alone. The simple question for them was, whether or not, on the evidence, they were of opinion that the prisoner, at the time of committing the act, was a responsible being, and knew the consequences of that act, and was capable of distinguishing between right and wrong. The learned counsel then went through the evidence with great force and ability, urging on the jury the *medical evidence* of Mr. Burton, the surgeon, who had prescribed for the prisoner, *the absence of all motive for the commission of the act, and the strange wildness of the manner in which it was committed, as all being calculated to show that at the time the prisoner could not have been a responsible agent*. The learned gentleman concluded an eloquent appeal by calling upon the jury not to shed the blood of the unhappy girl at the bar upon a public scaffold, but, by a verdict of insanity, to spare her life, and consign her for the continuance of that life to perpetual imprisonment.

LORD DENMAN then proceeded to sum up the evidence, which he recapitulated at length with great minuteness, and stated that the question was one of fact, and entirely for the jury. The question was, whether the prisoner, at the time she committed the fatal act, was not responsible for it by reason of a deranged state of mind. It was for them to decide that question on the evidence adduced.

The jury retired at half-past 1 o’clock, and after an absence of half an hour, came into court, when the foreman delivered the following verdict:—“That from the derangement of the system, which led to great excitement in the prisoner at the time she committed the act, we are of opinion that she was not responsible for her actions.”

LORD DENMAN.—That is, in fact, a ver-

dict of *Not Guilty* on the ground of insanity. Let it be so entered.

The prisoner, who was ordered by the Court to be detained during Her Majesty's pleasure, was then removed from the bar.*

Selections from Journals.

PHYSIOLOGY.

ON THE CO-OPERATION OF THE FIBROUS PERICARDIUM WITH THE VENTRICLES, IN ACCELERATING THE FLOW OF BLOOD INTO THE AURICLES.

MR. J. H. WALSH, of Worcester, suggests that the fibrous pericardium is, through the medium of the ventricles, the *passive* means by which the auricles are filled, and, more especially, that it is the agent by which, contrary to the laws of gravitation, the blood from the inferior cava is made to enter the right auricle. The grounds upon which Mr. Walsh forms his hypothesis appear to be as follows. He states that "the pericardium is completely in the form of a tent, having its base at the diaphragm, and its apex at the aorta and great vessels of the heart. This tent is kept, *during life*, in a state of extension, superiorly by the elastic tissue in the aorta, or great vessels of the neck; anteriorly by its close apposition to the sternum, posteriorly by its relations with the posterior mediastinum, and inferiorly by its attachment to the central tendon" (of the diaphragm). Then, that the pericardium "maintains its cavity, in a state of health, nearly always of the same dimensions." "Now, if it can be demonstrated anatomically that the two cavities" (auricle and ventricle) "together with their contained blood, always occupy a given space, and if that space is always maintained of the same dimensions by the pericardium, it is clear, that as the ventricle contracts, and throws its blood out of the pericardium, the loss within that sac must be made up by an influx of blood into the auricle equivalent to that displaced by the ventricle." He ascribes this to the production of a tendency to a vacuum within the unyielding pericardium at the moment the ventricles contract.—*Provincial Med. and Sur. Journal*.

[REMARKS.—The author's views are conveyed in a rather obscure manner. But, although almost entirely hypothetical, and scarcely admitting of experimental proof, they deserve attention. It is not probable that the return of the systemic venous blood is effected by any single train of actions. The impelling force of the left ventricle, hydrostatic pressure, the action of muscular and atmospheric compression on the veins,

the respiratory movements, together probably with other influences, may all combine to produce this result; but few of these, acting singly, could fill the right auricle; and, indeed, the process suggested by Mr. Walsh, could it be proved actually to take place, must only exert an accessory or secondary influence in returning the blood. The fact that the circulation may continue without apparent interruption for years after the pericardial cavity has become obliterated by close adhesions, is alone sufficient to prove this. But nature is never poor in resources, employing many trains of agencies to effect each of her operations, and the whole of these act together for the same end; still, some of them being less absolutely essential than others, the failure of one does not, of necessity, involve the cessation of the process.—ED. GAZ.]

PATHOLOGY.

ENLARGEMENT OF THE BREASTS IN A MALE
—ATROPHY OF THE GENITAL ORGANS.

A MAN, aged 55, originally a quarryman at Rochester, but afterwards one of the British Legion in Spain, was presented to the Sheffield Medical Society, having a remarkable development of the breasts. He stated that he had been very healthy, had three children, the eldest twenty-five, the youngest would have been between eight and nine years of age; that in an engagement in Spain, he tried to jump over a trench, but, being laden with his knapsack, failed, and fell with his chest against the opposite margin. He received a blow on the lower part of the spine, and falling some depth, received a violent blow on the occiput, which rendered him insensible. He was under the care of Mr. R. Alcock for some time. Since that period the mammæ have gradually increased in size, his voice has diminished in power, his beard has diminished, the right testicle has diminished to a very small size, and the left is still diminishing, and he has had no sexual desire since. He is partially paralyzed on the right side, and moves about very much bent. Skin fair and soft; beard very thin and soft; voice weak, mammæ pendulous, nipples rather prominent, the glands very large and distinct, penis small and shrivelled; right testicle having the feeling of condensed membrane, left of a moderate size, but not firm, and tender on pressure; the pelvic region round, more like that of a woman, not presenting the angular appearance of the male.* He denies having ever had venereal disease or taken any quantity of mercury.

Cases were mentioned of enlargement of the breasts in the male, related in the "Phi-

* This must have been an accidental coincidence depending on original conformation.—ED. GAZ.

losophical Transactions," vol. 41; and in Captain Franklin's "Journey to the Polar Regions," and of emasculation consequent upon blows or wounds of the occiput, related by Larrey in his "Clinique Chirurgicale," and by Hennen in his "Military Surgery." There was no appearance of abscess in the mammæ.—*Provincial Medical and Surgical Journal*.

SANGUINEOUS CEREBRAL APOPLEXY IN A CHILD ELEVEN DAYS OLD.

FROM the researches of Rochaux and others it appears that cerebral hæmorrhage seldom occurs till after fifty. However, cases of it have been observed at all ages. M. Billard mentions one where it occurred three days after birth, and M. Serres another in a child three months old.* The following instance came under the observation of Dr. Alex. D. Campbell.

The infant was a stout healthy male, and until the morning of the day on which he died, had shown no symptoms of disease. About seven A.M. he vomited frequently, and in an hour and a half afterwards was suddenly seized with violent convulsions, tossing about the head and limbs, rolling the eyes, and accompanying these movements with loud shrieks; in this state he was found by the gentleman who was requested to visit him. The pulse was at this time extremely rapid and hard, the pupils were contracted, the head hot; but the body and legs, especially the latter, felt cold to the touch, and attempts to vomit were occasionally made. The child was immediately placed in a warm bath, cloths dipped in cold water were applied to the head, and a powder composed of calomel and scammony administered. Leeches were afterwards applied to the head, and, as the bowels remained unmoved, a second powder was given in two hours: the symptoms remained unabated. At noon the child appeared to labour under all the symptoms of compression of the brain, precisely similar to those generally observed in the last stage of acute hydrocephalus; the convulsive movements of the limbs had subsided; it emitted occasionally a low moan; the pupils of both eyes were widely dilated, and the pulse was frequent, small, and feeble. A blister was now applied to the head, and two grains of calomel, with five of jalap, ordered to be given every second hour until the bowels were moved. The child, however, never showed the slightest signs of amendment, and died between six and seven the same evening. On opening the cranium after death, the superficial vessels of the brain were found distended with blood, and on the surface of the middle lobe of the right hemisphere appeared a small ecchymosed

spot, situated under the arachnoid. This was found to be the apex of a clot, nearly of the size and shape of half a small walnut-shell, with the concavity directed upward; the blood was of the consistence and colour of thin currant-jelly. Dr. Campbell examined portions of the brain adjacent to the clot microscopically, and found that it contained none of the corpuscles characteristic of inflammatory softening. The other parts of the brain were less firm than usual, especially in the affected hemisphere, which seemed as if infiltrated with colourless serum. The brain presented no other abnormal appearance. No marks of violence appeared upon any part of the body.—*Abridged from Northern Journ. of Med.*

SURGERY.

PERINEAL AND LUMBAR OPERATIONS FOR ARTIFICIAL ANUS. SURGICAL SOCIETY OF IRELAND.

AT a late meeting of this Society, Sir P. Crampton, the President, communicated some facts tending to settle the hitherto undecided point as to whether the power of retaining the fæces continues after the perineal operation for artificial anus as recommended by M. Amussat. He detailed the results of an operation for artificial anus performed by M. Amussat in a child about nine years since. During the subsequent period he (Sir Philip) had had frequent opportunities of examining the condition of the child. The nature of the congenital deformity was as follows:—"The vagina and anus were both naturally formed externally, but the recto-vaginal septum was deficient above, and only existed inferiorly to the extent of about one-third of an inch, so that the finger could be passed from either canal into the other. The upper portion of the rectum had no communication with the cloaca common to the vagina and the anal portion of the rectum, but its closed extremity could be felt at a height of about two inches towards the left sacro-sciatic angle. The anus thus communicated directly with the vagina above the imperfect septum already mentioned, but had no connection with the rectum, which terminated two inches above it, and was, in fact, properly speaking, deficient to that extent. Under these circumstances M. Amussat determined to make an incision anterior to the coccyx, but posterior to and not involving the vaginal anus, to detach the posterior wall of the vagina from the coccyx and sacrum with the finger or the knife, to reach the cul de sac of the rectum, seize it with a hook, detach its entire circumference rather with the finger than by the knife, draw it down to the external wound, open it freely, give exit to the meconium, and secure, by points of

* Andral's Pathol. Anat. Trans. v. ii. p. 723.

interrupted suture, the edges of the opening in the intestine to the lips of the cutaneous wound." For two months the child went on well, the opening being maintained by the introduction of an ivory stopper, not much thicker than a full-sized quill. The introduction of the stopper, however, became more and more difficult every day, and, at length, it was found impossible to introduce it. The child was then brought to Sir P. Crampton, in the following state :—She passed, with considerable pain, a small quantity of semi-fluid fæces, and appeared in great agony, under which she must very soon have sunk. He enlarged the opening to such an extent as to receive a bougie of sufficient size, the introduction of which it is still necessary to repeat for a few hours almost every day. Sir Philip considered that this case resolved the doubtful question, as it appears that the rectum has full power of retaining the fæces, and proved that M. Blandin's apprehension that incontinence of fæces must be the result of the perineal operation, in consequence of the non-existence of a sphincter, is without foundation. Dr. R. Coulter then read the history of a case in which Sir P. Crampton had operated on a male infant, for imperforate anus, about four years previously. A septum (evidently of a fibro-cartilaginous structure) had existed about an inch and a half above the anus. On the third day after birth Sir P. Crampton passed up Weiss's exploratory needle through the septum, withdrew it, and found that its groove was filled with meconium. This having decided the nature of the contents he at once introduced a large-sized trocar through the septum, and immediately the meconium gushed out with considerable force. A small flexible hollow bougie was kept constantly introduced, its size being increased weekly until the largest could be introduced. This had the effect of keeping open the aperture, and preventing any contraction, and after the expiration of four months it was not found requisite to use the instruments further. After the lapse of six months Dr. Coulter had no occasion to attend upon the child. At present the child was well-grown, and appeared in excellent health. At the distance of about an inch and a quarter above the anus a contraction existed in the rectum, like the remnant of a membranous diaphragm with an annular perforation in its centre, through which the end of the little finger could be passed by exerting a moderate degree of pressure. The mother stated that the passage of the fæces appeared to be unattended with pain or difficulty. Dr. O'Beirne conceived that M. Amussat's case produced abundant evidence of the fact which he himself had endeavoured to establish, viz. that the existence of a sphincter was not absolutely necessary to the

retention of the fæces. His work would, he believed, be found to furnish an explanation of that point, which was to be attributed to the contracted state of the upper portion of the rectum. From inquiries he had made of several obstetric authorities, it appeared to be the conjoint opinion of those gentlemen that when, in parturition, the child has torn through the whole recto-vaginal septum, the mother is known to possess the full power of retaining the fæces. Dr. O'B., in illustrating the safety with which the most obstinate constriction of the bowel, in what is called "spasmodic stricture" of the rectum, may be overcome, described the manner in which the lower bowel is affected in cases of tetanus. Of all the diseases in which constipation is most obstinate tetanus is certainly the one. In some cases of this disease, which had terminated fatally, he succeeded in passing the instrument to a considerable height, but only by means of long-continued, gradually increasing, and determined pressure against the point of resistance : when he first used this force he remembered the instrument passed rapidly upwards, as if through a narrow ring, giving to his hand a sensation as if he had perforated the walls of the intestine ; accordingly, he withdrew the tube, and was much pleased to see its extremity coated with fæces, and bearing no marks of blood. This circumstance had occurred to him in many instances. In those cases it was found, after death, that the whole of the colon was so enormously distended as to conceal the other intestines, and to equal in size the thigh of a very large man, while the uppermost part of the rectum was contracted to the diameter of a barrel of a quill ; but felt much firmer, and this without appearances of any organic change in the structures of the part, or any sign of thickening other than that caused by the powerful contraction of its fibres upon themselves.

During the discussion allusion was made to the fact that, in the formation of an artificial anus in the lumbar colon, the great difficulty arises from the want of means of distinguishing the colon from the small intestine. Sir P. Crampton, however, mentioned that M. Amussat has discovered a sign, which, if not actually diagnostic (for perhaps it could not always be appreciated) yet bid fair to do much towards removing the difficulty in question, and had actually removed it in M. A.'s last operation : this sign rested on the fact that the small intestines sustained a motion of alternate ascent and descent corresponding to expiration and inspiration, in which the lumbar colons did not participate ; if, therefore, the exposed intestine presented this oscillation, it was small intestine ; if it did not, it might be presumed to be the colon.—*Abridged from the Dublin Medical Press*, March 5, 1845.

UPON THE THREE IMAGES OF THE EYE.

BY M. MAGNE.

A RECENT number of the *Gazette Médicale de Paris* contains an article by M. Magne, a favourite pupil of Sanson's, recalling the attention of oculists to a discovery of his late preceptor's, which it was supposed would afford much assistance in the diagnosis of doubtful cases of cataract. As the subject has attracted but little attention in this country, we present our readers with the principal parts of the paper in question. M. Magne remarks that it was first observed by Professor Sanson in 1836, and publicly announced in 1837, that when a candle is placed before an amaurotic eye, the pupil of which has been previously dilated, three images of the flame, succeeding each other from before backwards, are visible. The first or anterior one, and the best defined, is erect; the second, or middle one, more indistinct, is inverted; and the third and most obscure is erect like the first. This observation was confirmed and elucidated both by the experiments of the professor himself, and those of his pupils MM. Bardinet and Pigne,—from which it was concluded that the anterior image is produced by the cornea, the middle or inverted one by the posterior segment of the crystalline capsule, and the posterior image by the anterior portion of the capsule. Opacity of the cornea destroys all three images; opacity of the anterior capsule causes the disappearance of the two posterior; opacity of the posterior segment of the capsule destroys the inverted image. The experience of M. Pasquet was in harmony with these results, and led to the inference that a cataract even in the commencement might always be distinguished from amaurosis and glaucoma.

This discovery appeared likely to be of the greatest service in ophthalmic surgery. How comes it, then, says M. Magne, that it has now almost fallen into oblivion? This seems to have been owing to the fact that the procedure of M. Sanson requires for its effectual adoption the observance of certain rules,—inattention to which may have occasioned the formation of erroneous conclusions. The first precaution is an indispensable one; viz., that of dilating the pupil previously to resorting to the test. The field of the pupil is indeed very limited, and the presence of the candle has the effect of diminishing it still further,—so that without this preparatory measure we may be compelled to seek for the images in a circle of not more than $\frac{1}{4}$ th of an inch in diameter. The most practised eye could with difficulty distinguish the appearances presented in so narrow a compass. Under such circumstances a surgeon may find the two posterior images absent, and not extending his investigation further, may think himself jus-

tified in concluding the eye submitted to his examination to be affected with cataract; at a later period the mistake is discovered, and to the insufficiency of the test is consequently ascribed the error, which would not have arisen, had the pupil been dilated.

Another and no less important precept is, that the examination of the eye should take place in a darkened room,—otherwise the light will occasion reflections upon the eye, which may simulate the images of the candle, or prevent their being distinguished.

There are two forms of incipient cataract, in which it is possible to distinguish the triple image; viz. where the cataract is so slight, as to consist merely in a faint cloudiness, though which the rays of light penetrate without difficulty;—and secondly, where the opacity, commencing at the circumference, has affected but a very small part of the surface of the lens.

The surgeon who, having recognised the three images in these cases, has hence inferred that there was no cataract, loses confidence in the value of the test, when advancing time proves his prognosis to have been erroneous.

These cases are certainly embarrassing, but it is possible to avoid mistake. If the deviation from the healthy state consist in a slight shade merely, the images do not resemble those seen in a healthy or amaurotic eye; the anterior one alone is brilliant, and the others are so pale, that this character is sufficient to excite the suspicions of the surgeon, and, united with other signs, determine his opinion. If the lens is affected but at a limited point, and this is not presented to the candle, three images will be seen; yet the failure of vision cannot be attributed either to amaurosis or glaucoma. In this case it is necessary that the eye should be moved in various directions, and an object repeatedly presented to it;—when the object is in the direction of the axis of the cataract it will not be seen by the patient. Warned by this fact the surgeon will move the candle opposite the point indicated, and will then observe but one or two images according as the opacity is in the anterior or posterior part of the lens; he may then boldly pronounce the disease to be cataract.

PHARMACY.

ON THE PREPARATION OF NITROUS ETHER.

M. PEDRONI finds that he can obtain nitrous ether without any violent reaction, by employing the following proportions of substances: 11 parts of crystallized nitrate of ammonia; 8 parts of sulphuric acid; and 9 parts of alcohol. The mixture is simply distilled, and a little aldehyde is formed during the process.—*Annuaire de Chimie*, 1845.

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURE ON SURGERY,

At St. Bartholomew's Hospital,

By W. LAWRENCE, Esq. F.R.S. &c.

[Reported by MR. HOLMES COOTE.]

Wound of the hand; death from secondary internal inflammations. Large adipous tumor in the scrotum. Chronic abscesses, with thick and firm cysts, resembling tumors. Cyst under the sterno-cleido-mastoides containing an hydatid.

I HAVE before me, gentlemen, for your inspection, the morbid parts removed from the body of a patient, who died in the hospital yesterday of a disease very interesting from the succession of pathological phenomena which it presents, and important in a practical point of view from its fatal progress, which we are unable to arrest.

Incised wound of the hand followed by inflammation; death at the end of three weeks, from secondary internal inflammations.

M. H. admitted with a severe incised wound from a chaff-cutting machine, over the ring finger of the right hand, which had partially opened the articulation of the first phalanx with the metacarpal bone.

Inflammation of the hand came on, terminating in suppuration; this was treated by general and local bleeding, with other suitable measures. At the end of a fortnight rigors began, and gradually increased in frequency and severity, until the patient was worn out.

I now proceed to read a report of the case and of the appearances presented upon dissection. Moses Hocking, æt. 20, a healthy man, of temperate habits, received, April 14th, a severe wound on the ring finger of the right hand, which partially opened the metacarpal articulation. Considerable hæmorrhage followed, and it was necessary to tie one of the digital arteries. The integuments having been brought together by three sutures, the limb was put on an inclined plane, placed at the side of the patient in bed, with the hand elevated, and the latter was covered with cold lotion.

16th.—The back of the hand in the neighbourhood of the wound is inflamed, and the patient is hot and feverish.

The sutures were removed. Hirud. viii.

Haust. Sennæ co. statim. Milk diet.

Subsequently Haust. Ammoniac Acetatis. c. Liq. Ant. Pot. Tart. ʒj. 4tis horis.

Cataplasma Lini.

17th.—The whole back of the hand is

much swollen and inflamed; the tumefaction extends to the forearm; pulse full; tongue coated with a brownish fur; complains of being hot and thirsty.

Hirudines xii.; Cataplasma Lini.

℞ Mist. Ammon. Acet. c. Liq. Ant. Pot. Tart.

18th.—The swelling and redness of the hand are increased, and extend both to its palmar and dorsal aspect. He complains of considerable pain in the part.

V. S. ad ʒviii. from a vein of the affected limb. The blood was buffed and cupped; the hand was much paler after the venesection. In the course of the evening the pain returned.

Hirudines xii.

From this time the tumefaction and redness subsided, and the edges of the wound became healthy. Matter formed both in the back and palm of the hand, and was evacuated by puncture. The opening in the vein did not close; a small quantity of thin discharge escaped from time to time; but there was neither swelling nor pain in the course of the venous trunks.

I may here observe, that in the cases of inflammation of the hand so frequently seen in the hospital, as the consequence of neglected injuries, often trivial, the quickest and most effectual mode of relief is to open a vein of the affected limb. The blood thus drawn often presents the inflammatory character as strongly marked as in pleurisy, and free depletion is sometimes required to check the progress of the mischief. If we allow inflammation to establish itself in the deep-seated structures of the palm, and to extend under the annular ligament to the forearm, it leads to suppuration, and to interstitial deposition of fibrine, and ultimately to thickening, induration, and agglutination of these important parts, so as seriously to impair the motions of the hand, and often to render it nearly useless.

May 1st.—Just one fortnight from the date of admission, the progress of the case having been altogether favourable, he had an attack in the morning resembling a fit of ague: the face, and whole surface of the body became deadly pale; he complained of being cold, although he did not feel so to the touch; the countenance was anxious, the pulse feeble, and so rapid as scarcely to admit of being counted, and he shivered so violently as to shake the whole bed. After a time the face became flushed, the surface of the body covered with perspiration, the pulse beat less rapidly, and increased in power.

For the four succeeding days these rigors returned about once in the twenty-four hours, but not at regular periods. During the intervals the pulse remained at 120; the

skin was hot and dry; the tongue coated with a brown fur, and the countenance retained its anxious look.

May 2d.—Hyd. Chlor. gr. iv. statim.
Enema Vesp. si opus sit.

May 5th.—He has had three rigors during the last twenty-four hours: the surface of the body is sallow; the conjunctiva of both eyes tinged with yellow; the countenance is more anxious, and, though he does not complain, he is restless and uneasy; bowels open, motions liquid and of a pale yellow colour.

Quinæ disulphatis, gr. v. 3tiis horis.

May 6th.—He had two rigors in the course of the morning, less severe than the preceding ones; a third occurred during the afternoon. He complains of pain about the left hip-joint and in the situation of the bladder. The recti abdominis are rigid and unyielding.

The lower part of the right lung is dull upon percussion. Auscultation detects some small crepitation in the left lung near the axilla. He complains of general aching pains in the limbs.

May 7th.—He was delirious for a few hours during last night; complains of severe pain in the lower part of the right side of the chest. His countenance is anxious and haggard; the skin has a decidedly yellow tinge; pulse 140. Expiration short and hurried.

He has had one rigor during the night, and another this morning, both of a less severe character. Under these circumstances it was necessary to discontinue the quinine, under which, however, the violence of the rigors had been lessened.

Omitte Quinæ disulph. Hirud. viij.
lateri dextro; Vini rubri ʒiv. quotidie.

The pain in the side was but little relieved by the application of the leeches.

Emp. Lyttæ lateri dextro.

He had one or two rigors during the course of the day, and sunk rapidly during the night.

May 8th.—Expired at 6 A.M.

Examination, six hours after death.—The right side of the chest contained about half a pint of greenish coloured pus. The pleura was vascular, and flakes of soft lymph had recently been deposited on its surface. There were partial slight adhesions. Deposits of fibrine not exceeding the size of a filbert, and of light yellow colour, were scattered irregularly through the substance of the right lung, seated principally on the surface, so as to be visible through the pleura, and most numerous in the middle and inferior lobes. The left lung

contained a few similar depositions. When cut through, the section appeared solid, but a little greyish puriform fluid of tolerable thickness could be squeezed out of the surface by gently pressing a knife over it. Around these deposits, the pulmonary substance was of a deep livid red, and consolidated, and the two lower lobes of the right lung were generally in a state of active congestion, yielding on pressure a rust-coloured or bloody fluid. The heart was healthy; the blood in its cavities dark coloured, and fluid.

The liver contained an abscess filled with greenish pus in the right lobe, near the gall-bladder, about the size of a large hen's egg. The gland for some extent around was soft and vascular. There were one or two small purulent deposits similar to those in the lungs. The blood in the portal and hepatic veins was mixed with air.

The cellular texture around the prostate was swelled, reddened, and condensed, by recent inflammation, adhering closely so as to form one compact body with the gland. There were several small deposits of fibrine in the left lobe and the adjacent tissue. The coats of the veins in this neighbourhood were thickened, and thickish yellow pus could be squeezed from their divided orifices in considerable quantity. The cellular texture connecting the bladder to the pelvis was inflamed in a slighter degree, but the bladder itself was healthy. In other situations of the abdomen, the cellular tissue, in portions of small extent, presented a bright yellowish colour, without being inflamed, from slight infiltration with a yellow fluid.

The bursa under the left psoas and iliacus muscles, and the hip-joint with which the bursa freely communicated, were filled with well formed yellow pus; the surface of the synovial membrane was red, the articular cartilages healthy.

The right hip-joint contained an increased quantity of synovia, which was opaque, and mixed with pus. There was a little pus in the right elbow-joint.

This case, in which the fatal symptoms, beginning a fortnight after the receipt of the injury, lasted for one week, belongs to a class the existence of which is now tolerably familiar to most surgeons, although the pathology is not clearly made out, and we are as yet unable to arrest the progress of the mischief. These serious secondary inflammations of internal organs have been commonly ascribed to purulent absorption. The veins involved in injury or disease become inflamed and secrete pus, which, being thus introduced into the circulation, may be conveyed by the blood to any part of the body. When the rigors began in the present instance, phlebitis was immediately thought of, although no symptoms of such an affec-

tion had been noticed. The veins were therefore carefully examined about the seat of injury, and along the limb to the axilla; but no trace of inflammation could be detected. There was no hardness, no swelling of the limb, no enlargement of any vein, no pain on pressure. It is true that the opening made in venesection had not closed; it had discharged a thinnish fluid; but still there were no signs of phlebitis, and examination after death confirmed this point. The veins on the back of the hand, those of the forearm, and upper arm, were carefully dissected, and found in a perfectly healthy condition. While the veins of the injured limb were thus free from disease, those of the prostatic plexus had undergone active inflammation, and were filled with pus. The internal iliac veins were a little reddened on the internal surface, and there was in each a small patch covered by rough adherent fibrine. How is this inflammation of veins so remote from the seat of injury to be accounted for? I have no explanation to offer.

It has been represented that the secondary deposits of fibrine and pus, occurring in cases of phlebitis, and explained on the supposition of purulent absorption, may take place without evidences of inflammation in the surrounding textures; and such cases have been adduced to prove, that pus may be formed without inflammation. This has not happened in any of the numerous instances which have come under my observation. In the present case the affected portions of the lungs were in the congestive state of inflammation, while the substance immediately around the deposits was nearly black from vascular fulness. The collection in the great lobe of the liver had all the characters of an ordinary abscess, the sides being lined with a layer of soft but rough and flocculent fibrine. The synovial membrane of the left hip was generally reddened.

These secondary affections of internal organs, consequent on external injury, deserve your attentive study; not only as an interesting subject of pathological investigation requiring further elucidation, but as an essential guide in the important matter of prognosis. It is desirable that you should notice and rightly appreciate the signs of this formidable affection at its earliest appearance, that you may not hold out promises of recovery under circumstances which render the event uncertain, and that you may prepare the minds of friends for the fatal termination, when the nature of the malady is clearly marked.

The progress of the affection, when fully developed, is too rapid to afford much opportunity for treatment; and it may be doubted whether we have any means of ar-

resting the complaint. Another difficulty is, that the symptoms, although leading to the suspicion that internal disease is going on, are for some time indefinite as to its locality. If the situation of the affection were ascertained at an early period, local depletion and counter-irritation would seem to be proper means. The strength, however, soon fails, so as to render any lowering treatment inadmissible.

Large Adipous Tumor in the Scrotum.

I have the opportunity of shewing you a large adipous tumor; and I think that you would hardly be able to conjecture from what part of the body it had been removed. This mass, measuring about eight inches in length, by six in width, was taken from the scrotum; and you can readily imagine how inconvenient it must have been, and how the patient must have desired to get rid of it. He was a gentleman about 40 years of age, of spare make, but otherwise healthy. The swelling had existed three years, having been first noticed as a lump of moderate size in the middle of the scrotum, on its left side. It had given him no pain, and was only annoying by its bulk. He mentioned a curious fact connected with it, namely, that whenever the bowels were relaxed, the part became puffed up and painful. Upon first view it would have been pronounced a scrotal rupture. It was a pyriform enlargement, occupying the whole left side of the scrotum, extending to the abdominal ring: the integuments and cellular texture were perfectly natural. But a circumstance was immediately noticed at variance with this supposition; the left testicle lay on the front of the swelling, about half-way between its lower extremity and the abdominal ring. It was loose and moveable on the mass; the chord could be traced a little above it, and was then lost in the tumor. When firmly grasped, the mass was found to be of unequal consistence; portions were solid and firm, but the greater part was soft, so that I examined it with a candle, supposing it might contain fluid: there was no transmission of light. Judging from the mere manual examination, it might have been a large scrotal rupture, with various contents, principally omentum, or a tumor not of uniform consistence. It had the kind of doughy feel belonging to omental rupture; and the omentum, when long out of the abdomen, becomes sometimes greatly enlarged by the deposit of fat in its texture, especially in corpulent persons; but this gentleman was thin. Although the swelling was continued upwards, like a scrotal rupture, careful examination shewed that it had no connection with the cavity of the abdomen; the chord could be felt free above, close to the abdomen. The conclusion was obvious, that the

wellings could not be a rupture; but I could not make up my mind as to its real composition. The patient told me that he had consulted me about a year before, when the swelling was comparatively small; that I was then unable to pronounce a decided opinion on the case, and had recommended his wearing a suspensory bandage. Although the nature of the disease was doubtful, there were no evidences of dangerous character—nothing to contra-indicate the operation of removal, which had become urgently necessary from the great bulk of the tumor, and its rapid rate of increase during the last few months. This view of the matter having been sanctioned in a consultation, I performed the operation on April 30th. The first step was an incision into the swelling, to determine its nature; this shewed that it consisted of fat. Two cuts were now made, circumscribing an elliptical portion of skin, and the mass, of which the cellular connections were quite loose, as they usually are in such structures, was easily turned out. It presented the ordinary appearances of adipous swellings, the component masses of fat being large, and the surface partially and slightly lobulated. On a superficial view of its exterior, and of the cut surface after it had been divided, it might have been taken for a mass of beef-suet. Swellings of the scrotum in the great majority of instances are ruptures, or morbid conditions of the testis, its coats, or the spermatic chord. Diseases of the cellular structure, excepting inflammations and effusions of blood, serum, pus, or urine, are very uncommon. I do not remember to have met with a tumor in this situation; and the fatty growths so common in the adipous tissue are what we should have least expected in a part which naturally does not contain a particle of fat. I have never seen in the scrotum the cellular tumor which is sometimes met with in the external organs of the female.

Chronic Abscess under the Sterno-cleido-mastoideus.

Sarah Unwin, æt. 62, a healthy married woman, from the country, noticed, about fifteen weeks ago, a small hard swelling, the size of a hazel-nut, at the lower part of her neck. The tumor, at times painful, became gradually larger, with a marked increase of pain, and an uneasy sensation both in swallowing and breathing. By the advice of a surgeon in the country she came to London, and was admitted into this hospital Feb. 14th, 1845.

There was an oval tumor, about the size of a hen's egg, behind the lower insertion of the sterno-cleido mastoideus, and extending across the whole breadth of the muscle. It projected slightly above the sternum, and extended behind the clavicle;

but the inferior boundary could not be ascertained; and, although moveable from side to side, it seemed to have some deep connection in this situation. It had an elastic feel, but being loosely connected, so as to yield readily, and placed among parts that would not bear pressure, the question of fluctuation could not be clearly decided. When the patient coughed, it projected somewhat above the clavicle. The pulsations of the carotid artery were communicated to the swelling. When we do not know the nature of a tumor, or what to do with it, we generally use iodine locally; the Ung. Potass. Iodidi and linseed poultice were employed in the present case without benefit; indeed, the part became rather larger, with some increased uneasiness in swallowing. The question of operation was considered. The dangerous position of the disease, in close contact with the large blood-vessels, and some of the important nerves of the neck, together with the uncertainty respecting its nature and extent, were strong objections; and I determined not to think of removal unless changes should occur rendering it necessary. Under this view of the matter we allowed the patient to return to the country at the end of three weeks, desiring her to come back if any change should take place.

If any further proceeding had been adopted, it would have been that of puncturing the swelling, in order to gain information respecting its nature.

She continued in the same state for a fortnight, after which the projection above the sternum increased, and then broke, discharging a large quantity of thick yellow pus. Thus it turned out to be a chronic abscess, presenting the characters of a tumor. She returned to the hospital April 9th, with a small fistulous opening just above the sternum, yielding a thin watery discharge containing some whitish shreds. The tumor was much less, and it was still diminishing, when she left the hospital, on the 14th April. At that time, some thickening could still be felt beneath the sterno-mastoid; the discharge had almost ceased.

Many years ago, a young man came into the hospital from Haverfordwest, with a large tumor at the side of the neck, extending from just below the ear nearly to the sternum, having been informed that he must undergo an operation. My colleagues and myself carefully examined the case; feeling no doubt on the point of its being a solid growth, we were unanimous in the decision that it ought to be removed. I performed the operation, turning aside the sterno-cleido-mastoideus, by which the mass was partially covered, and detaching it easily from the surrounding parts, the connecting cellular texture being in its naturally loose

state. It had lain over the great vessels, which were exposed in nearly their whole length. It turned out to be a collection of pus contained in a cyst, as thick and nearly as compact as sole leather.

I saw a lady with an apparently solid swelling in the axilla, imbedded in the part without any external prominence, and so loosely connected as to be freely moveable in all directions. She was forty years of age, and in good health. As it was increasing, in spite of various means employed to check its growth, and had attained the size of a small orange, the operation of excision was considered necessary, and I made an appointment for its performance. Before proceeding, I again examined the part very carefully, particularly with the view of determining whether there was any fluctuation; and, being uncertain on this point, I thought it right to make a preliminary puncture, on which a small tea-cupful of pus flowed out.

During the past winter, I was consulted by a lady from the country, bringing a letter from her medical attendant, stating that she had a steatomatous tumor in the arm. I found a swelling as large as a hen's egg, close to the axilla, and over the brachial vessels. It was freely moveable from side to side, but was more firmly connected at the base. It appeared to me, as it had hitherto been regarded, a solid swelling requiring the operation, which I performed. The integuments and muscles were easily separated, but the posterior connexions were firm. I found the brachial artery lying close on the base of the tumor for the length of an inch, and connected too closely to admit of its separation. In pursuing the dissection on the opposite side, and keeping close to the tumor, the knife penetrated its surface, and a quantity of matter flowed out. The exterior portion of the thick cyst, already separated by dissection, was removed, and the edges of the wound were brought together. These cases disclose to us an interesting fact in pathology, and, at the same time, convey an important practical lesson. They shew that the cyst of a chronic abscess, instead of being thin, and hardly sensible to examination, as it usually is, may be so thick and firm as to prevent fluctuation, while the deposition of fibrine is so strictly confined to the thick cyst, that the surrounding cellular texture possesses its natural looseness, and thus the disease has all the external characters of a solid tumor. It will generally be found, on careful inquiry, that the development of the disease is attended with pain, more or less considerable; also that its origin is of more recent date than in the case of a solid tumor. Under the existence of doubt, a preliminary puncture should be made; which will not interfere with the completion of the opera-

tion, if we find that it is a case of solid growth.

Cyst containing an hydatid under the sterno-mastoid muscle.

The tumor, in the case of Sarah Unwin, closely resembled in size, position, and connexions, one which I saw in a gentleman about 30 years of age. It had existed more than a year, had recently increased, and become troublesome. The tumor projected partially between the sternal and clavicular portions of the muscle. The patient readily assented to the operation of removal, which I recommended, intending to expose the part first, and then to detach the muscle from the clavicle. However, in the preliminary exposure, the surface was cut into, and clear watery fluid escaped. On enlarging the opening, an hydatid, the size of a pigeon's egg, presented itself, and was drawn out. A portion of the smooth serous cyst in which it had been lodged was cut away. A thin slip of dressing was introduced, to insure inflammation of the remaining part of the cyst. Considerable inflammatory swelling of the neck, with some difficulty of swallowing, occurred three or four days after the operation. It yielded readily to free leeching and other means, and the part healed soundly. The hydatid, with a portion of the cyst, is preserved in the Museum.

LUMLEIAN LECTURES,

Delivered at the Royal College of Physicians.

By SIR GEORGE LEFEVRE, M.D. &c.

Of the specific nature.—However vain and futile any attempt may be considered to investigate the origin and nature of disease, it may not be wholly irrelevant to the subject to mention some views lately set forth in a work which has received its meed of popular favour: I allude to that entitled, "Vestiges of the Natural History of Creation."

The author has assumed that there is a law presiding over animate, as powerful as that which controls inert matter; and that what gravitation is to the one, development is to the other. Upon this principle, which governs the moral and physical condition of all animated beings, it is presumed that species may not only be subject to endless variety, but that one species is convertible into another, though always in an ascending scale of development. Moreover, the generation of entirely new species is proved possible by the existence of this law, which, dating from time immemorial, has awaited only its due season, for some happy juxta-

position, or combination of materials, for the accomplishment of its purpose.

Thus man, who is now placed at the head of the creation, has not arrived at this exalted position but by a regular series of gradations, from the lowest condition of animal life. In doing this he has passed through a variety of shapes and forms, during a chronological history of which our conceptions cannot form the least approximation to an estimate.

After stating the difficulties which occur in accounting for all created beings upon the old hypothesis of successive generation, which can in no satisfactory manner explain the formation of the entozoa, or intestinal worms, nor the hydatid found only in the domestic hog, the tinea in dressed wool, not met with in its raw state, the insect which only lives in chocolate, and those found only swimming in wine and beer, the author arrives at the *experimentum crucis* of Crosse, which developed living beings by the aid of electricity, and that too in fluids which are known to be fatal to animal life, such as silicate of potash and nitrate of copper.

Upon these experiments he bases his hypothesis, and draws the conclusion in favour of this modification of the doctrines of spontaneous or equivocal generation. To use his own words, the *Acarus Crossii* was a type of being ordained from the beginning, and destined to be realized under certain physical conditions. When a human hand brought these conditions into the proper arrangement, it did act akin to hundreds of familiar ones which we execute every day, and which are followed by natural results, but it did nothing more. The production of the insect, if it did take place, as assumed, was as clearly an act of the Almighty himself as if he had fashioned it with hands.

This law of development, as established in the animal kingdom, converting one species into another, and even creating new ones, prevails also in the vegetable.

Whenever oats, sown at the usual time, are kept cropt down during summer and autumn, and allowed to remain over the winter, a thin crop of rye is the harvest presented at the close of the ensuing summer. This experiment has been tried repeatedly, with but one result—invariably the *Secale cereale* is the crop reaped, where the *Avena sativa*, a recognized different species, was sown.

Notwithstanding the plausibility of the evidence which the author adduces in proof of these assertions, we cannot adopt his theories as to conversion of species, although the changes and modifications which some may assume shall be such as almost to prevent their recognition, or establish their identity. We cannot imagine that the human race ever existed in any other shape or

form, or that it ever will do so whilst an inhabitant of this earth.

As regards the idea of progressive development from an inferior to a higher scale of existence, there is no proof whatever of such a process, and the vestiges which time has left us in no respect warrant the assertion. Mr. Lyall, in his *Elements of Geology*, has given a complete exposition and refutation of such doctrines.

As regards newly-created species, our ideas coincide most fully with those of the author. In the succession of ages species are created, develop themselves, and again disappear; but they remain untransmutable, and their specific characters remain unmodified.

It is the same with specific diseases, concerning which the same difficulties exist as with the animal kingdom.

What are their specific characters,—those which constitute their essentiality,—those which always exist and never vary? How are they created—how do they develop themselves? How disappear?

Let us return to the animal kingdom, and inquire into the origin of the tape-worm. It is universally admitted that our tape-worm is peculiar to ourselves, and exists no where in nature but in human entrails: now, how does it get there? Spontaneous generation has hitherto been considered inadequate to explain the formation of a trigono-cephalous tænia, which is an elevated and complete animal. Was the first tape-worm created in the entrails of the first man? How did it pass from the first man to his descendants? Why does it appear in those whose ancestors were free from it? All these discussions were rife at the close of the seventeenth century, when Harvey started his doctrine of the involution of germs; the egg within the egg *ad infinitum*; the whole species shut up and involved in the primitive egg, and evolved as time and circumstances allowed.

In applying this to our present subject, we must allow that diseases are specifically distinct and untransmutable; that some have existed and been coeval with animal creation; that some are common to men and animals; others confined to the human race; that some have made their appearance within historical and recent periods.

That the specific disease, whatever it may be, when once created, lives on and develops itself now here, now there, under the influence of circumstances which it is impossible to appreciate, and, when not thriving, as a species it will become shrivelled up, so dwarfish, so insignificant, as not to be recognised; when suddenly again, and from causes totally unknown, it will break out with inconceivable virulence, of which the scarlatina affords but too frequent examples.

The graphic descriptions which the ancients have given us of most of the diseases with which they were acquainted, afford sufficient reason for belief that many maladies of the present day are of its own generation.

We can at once place our finger upon one of the most important in the catalogue of human contagions which has sprung up in modern times, according to some combination of causes, which, conjectural as they may be, must have been called into existence at that precise period, and at no other, and we find no better term to express the fact than that of development.

It is difficult to trace syphilis to any period prior to the siege of Naples, and Schiller, who was a physician and an accurate historian, refers it to that epoch in his historical works. There is a passage in his play of the Robbers which has puzzled many of his translators.

Let us marshal the French into the field. I know a doctor who built a house with quicksilver: alluding to the origin of the disease in the French camp, and the mercurial treatment of it.

How are we to account for a new poison, generated only by the human, and confined entirely to the human species, propagated *ad infinitum* by its own resuscitation and the inheritance of centuries, but upon the supposition of matters being presented to each other in a nascent state, and so forming a definite compound?

The same causes have existed from the beginning of time, but the same elective principles may not before have presented themselves in the same sphere of action. If we can suppose that animalcule are so generated—and indeed there is no other supposition on which the generation of parasitic animals can be solved—there is every reason for assigning new diseases to the same causes.

The chemical laboratory affords us evidence, as we shall instance hereafter, that mechanical mixture and chemical combination are very different processes.

We may apply this law to animal poisons, and suppose that some may be inert when in a state of mechanical diffusion, but become virulent when forming a chemical combination.

A domestic nuisance may illustrate our meaning. Some boast that certain insects do not bite them, whilst with others they produce a state of fever. As regards the first position, it is an error—the insect feeds equally upon all, as is easily proved; but the venomous fluid which he instils into the wound for the purpose of diluting the blood, so as to enable him to draw it up through his syphon, does not in both cases meet with matter in such proportions as to form a compound which acts as a poison.

It is the difference in the two cases of

mechanical mixture and chemical combination.

The stings of bees, wasps, and mosquitoes, produce very different effects in different persons. There is no law of immunity—the same cause shall produce various results at different times in the same individual; and then we say, that the blood is in fault; but this was not felt or known before. It required this circumstance, the bite of a mosquito, to prove the fact of its bad condition.

Now the silence of the ancients upon the subject compels us to believe that scarlatina was not known to them. We attribute its existence to the influence of a specific poison—how generated we are ignorant; but, when once created, capable of regenerating its species.

If the poison be specific, so is the disease. It is itself alone, and can be produced but by one cause. Many diseases may simulate it, but there is but one source of scarlatina.

The question may be here agitated of the conversion of diseases into others—an idea very generally prevalent when the plague used to scourge the European world more than it does at present.

In fairly investigating this subject, we shall find that however types, nay, structures, may change, the species will remain distinct, difficult as it may be at all times to rake it out of the mass which smothers it.

Thus the types of fevers, arising from one and the same cause, are very different, and may be changed during the progress towards convalescence. An aguish paroxysm often terminates a synchus.

Anatomical investigation presents us with the positive evidence of change of structure. The mucous and serous membranes are convertible into each other, so that their morbid conditions must offer a new series of action; for suppurative and adhesive processes are not the same; and we may at least come to this conclusion, without launching too far into the field of hypothesis, that the animal system, owing to causes which are not at present within our reach, receives such different impressions from the invasion of the same poison, that, judging by effects merely, we should scarcely be able to recognize the same operating cause.

Let us adduce one of the most striking instances in illustration.

Who would recognize at first sight in the same affection, which we denominate croup, the awful garotillo of the Spaniards, the morbus suffacotorius of the Italians, the angina gangrenosa of the French, and that awful malady, which raged some time ago in the middle of France, and in which this croupal formation invaded mouth, lips, nose, eyes, the nipple and vulva of women, and

the penis of the male? Who would have expected the identity of all these diseases, till Bretonneau proved it in his treatise on the diphtherite; who observes, that the specific character of diseases is proved by such a mass of evidence, that it would be difficult to find a better established fact. It has been recognized in all ages, and it is chiefly upon this knowledge that the diagnosis of most diseases, has been formed.* Without accuracy in this respect, the results of a great many cannot be predicted—without it, the choice of remedies must be undecided, and far from counting upon their success, we could not be responsible for their neutrality.

Original Communications.

OBSERVATIONS ON THE CHEMICAL ANALYSIS AND NATURE OF SOME OF THE CONSTITUENTS OF THE BLOOD.

By J. W. GRIFFITH, M.D. F.L.S.

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THE chemical analysis of the blood is one of the most difficult subjects; in fact, we at present know of no method by which all the constituents, or even some of the most important, may be separated. Müller's statement*, that the proportion of fibrine in the blood is the only point which can be determined with accuracy, still remains correct, although ever since the time that was made numerous experiments have been made on the subject. As the best methods of analysis we possess are not generally at the command of those who have opportunities, and are desirous, of making use of them, I propose to describe their procedures, to compare the results which have been obtained by them, and also to allude to one or two points which I think have hitherto been incorrectly interpreted.

Before describing the analytical methods, we will glance over the constituents of the blood. They may be thus enumerated:—

1. Water.
2. Proteine compounds: fibrine, albumen, (*globuline?*), tritoxide of proteine.
3. Colouring matter: hæmotosine.

4. Fatty matters: three simple fats—cholesterine, seroline, and phosphorized fat; three soaps—margarate, oleate, and stearate of soda.
5. Extractive matters: aqueous, spirituous, and alcoholic.
6. Salts: *a.* alkaline—sulphates, phosphates, hydrochlorates, and carbonates of potash, soda, and ammonia. *β.* Earthy—phosphates, carbonates, and sulphates of lime and magnesia.
7. Metallic oxides: silica, oxide of iron, and oxide of manganese.
8. Gases: oxygen, carbonic acid, and nitrogen.
9. Matters the quantity of which is so minute as to render their presence doubtful: bile, urea.
10. Matters only occasionally present: sugar.

These principles are arranged in the living blood as follows:—

Fibrine: fatty matter.

Corpuscles: *Red*—water, phosphorized fat, fibrine? globuline? albumen, oxide of iron and manganese, earthy phosphates, the gases. *Colourless*—fibrin, albumen, and water.

Serum: water, albumen, tritoxide of proteine, cholesterine, seroline, soaps, extractives, alkaline and earthy salts, sugar, bile, and urea.

The nature of the fatty soap combined with the fibrine is hardly determined. It has been particularly examined by Berzelius, who extracted it with ether. It crystallizes on cooling, but when in fusion, is yellow, or yellowish brown, reddens litmus, and is soluble in cold alcohol; when incinerated, it leaves an alkaline residue. Thus, it appears that this fat, in which, also, nitrogen has been found, consists, at least in part, of an acid soap.*

The albumen in the coagulated blood is found in two situations, in the serum, and in the corpuscles. The cause of its solubility in water is very interesting, as it has long occupied the attention of chemists. The presence of carbonate of soda in all albuminous fluids, and the solvent property on albumen exercised by this substance, naturally led to the conclusion that its solu-

* Physiology, by Baly, p. 126.

* Lehmann, Lehrbuch der Physiol. Chem. p. 246.

bility was produced by the alkali. The recent experiments, however, of M. Wurtz have shown, in the case of white of egg, that its solubility is quite independent of either alkali, or saline matters. I have repeated his experiments with perfect success. The same does not answer with the serum of the blood, probably on account of the large amount of saline matter mixed with it, which impedes the action of the reagents used.*

The red corpuscles consist of two parts, a simple, colourless, membranous sac, and a coloured fluid within it.

The nature of the sac is uncertain, as there is no method by which it can be separated from its contents; it is probably composed of coagulated albumen. The coloured liquid consists of albumen, or, as it has been called, globuline, carbonate of soda, and earthy phosphates, but the latter in less proportion than in the serum.

This fluid, however, certainly contains neither alkaline sulphate, phosphate, nor chloride. I have proved this by allowing a portion of cruro to repose, pouring off the serum, and washing the adherent serum away completely, by pure saturated solution of sulphate or hydrochlorate of soda. The remaining corpuscles were then partly treated with distilled water, partly dried and incinerated; in each case the aqueous solution was tested. It is certainly most remarkable that these corpuscles should float in the liquor sanguinis, and be affected by constant endosmotic and exosmotic forces, in addition to the tendency which liquids, placed under such circumstances, have to mix, and yet each solution should preserve its own peculiar ingredients. The observation of Schultze† shows us that, after copious draughts of fluid, the blood corpuscles become distended (probably some burst) and the serum is dyed with the colouring matter, which is dissolved in it. The experiments of my esteemed friend Dr. Rees‡, shew us that when, by copious sweating, a large quantity of water has been excreted from the liquor sanguinis, the latter exerts an exosmotic action upon the contents of the corpuscles, and causes them to be shrunk from loss of a part

of their contents. The retention, however, of the iron, under ordinary circumstances, completely within the corpuscles, presents us with a similar example of this occurrence.

Do the corpuscles contain fibrine? This question is one of great interest, inasmuch as it has been lately asserted that the whole of the fibrine exists within the corpuscles, and that during their coagulation it escapes from their ruptured walls, and solidifies into the granules and fibres seen in coagulating blood; and from another quarter, that the fibrine in blood before coagulation is not in solution, but that it is constituted by the white corpuscles and the molecules existing in it, and that the coagulation consists simply in the aggregation of these previously isolated bodies. It seems improbable that the red corpuscles contain fibrine, as, on examining them in coagulated blood, we do not find any opacities, or appearances of either fibres or granules which could be interpreted into coagula: the same does not apply to the colourless corpuscles, for, although they are generally found the same after coagulation as before, still they are, under certain circumstances, seen to contain granules and fibres, arising from the coagulation of fibrine. It is not my intention to enter into a discussion with regard to the two above opinions, as I consider it to be a mere waste of time, and they require no serious refutation. Any one may convince himself that the fibrine does really solidify from a state of solution by simple microscopical examination of any kind of blood immediately after withdrawal: if a drop of this be placed between two glasses, and immediately examined, any single one, or several of the colourless corpuscles, and intervals between the corpuscles, may be particularly noticed, and the corpuscles may be observed to remain perfectly unaffected, and granules and fibres to form in places which were previously perfectly clear and without any motion. Moreover, the experiment of Dr. Anderson is perfectly conclusive on this point; he divided a mixture of serum of the blood and the fluid of hydrocele into two parts, and, while leaving one untouched, separated by filtration all the corpuscles from the other while still fluid, and tested their absence by the microscope, and yet the eye could

* Comptes Rendus, April 1844; also Chem. Gaz. June 1844.

† Hufeland's Journal, April 1838.

‡ Gulstonian Lectures, 1845, Med. Gaz.

detect no difference between the coagula subsequently formed in the two portions, nor, when aided by the microscope, any corpuscles newly formed.*

We must not allow any experiments on buffy blood to explain appearances ensuing in the fluid when healthy, as the buffy coat is constituted of oxides of proteine, which the healthy fibrine does not contain.

The experiments of Denis and Lécaneu, apparently producing fibrin from the corpuscles by a solution of nitre, teach us nothing on the point, as neither the spontaneous coagulation, nor the peculiarity of ultimate composition (the only two positive characters of fibrine), is proved by them.

The albuminous matter within the globules has been considered as a peculiar substance, and denominated globuline by Berzelius†, whilst Simon considered it as a modification of caseine‡. Berzelius says it differs from albumen in two circumstances; first, by being insoluble in a saline liquid which contains albumen in solution, but being soluble in pure water. Thus, says he, we may dilute the blood copiously with water containing a little salt, without the globuline being dissolved; the second distinction is, that when a solution of globuline in pure water is heated to a certain temperature, it coagulates, but the coagulum forms neither flocks nor a coherent clot, but a granular mass, quite distinct from coagulated albumen. It is quite evident that the first distinction is unfounded; the reason why a saline solution does not dissolve the corpuscles, and water does, is, that the former has comparatively no action upon the walls of the corpuscle, and merely withdraws a small quantity of their contents in consequence of an exosmotic action, whilst water, by a powerful endosmotic action exerted by the corpuscles, distends, and finally bursts, most of them, their contents then becoming diffused through the liquid. Moreover, "if the blood corpuscles (*i. e.* the red deposit from the mixture of the blood with sulphate of soda) be mixed with water, a deep-red solution is formed, which, by saturation with common salt, or sulphate of soda, deposits no matter soluble in water. If globu-

line, having the properties attributed to it, were contained in this solution, sulphate of soda should occasion its separation, which is not the case."* The second distinction is worth no dependence; it is frequently seen in true albuminous solutions—in albuminous urine, where the impregnation is slight: in a specimen of chylous urine lately given me by Dr. P. Smith, it was well marked, but this urine certainly contained no blood. In some cases this granular coagulation arises from the coagulation of particles of albumen, not in solution, but suspension; it may be well seen in albumen precipitated by dilution with water; if the fluid containing these particles be boiled, the albumen becomes perfectly coagulated. Particles capable of assuming this condition are found in both the blood and solution of the crystalline lens, and may probably have some share in the phenomenon.

Simon regarded the albumen of the corpuscles as caseine, because it was precipitated from its solutions by acetic acid, and a scum formed upon its surface by heat. These distinctions are of no value, for the albumen of the corpuscles has no different behaviour towards acetic acid from other varieties of that principle; and it has been shown by Scherer† that the formation of a scum on albuminous solutions is quite dependent upon collateral circumstances. Müller found this matter deficient in phosphorus, that it contained less sulphur than albumen, thus amounting to the proportion of 15 proteine + 1 sulphur. But it must be recollected that the modes of estimating these minute quantities of sulphur and phosphorus are not very accurate, and in obtaining this albuminous substance for analysis, mineral acids are used, which can hardly be applied without producing alteration. When treated with boiling dilute alcohol, this substance is partly dissolved, being deposited as the solution cools. When we review these considerations, it appears certain that the grounds for considering this substance as peculiar are not satisfactory. Further, the name itself is inapplicable, for "globuline" implies some relation to globules, whereas this substance has none what-

* Edinburgh Monthly Journal, July 1844.

† Lehrbuch, vol. ix.

‡ Anthropochemie, p. 81.

* Handwörterb. der Chem. von Liebig. u. Pogg. art. Blut.

† Annalen der Pharmacie, vol. xl. p. 292.

ever, the only globules in the blood, and which are comparatively few, probably containing but a small proportion of it. This, therefore, may serve as another ground for its dismissal.

That albumen exists in solution in the corpuscles may be proved by treating them with a concentrated solution of sulphate of soda, in a tall glass vessel, allowing them to subside, pouring off and replacing the supernatant liquid by fresh, until it ceases to yield albumen on the application of the ordinary tests. If the mixture be then filtered, on treating the corpuscles with water they burst, and the liquid, by the ordinary tests, becomes strongly albuminous. Of course, the utility of the preparatory washing with the sulphate of soda is to remove the adherent serum.

The colouring matter of the blood cannot be perfectly removed by any direct process. In that adopted by Simon, a portion of what he has denominated hæmapheine is formed; this substance is of a reddish-brown colour, is soluble in alcohol, water, and ether; it is, however, a *product*, as no such substance exists in the undecomposed healthy blood. Simon has, moreover, found that in some cases, especially those in which we have reason to know that the vitality of the blood is impaired, this substance is yielded in considerable quantities; this arising from the more readily decomposibility of the blood. The experiments of Scherer, tending to prove that the colouring matter of the blood is independent of the iron, are curious, and apparently show that the oxide of iron in the blood exists in combination with the hæmatosine as a base.

The action of water upon the corpuscles presents another point worthy of consideration. If it be scantily added, the corpuscles remain in suspension, and may be detected by the microscope enlarged, swollen, and spherical. If solution of diacetate of lead be then added, the whole fluid becomes and remains slightly milky, but no precipitate ensues, even at the end of some hours. If, however, the water be added in great abundance, the corpuscles disappear almost completely, their coloured contents are diffused through the fluid, and a white precipitate falls. If the quantity of water be not very considerable, the addition

of solutions of high specific gravity, or solution of iodine, will render the corpuscles again distinguishable. In fact, it is denied by Donné that the corpuscles are really dissolved by water. This is, however, only partly true, for it may be readily observed, on the addition of water to the corpuscles under the microscope, that they are unequally affected, some being much paler and more swollen than others, which probably arises from a difference in thickness of the abdominal parietes, and a more advanced stage of development, and in no instance do they all disappear, for one or two may always be detected. The white or buffy deposit, which subsides when the solution is set aside, is considered as composed of burst membranes of corpuscles and nuclei by Dr. Rees*, of the nuclei of the corpuscles by Wosset†, and of membranes, chyle, and lymph-corpuscles by Simon. Neither of these authorities are, however, in my opinion, perfectly correct. The deposit certainly does contain burst membranes, nuclei of the colourless corpuscles, with occasionally, perhaps, chyle corpuscles, but these form the smallest portion of it. The greater part is composed of albumen precipitated from the fluid within the corpuscles. All albuminous liquids, except when containing a great excess of saline matter, are precipitated by dilution with water, and in all such cases globules may be perceived, some of which might be interpreted as nuclei. That the deposit is not composed of membranes of the corpuscles may be proved by treating the globules, separated from the blood by sulphate of soda, with water, when a comparatively slight precipitate will occur; but if it had been constituted by membranous sacs, the sulphate of soda would not have retained them in solution, as they are insoluble in it; otherwise we should be unable to treat the corpuscles with that reagent without effecting their solution; moreover, the deposit itself is almost entirely soluble in the sulphatic solution. Its microscopic appearance, moreover, clearly shows that it is not composed, at least mainly, of any uniform kind of globule or membrane, but that it principally consists of amorphous shreds and flakes of a finely granular appearance, quite

* Guy's Hospital Reports.

† Das Blut in mehrfachen Reziehung, &c.

dissimilar to the smooth transparent aspect of the distended blood-sacs, and such as albumen precipitated in this manner invariably presents. The precipitate could not be confounded with nuclei of the red corpuscles, as they certainly have none*. The smooth transparent appearance of the walls of the red corpuscles is not changed for a rough or granular one, similar to such as we here see by the action of water, nay, not even by boiling, for, although a large number of them are destroyed and rendered indistinguishable in the boiled blood, by the compression of, and confusion with, the coagulated albumen, still some may always be seen retaining completely their transparency.

The existence of bile in the healthy blood has never been proved, although undoubtedly it is present in minute quantity; the same applies to the urea. Simon obtained this substance from a very large quantity of the healthy blood of a calf. The sugar has been detected by Mr. McGregor in healthy blood after a meal. I shall allude to the latter three ingredients again on a future occasion.

The alkalinity of the blood has been made the subject of late examination by M. Enderlin.† It is well known that all albuminous liquids react to a greater or less extent as alkalies, and that this has been accounted for by supposing the existence of pure or carbonated alkali, either free or in combination with the animal matters. M. Enderlin considers that the blood contains neither free alkali, nor any alkaline carbonate, but that it owes its alkalinity to tribasic phosphate of soda ($3\text{NaO} + \text{P}_2\text{O}_5$). M. Enderlin found that the ash of blood behaved as follows: no effervescence ensued when treated with acids; when exhausted with hot water, it yielded a strongly alkaline fluid, always containing alkaline phosphates, sulphates, chloride of sodium, and

sometimes of potassium, and these salts only.

α. The watery solution, when treated with nitrate of silver, produced a yellowish precipitate, partly soluble in nitric acid without effervescence. When the filtered solution was treated with ammonia, the characteristic yellow precipitate of phosphate of silver (3AgO , P_2O_5) was apparent. After this precipitation the fluid was neutral.

β. When the aqueous solution of the ash was treated with chloride of calcium, a gelatinous substance, composed of phosphate of lime (3CaO , P_2O_5) fell, which was also soluble in nitric acid without the slightest effervescence. After this addition the fluid remained neutral. From these experiments, supported by some collateral facts, for which I must refer the reader to the original paper, M. Enderlin draws the above conclusion. My own experiments lead me to the very opposite one, and they have been repeated with the utmost care. I have never failed to find the ash left on incinerating either blood, or the serum only, not only strongly alkaline, but effervescing considerably upon the addition of dilute acid; and further, I have conducted this gas through lime water, and found that it precipitated the lime in the form of what I subsequently ascertained to be carbonate of lime. The precipitate with chloride of calcium I have also found to effervesce distinctly on treatment with acids; after, of course, well washing. Moreover, I am inclined to believe that there is no relation whatever between the carbonated alkali existing in all animal fluids, and the phosphate of soda; in all probability, a portion of alkaline phosphate is formed during the incineration; in fact, it must be so, as phosphate of lime, when treated with carbonate of soda, is decomposed; moreover, if the tribasic phosphate of soda were the cause of the alkalinity, the soda found in analysis should correspond in proportion; such, however, cannot possibly be done with the results obtained by the best analysts, and in some cases, where the alkaline carbonate is in its usual abundance, there is no phosphate of soda present at all, as in the albumen of eggs, and some specimens of fluids from ovarian tumors. I am glad to find that Dr. Rees's experiments regarding the presence of alkaline phos-

* The nuclei of the red corpuscles have usually been supposed to exist from analogy with those of reptiles. I consider, however, such analogy false, as in all probability the colourless corpuscles of human blood are the representatives of the nuclei of the corpuscles of reptiles. As regards our capability of detecting them with the microscope, it must be recollected that we can recognize with ease, and distinguish accurately, the forms and peculiarities of bodies many times more minute than the nuclei of the red corpuscles are said to be; therefore, if they really existed, we should be able readily to detect them. However, such is not the case.

† Ann. der Pharm.

phate in the latter fluids agree with my own, as I was not aware of his results at the time I made my experiments. In addition to this, if all soluble phosphate be dissolved out of a dried albuminous liquid by boiling distilled water, and then the undissolved residue be incinerated, an ash containing carbonate of soda is always obtained: finally, that bubbles of gas were evolved by treating the white of egg with acetic acid, and which could scarcely be anything but carbonic acid, was proved by Simon, and by adding serum to dilute acid, in an apparatus similar to that used for detecting nitric acid by sulphate of iron, supplying the place of the solution of the sulphate by lime water, I have distinctly been able to show that bubbles are disengaged copiously, and that these bubbles consist of carbonic acid*; the same effect does not take place when serum is mixed with solution of chloride of sodium, water, &c. showing that it is no simple effect of dilution or admixture†.

[To be continued.]

DEFINITE CONSTITUTION OF MATTER.

MATTER must have been made in definite atoms, or how should different chemical elements always combine by weight and measure, in exact order and proportion—so much of one to so much of another, and in no other manner? The reason of this universal fact we can understand, when we conceive that so many definite atoms of one element combine with so many definite atoms of another. If there be not definite atoms, how can there be definite combinations?—*Dr. Moore on the Power of the Soul over the Body.*

* I have since repeated the experiment with fresh white of egg and acid in the same apparatus, and have proved that absolutely copious evolution of carbonic acid does take place.

† After briefly noticing the views of authors on digestion, M. Enderlin says, "We have arrived, from our ash analyses, at another view, and have no hesitation in declaring digestion to be essentially a simple chemical solution of the alimentary matters in phosphate of soda, choleate of soda, and chloride of sodium; and, if we do not greatly err, this view is further supported by the comparative anatomy and history of development of the embryo"!!! This is a most unfortunate conclusion, but one equally as tenable as any other put forward in the papers alluded to. The only circumstance which is indisputably established regarding the physiology of the digestion of food is the acidity of the gastric juice; the cause of this acidity, the existence of a fermentation, &c. &c. are still uncertain, but this is agreed upon by all; it therefore completely puts an end to the above view.

OBSERVATIONS ON THE PERMANENCE OF THE DUCTUS ARTERIOSUS, AND CONSTRICTION OF THE THORACIC AORTA.

AND ON THE MEANS BY WHICH THE DUCT BECOMES NATURALLY CLOSED.

BY NORMAN CHEVERS, M.D.

THE Canalis Arteriosus,—which usually begins to contract shortly after the commencement of respiration in the new-born infant, and, under normal conditions, becomes closed between the sixth and twelfth day after birth,*—occasionally remains in a state analogous to that which exists naturally in several of the diving mammalia—that is to say, continues permanently open, allowing the passage of blood either directly from the pulmonary artery into the aorta, or in the reverse direction. The former accident being liable to take place whenever an undue load of blood is thrown upon the right ventricle, or when any cause of pulmonary obstruction occurs; the latter, upon occasions of impediment to the systemic arterial circulation, or in consequence of the left ventricle having excessive or deficient propulsive power as the result of hypertrophy or the opposite condition.

The necessity for such an arrangement of parts in an air-breathing animal whose habits also compel it occasionally to remain for long periods under water, is perfectly apparent; but, in the human subject, the permanence of this condition, (except in instances where the communication is extremely narrow), forms a state of rather severe disease, which, although not at all times sufficiently developed to interfere much with the patient's comfort, is always liable—under the superaddition of various other influences, occasional as well as permanent,—to become a very severe and injurious morbid complication, and which, like most other forms of congenital malformation of the cardiac apparatus, appears to have a direct influence in preventing the patient from attaining an advanced age, and that often by

* Taylor—Manual of Medical Jurisprudence, p. 476.

the tendency it has to determine the occurrence of a fatal result in diseases which are not apparently in themselves of a very serious nature.

As would be expected, (drawing an analogy from the fact of this state existing naturally in certain animals) complete admixture of the venous with the arterial current of blood, and its consequence, cyanosis, is not usually of persistent occurrence, in cases of this description, so long as the lungs and the body of the heart continue sound, and the patient remains in a tranquil state:—but the blue disease is always liable to make its appearance, either in the form of slight discolouration of the extreme parts, or of general lividity of the surface, at times when the vascular system becomes overloaded with fluid, and whenever the circulation is in any way hurried, or the respiration impeded; and it may be rendered permanent whenever any fixed obstruction to the circulation is established either in the pulmonary or systemic vessels.

There are several forms and degrees in which this malformation may exist. Some years since I observed the following appearances in the body of an adult female, who died of phthisis. The ductus arteriosus was about half as long as it is found in the ordinary closed state, and was capable of transmitting a common director. The passage of blood from the pulmonary artery into the aorta was precluded by a small mass of vegetations which, adhering around the pulmonary orifice of the duct, acted on that side as a kind of valve; a slender current may have passed freely in the contrary direction. There was no reason to believe that this patient had ever suffered from cyanosis, except that her face was noticed to become rather livid during the attacks of dyspnoea which preceded her death.* Cases of this kind are of exceedingly rare occurrence. In some instances the canal has been found of the same width as the aorta, and where, as is then generally the case, entire closure of the latter vessel, distal to the left subclavian artery, has occurred, the aorta is said to be a continuation of the pulmonary artery.

In the case of a young man who died of pneumonia, which was attended with some lividity of the face, the

pulmonary artery was found to be in contact with the aorta at the spot where the arterial cord usually exists, and there the two vessels communicated by a rather irregular circular opening about two lines in diameter. The aorta was considerably strictured above this opening.* A brother of this man died shortly afterwards, and in his heart also a congenital malformation existed. In cases of the second and third class defective conformation must have originated the disease during the period of intra-uterine life; in the first instance the cause is more obscure, from the difficulty of proving whether the persistence of the canal depended upon congenital defect, or upon influences which came into action after birth; the latter, however, was most probably the case, as the parts appeared to have been originally well-formed.

Various degrees of contraction, and at times complete obliteration, of the upper part of the descending thoracic aorta, have frequently been observed in connection with a permanently open state of the canalis arteriosus; similar narrowing has also been discovered where this canal was closed. The artery may be found either contracted or quite occluded a short distance above, or immediately below the duct; in these cases, either the canal has become greatly contracted for a short distance, or a raised falciform process extends partially across it, or it is closed abruptly as though it were tied with a thin cord. These appearances are generally unaccompanied by any puckering, roughening, or other trace of inflammatory action having previously existed in the parts. It is to be remarked that these forms of narrowing and obliteration never occur at any other portion of the aorta except that which is closely adjacent to the canalis arteriosus.

There are several forms in which contraction of the aorta may occur. It may be present: as I have already mentioned—

* Preparation, 138380 Museum Gny's Hospital. Dr. Elliotson has recorded an instance in which there was a small aperture at this situation, between the pulmonary artery and the aorta. No trace of a ductus arteriosus remained. The subject of this malformation was a young girl who had always been more or less cyanosed. Two or more instances are upon record in which aneurismal communications formed between the arteries nearly at this spot.

(1.) In conjunction with an open state of the duct.

(2.) When the duct is closed.

Under the first circumstances the appearances may be as follow :—

The aorta constricted or closed above the duct, the duct open.*

Constricted opposite to the duct, the duct open†.

Constricted both above and below the duct, the duct barely pervious.‡

The duct may be open without constriction of the aorta.

In the second class of instances the aorta may be—

Constricted above the duct—the duct being closed.§

Obliterated or constricted opposite the insertion of the arterial ligament.||

Constricted or obliterated below the position of the duct, that passage being closed.¶

Constriction both above and below the duct, the duct closed.**

The following general conclusions appear to be deducible from an analysis of the cases of aortic contraction referred to in the notes, which I believe comprise all the instances of the kind upon record.

That contraction of the aorta above

the duct is not necessarily attended with permanency of the latter canal.

That obliteration or great contraction of the vessel below the opening of the duct has not been found to be attended with a permanently free communication through the latter canal,

* Case referred to above.—Gintrac records an instance in which the aorta is stated to have disappeared after furnishing the brachio-cephalic trunks: the foramen ovale was open, and the pulmonary artery, receiving the blood from both ventricles, formed the descending aorta. In cases of this kind the aorta is probably obliterated just below the left subclavian artery; and the canal of the ductus arteriosus remains so large as to form a wide continuation of the pulmonary artery into the descending aorta.

† Case of a medical man, æt. 27, in whom the aorta, opposite to the spot where the duct joined it, appeared as if a sharp substance had been pressed upon its upper surface, so as to diminish its diameter one half. The arterial canal remained pervious. The aortic valves were highly diseased, the communication between the ventricle and the artery being reduced to a mere slit.—*Mr. R. L. Nixon, Dublin Medical Journal*, Vol. v.

‡ The subject of Dr. Graham's well-known case (first published in the *Medico-Chirurgical Transactions*, Vol. v. p. 287.) was a youth, æt. 14 years, in whom the aorta was found greatly constricted above the arterial duct, and completely obliterated below it. "A probe passed from the pulmonary artery along the canalis arteriosus to the obstructed portion of the aorta; but, from its thickened appearance, it did not seem probable that, by means of it, much communication could have been allowed." This is the only instance with which I am acquainted where life was prolonged with obliteration of the aorta below the duct, that canal still remaining pervious. But, even here, the communication must have been so extremely slight as to have been scarcely worth taking into account. I believe the duct has not been found widely open in any instance where the artery was closed or strictured distal to the orifice of that canal. Such a state of parts would be scarcely compatible with prolonged life, as it would be attended with the simultaneous distending pressure of two columns of blood, from the right and left side of the heart, upon that portion of the aorta which lay above the impediment; and as, under such circumstances, (even were the tissues of the obstructed vessel capable of sustaining the united impulse of the two ventricles) the delay, thus produced, to the emptying of the left cavities of the heart could not fail to give rise to the most serious results.

§ M. Paris's case. The aorta constricted to the size of a writing-quill, immediately beyond the arch, in a female, aged 50.—*Dessault's Journal*, vol. 2, p. 107.

Case by Dr. Adolph W. Otto.—Aorta scarcely admitting a writing-quill, from stricture close beneath the arch; in a well-grown female, æt. 17; congenital malformation of the aortic valves. Death from rupture of the ascending aorta.—*Nene Seltene Beobachtungen*, Part 2, p. 66.

Case of a man, æt. 92, in whom the aorta was found contracted to the size of a crow-quill immediately distal to the left subclavian artery.—*M. Reynaud, Vol. 1. Journal Hebdomadaire de Med.*

|| Aorta obliterated at this point in an officer of rank, æt. 45 years.—*Dr. Roemer, Archives Gen. de Med.* Dec. 1841.

¶ Stricture of the vessel, with difficulty admitting the little finger, where the duct terminates; death from rupture of the right ventricle, in a gentleman, æt. 57.—*Mr. Winstone's Case.—Sir A. Cooper's Surgical Essays*, p. 115.

Shewn in different degrees in Preparations 145070 and 145075 Guy's Hospital Museum.

¶ The aorta constricted to the diameter of a straw, at this spot, in a robust countryman, æt. 35—Death from rupture of the right auricle.—*A. Meckel, of Bern.—Archives of John F. Meckel, for 1827, and Med. Gazette*, vol. 2, p. 160.

Aorta, below the arterial ligament, altogether impervious to the extent of a quarter of an inch, in a girl 7 years of age.—*Dr. Craigie, Edinb. Med and Surg Journ.* vol. 56, p. 427.

Mr. Joseph Jordan's case of a butcher, æt. 20, in whom the aorta was found completely obliterated by a thin s-mi-transparent partition situated about three lines below the arterial ligament.—*North of England Med and Surg. Journ.* vol. 1, p. 101.

** M. Le Grand.—The aorta slightly constricted above the origin of the left subclavian artery, and obstructed below the arterial ligament by a membranous partition perforated in the centre by a circular opening a line and a half in diameter.—*Tract, Paris 1832.*

Case in which the aorta was narrowed above and below the origin of the left subclavian, and constricted almost to obliteration below the attachment of the ligament. The individual was a labourer, æt. 25 years.—*Mr. W. Muriel, Guy's Hospital Reports*, vol. vii. p. 444.

and that, in the generality of such cases, the duct is quite impervious.

From these two facts it seems probable that constriction of the thoracic aorta does not usually take place until subsequently to birth.

It is proved that the collateral circulation has been quite sufficient to maintain the arterial supply, to the lower part of the body, in cases where the aorta had become entirely closed, opposite to the insertion of the arterial ligament; and this in examples where the *canalis arteriosus* was quite impervious.

There does not appear to have been uniformly a tendency to cerebral disturbance in the persons who have suffered from constriction of the thoracic aorta, but in four of the cases upon record the patients became the subjects of brain disease, as evidenced either by the symptoms during life, or by the post-mortem appearances.

The subjects of contraction or obliteration of the aorta may reach an advanced age without appearing to be seriously affected with symptoms of vascular impediment, but death ultimately occurs either from cardiac or pulmonary obstruction, or, as Dr. Craigie observes, from rupture of the aorta or walls of the heart.

It has been assigned as an explanation of aortic constriction, that a process most probably of an inflaming nature, which has closed the duct, has thence been prolonged to the aorta, and produced a similar contraction there. But this supposition is opposed by the fact of the existence of a set of cases, in which, although the aorta is constricted or closed, the duct still remains open.

Patency of the duct is occasionally found in connection with congenital narrowing or closure of the pulmonary orifice, thus becoming a means by which the pulmonary circulation is assisted or supplied by the systemic. The entrance of the pulmonary artery may, however, be the seat of extreme congenital narrowing, without being attended with patency of the duct.

Permanency of this canal may be considered to depend in most cases upon the operation of one or other of two sets of causes.

1. It may be due to the existence of some impediment to the course of the circulation in the fœtus;—and in all

probability it matters little in what part of the vascular circle this obstruction originates; whether in the left cavities of the heart, at the orifice of the aorta, or in any other part of the arterial system, in the vessels of the placenta, or of the cord, in the veins, right side of the heart, or lungs. There is every reason to believe that the presence of any fixed and considerable obstacle to the outgoing or returning blood during intra-uterine life has a tendency to produce a degree of alteration in the structures of the duct sufficient to prevent it from closing after birth. A similar obstruction occurring soon after respiration has commenced, would equally tend to maintain the patency of the canal.

2. It may depend upon failure of the process, of whatever description that may be—whether vital or mechanical—by which the duct is naturally closed.

The previous operation of such of the above causes as are not attended with very obvious structural change, is, however, extremely difficult to prove, as the survival of the individual for a few years must be expected entirely to remove all traces of the existence of such influences.

Considerable difference of opinion exists among physiologists with regard to the nature of the means by which obliteration of the arterial canal is effected. We can readily account for the closure, shortly after birth, of the *canalis venosus*, and of the umbilical arteries, but that of the arterial duct is far more obscure. Exceedingly vague and inconclusive reasons have been assigned to explain this phenomenon; the principal, and most generally received, of these is, that, upon the first expansion of the lungs, the blood gains an increased tendency to flow into the arteries of those organs, and its current is thus diverted from its original channel, which now, being no longer required, shrinks up by its own elasticity, and gradually closes*. This mode of accounting for the obliteration of the arterial canal appears to be far from satisfactory, for it is scarcely credible, or accordant with our present knowledge of physiology, that an artery, which is nearly equal in calibre to both of the pulmonary branches together, and which has hitherto transmitted

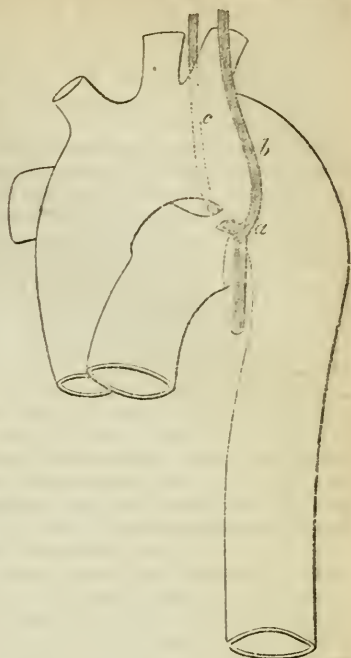
* Bostock's Physiology, vol. 1, p. 370.

nearly one half of the blood circulating through the heart, to say nothing of its close proximity to the distending force of the right ventricle, should suddenly and spontaneously begin to contract soon after birth, and become entirely closed in from six to twelve days, merely because it is no longer required. Indeed, the argument that, when respiration commences, the current of blood becomes so entirely diverted from the duct into the pulmonary vessels as to cause that passage to become obliterated from deficient supply, appears to me as unphysiological as would be the assertion that, after a temporary arrest of the circulation through the lower part of the abdominal aorta, the middle sacral artery must cease to be supplied with blood, and at length become obliterated in consequence of the stream having a greater facility in passing through the iliac trunks.

It appears to be required that some special process, either vital or mechanical, should be sought for, as directly concerned in bringing about the closure of this vessel.

Mr. King has suggested* that expansion of the left bronchus, together with elevation of this canal consequent upon the commencement of respiration, produces compression of the duct. It will be observed, however, that the canal does not close by a general flattening and apposition of its sides, as would probably be the case if it were compressed by a wide surface like that of the bronchus, but its closure commences by a narrow constriction which is localized at a particular part of its course. Still, I will not deny the possibility that, in conjunction with other agencies, the entrance of air into the bronchus, and the consequent change in its position, may to a certain degree influence the closure of the duct.

There exists, in immediate contact with the remains of the ductus arteriosus, a well-known but remarkable arrangement of parts, which appears to afford some clue to the manner in which this vessel becomes obliterated, and which, at any rate, well deserves the attention of physiologists. The pneumogastric nerve gives off the left recurrent laryngeal branch nearly upon a plane with the aortic attachment of the arterial ligament. In its upward course



this latter nerve curves under the ligament, lying in immediate contact with it, and evidently pressing it upwards, so that a complete nervous loop (*b. a. c.*) is formed around the arch of the aorta, in which the obliterated canal is included. I have been led to believe that this arrangement of the recurrent nerve is intimately concerned in producing the closure of the ductus arteriosus. This idea suggested itself to me from observing the following fact. Every anatomist is acquainted with a small transverse mark which is almost invariably found upon the internal surface of the under part of the descending aortic arch; this mark does not usually exactly correspond with the insertion of the arterial ligament, but is situated about two or three lines below it. The interior of the vessel is generally rather irregular here, and the central portion of the spot not unfrequently incloses a small ossific plate. No corresponding transverse mark is discoverable in the pulmonary artery. The recurrent nerve, just before it curves around the arterial ligament, is invariably found to be closely apposed to the aorta precisely exterior to this spot (*a*): so uniformly does it occupy this position that, if we

take the aorta with all the parts surrounding it, *in situ*, and, after laying open that vessel at the posterior surface, thrust a lancet through the centre of this spot, in such a manner as to cut through the transverse fibres of the vessel, it will almost certainly be found that the recurrent laryngeal nerve has been divided. Observation of the uniform correspondence of this mark with the portion of the recurrent nerve which is in contact with the under part of the aorta, has led me to entertain the belief that the pressure, or, at all events, the presence of the nerve, has produced this alteration in the coats of the vessel*. The facts that this mark occasionally forms a rather elevated ridge†, and that, at this precise spot, great contraction, and even entire closure of the aorta, are liable to occur, induce the supposition that the nerve is concerned not only in producing abnormal contraction when it appears at this part of the aorta, but in effecting the natural closure of the ductus arteriosus. In considering these suggestions, it will be borne in mind, that at each of the parts of the aorta where constriction is liable to occur, either the recurrent or pneumogastric nerve lies in contact with the vessel (*a b.*) That, upon the authority of Dr. Craigie‡ and other observers the contraction of the duct commences either at the aortic end, or in the centre, and that this narrowing commences as a constriction of the canal, not as a flattening. It is also interesting to observe that one of the first nerves brought into action after the birth of the child is the recurrent laryngeal, in preparing the muscles of the larynx for the first inspiration and the first cry; and that, from this moment, it is stated, the arterial duct begins to contract§.

* It is generally supposed that this mark is the trace of the aortic orifice of the duct: it is probable that the duct did open nearly at this spot, but it is not evident why its closure should leave so large a mark in the aorta, while only a minute puncture remains in the pulmonary artery; and it is improbable that this alone would produce a wide transverse line, when the former orifice of an obliterated artery is usually marked only by a small depressed circular spot.

† Reynaud has remarked, that, in almost all adults, the aorta shows a certain degree of constriction at the very place at which the ligamentous arterial duct is joined to it.—*Dr. Craigie.*

This is certainly often the case. See also Preparations 14507^o and 14507^o Guy's Museum.

‡ In a valuable paper on "Obliteration of the Aorta beyond the Arch," (*Edinburgh Med. and Surg. Journ.* vol. 56, p. 427), wherein most of the cases of the kind upon record are very minutely detailed.

§ Bernt, of Vienna, who has especially ob-

At every subsequent inspiration of the infant, the larynx and the parts attached to it become much raised, and hence the loop which the recurrent forms around the duct must become considerably and permanently tightened.

Such is the train of facts and arguments which have occurred to me as offering a possible elucidation of the process by which the canalis arteriosus is naturally closed, as well as appearing to afford a clue to that hitherto inexplicable malformation, stricture of the aorta. I do not wish, however, to attach too much importance to this theory, for, although the facts upon which it is based are worthy of notice, they, of course, do not by any means amount to a complete demonstration of the intended results: and every practical observer must have proved how entirely the most apparently conclusive arguments often fail in affording true explanations of natural laws.

After I had prepared the above remarks for publication, I met with the account of a case which affords a remarkable corroboration of the view I have advanced with reference to the agency of the nervous loop in producing constriction of the aorta. In the *Dublin Medical Press*, Vol. viii. p. 251, a case is quoted from Dr. Roemer, of Vienna, who found the aorta obliterated to the extent of half an inch, at the point where the arterial duct terminates, in the body of an officer of high rank in the Austrian army, 45 years of age. In the detail of this very remarkable case, it is mentioned that "the left laryngeal recurrent nerve was greatly stretched, and the turn which it makes round the aorta corresponded to the obliterated point of that vessel."

Upper Stamford Street,
March 1845.

WATER-GRUEL (HYDROPATHY.)

IN an old paper, dated Friday, 13th August, is the following curious advertisement:—"At the Marine Coffee-House, in Birchington-Lane, is water-gruel to be sold every morning from six till eleven of the clock. 'Tis not yet thoroughly known; but there comes such company as drinks usually from four or five gallons in a morning."

served the changes which take place in the ductus arteriosus after birth, says, "that if the child respire only a few seconds, the duct becomes contracted at one of its extremities, commonly at the aortal end."—*Taylor's Manual of Medical Jurisprudence*, p. 471.

RECOVERY

AFTER

SEVERE BODILY INJURIES, WITH
PROBABLE FRACTURE OF THE
BASE OF THE SKULL.*To the Editor of the Medical Gazette.*

SIR,

I HAVE taken the liberty of forwarding the following case for insertion in your valuable periodical, thinking it interesting on account of the severity of the accident, the active measures which were required to prevent serious inflammation of the brain or its membranes coming on, the complete cure which has been the result, and this in a country particularly unfavourable to union either of the soft or bony tissues, owing probably to the peculiar arid state of the atmosphere, and the saline character of the water, in consequence of which scurvy is very prevalent.

Trusting you may deem it worthy of notice,

I have the honour to be, sir,

Your obedient servant,

WILLIAM J. STUART,

Assistant Surgeon, Hon. E. I. C. S.
Bombay Army.

Aden.

J. W. ætat. 18, belonging to Hon. E. I. C. Brig, Euphrates, was admitted into hospital, under my care, at 7 A.M. on the 20th Dec. 1844, in consequence of his having fallen from the fore rigging on to the deck, from a height of thirty feet. I found him in a comatose state; profuse hæmorrhage of arterial blood from the left ear; pupil of right eye dilated, and not sensible to the action of strong light; slight hæmorrhage from the right ear; profuse bleeding from two severe lacerated wounds on the fore part of the chin, which communicated with a fracture through the base of the jaw; on examining which, I also detected a diagonal fracture of its left ramus; the whole of his molar teeth crushed, and the lower incisors driven backwards; there was also evident alteration of the bony structure anterior to the left ear, but could detect no crepitus, though I have little doubt of a fracture of the zygoma near its base having occurred; no other injury of the head. He then referred me to his right thigh, on examining which I detected a very oblique fracture of the femur through its upper third, evidently

having been occasioned by his falling on his knee, as that of the face must have been caused by his falling on his chin. I immediately reduced the fractured femur, applying splints on the outer, inner, and upper surfaces, and placed the limb in a flexed position over pillows. I then brought the edges of the wound in his chin together with adhesive plaster, and as there was much swelling did not attempt to reduce the fractures, but merely applied cold lotion, with strict orders to be silent, and nothing but tea given. Pulse very small and frequent: when accident first occurred was insensible; now comatose.

R Hyd. Chlorid. grs. x.; Pulv. Antimon. grs. v. ft. Pulv. s. s.; Mist. Camph. ʒjss. in hor. j. postea.

10 A.M.—Reaction has now taken place; pulse 80, full and hard; pain in head; restless; pupil of right eye dilated; profuse hæmorrhage from left ear; skin hot.

Venæ Sectio ad ʒxvj. when the pulse became softer, and he felt much relieved.

R Hyd. Chlorid. grs. v.; Pulv. Antimon. grs. iv. M. ft. pulv. 4tis. horis sum.

R Magnes. Sulph. ʒj.; Liq. Ammon. A. ʒiij.; Aq. ʒj. M. 4tis. horis sum.

2½ P.M.—Is again becoming excited. Cont.

5 P.M.—Very feverish; pulse 88, full and hard; pupil of right eye still dilated; very restless; moaning and tossing his head about.

Venæ Sectio ad ʒxij. Cont. Med.

Dec. 21st, 6 A.M.—Restless night; pulse 100, but soft; skin cool and moist; pupil of right eye is now obedient to the action of light; passes urine freely.

Cont. Med.

Pulv. Jalap. ʒij. s. s.

10 A.M.—No change; having got a double-inclined plane made, placed the fractured thigh over it, leaving the splints as previously mentioned; bowels freely open.

Cont. Haust. sine Mag. Sulph. sed. adde Tr. Hyoscyam. ʒjx. pro dosibus.

Cont. Pulv. f. d.

6 P.M.—Pulse 90, rather full; skin warm; slight pain in his head; quite sensible.

R Hyd. Chlorid. grs. x.; Pulv. Antimon. grs. v. ft. Pulv. s. s.

9 P.M.—Acute pain in the head; conjunctivæ of both eyes much injected;

tongue dry; skin hot and dry; pulse 100, full, and incompressible; very restless and excited.

V. S. from a large orifice ad 3x.

When all the symptoms of excitement were relieved, a moisture broke out generally over the body, and the pulse became soft.

22d, 6 A.M.—Had some sleep; bowels relieved three times; pupils of both eyes natural; conjunctivæ less injected; skin cool and moist; tongue furred, and dry in the centre; pulse 100, but soft; complains of little or no pain; face much swollen; blood which was removed last night firm, and buffy coat thick; breath rather foetid.

Omitte Pulveres.

R Liq. Ammon. Acet. ʒij.; Vin. Antimon. ʒss.; Træ. Hyosciam. ʒxx.; Aq. ʒj. M. 4tis. horis sum.

10 A.M.—Pulse 120, but compressible; skin warm and moist; very little pain. Diet, tea and weak arrow-root, or sago.

Cont.

5 P.M.—Pulse 108, and soft; skin cooler and moist; tongue moist.

R Morph. Acet. grs. ʒss.; Vin. Antim. ʒss.; Aq. ʒj. h. s. s.

23d, 6 A.M.—Had a quiet night; skin cool; tongue moist and cleaner; pulse 100, soft; secretions healthy; no pain mouth sore, and breath rather foetid.

Cont. Med.

6, P.M.—Pulse 92, full, feverish, and rather excited.

R Hyd. Chlorid. grs. vj.; Morph. Acet. gr. ʒss. ft. Pulv.

R Vin. Antimon. ʒss.; Aq. Menth. Pip. ʒss. ft. Haust. h. s. s.

24th, 6 A.M.—Had a good night's rest; skin cool and moist; tongue moist; pulse 90, soft; has little or no pain. Swelling of face being now much lessened, and the lacerated wound nearly healed, I applied a splint made with several layers of cloth soaked in Mucilag. Acaciæ, and cut into the form of a four-tailed bandage, applying the centre to the base of the chin; then bringing the lower tails upwards, and carrying the upper tails backwards, completely encased the jaw in a firm hard splint, lined with lint; then applying a long four-tailed bandage over it, and round the head as usual in these cases, prevented any untoward movement of the jaw, and retained the fractured bones as nearly as possible in ap-

position; the fracture through the base of the jaw is just anterior to the masseter muscle, and that through the ramus about a quarter of an inch posterior to it, extending up to the spinous process. I ordered him to keep his teeth pressed forward by means of his tongue, to keep silent, and nothing but tea and arrow-root given him.

7 P.M.—No change.

R Liq. Ammon. Acet. ʒij.; Tr. Hyosciam. ʒxxv.; Vin. Antim. ʒss.; Aq. ʒj. M. h. s. s.

25th.—A tolerable night's rest; is rather feverish this morning, but complains of no pain; is quite sensible; has passed from his bowels several black stools, with a little blood, probably owing to the quantity of blood he swallowed.

Cont. Mist. Salin.; Rep. Haust. c. Acet. Morph. h. s. s.

26th.—Had a good night's rest; no fever; pulse soft; tongue moist and clean; slight pain in his thigh, which is in a good position.

Cont. Mist.

27th.—Progressing favourably; re-adjusted the splints on the thigh, extending the limb at the same time.

Cont.

28th.—Restless night, owing to cramp in his limbs; no fever; pulse natural; tongue moist; bowels open; breath rather foetid. Cont.

Rep. Haust. c. Morph. Acet. h. s. s.

30th.—Re-adjusted splint to lower jaw; the swelling much reduced, and fractures in tolerably good apposition. Complains of slight pain in left side on drawing a deep breath.

R Vin. Antim. ʒxl.; Sp. Æth. Nit. ʒxxv.; Mist. Camph. ʒj. M. t. d. s.

R Tr. Opii, ʒxxv.; Aq. Menth. ʒj.; M. h. s. s.

Jan. 1st, 1845.—Complains of no pain; progressing favourably.

Pulv. Jalap. ʒj. s. s. Cont. Mist.

4th.—Re-adjusted the splints both on the face and thigh; continues progressing favourably.

Ordered chicken broth.

7th.—Slight pain in thigh; doing well.

Rep. Haust. c. Acet. Morph. h. s. s.

9th.—Removed him from the ship to the Marine Hospital, in order that he

might have the benefit of purer air; complains of shooting pains in jaw and thigh.

12th.—Re-adjusted splints; doing well.

17th.—Progressing favourably, though very restless.

20th.—Since he has been in the hospital has been very restless, frequently undoing his bandages, so that I had to readjust the splints every four days, using extension on the thigh at the same time. The fractured portions of the jaw now appeared perfectly united, I therefore removed the splint, but kept a four-tailed bandaged applied, to prevent displacement from too much talking or eating solid food: there is a slight depression where the anterior fracture occurred; a very small provisional callus has as yet formed round the fracture of the femur, and its extremities move on each other, giving an indistinct feeling of crepitus to the finger.

24th.—A small pustule has appeared at the point of the cicatrix on the chin, where the original wound communicated with the fracture; there is a thin ichorous discharge from it, probably owing to a small portion of detached bone: applied a small cataplasim to it: is otherwise progressing favourably, though very weak.

Ordered him a bottle of beer daily, with two ounces of sherry in his arrow-root, and chicken broth.

27th.—Progressing favourably.

Where I suspected that fracture of the zygoma of the left temporal bone had occurred, the bony structure protrudes, so as to give a rounded appearance to that side of the face compared to the other; he can, however, move his jaw freely, and hears distinctly.

Cont.

31st.—Removed the double-inclined plane, and applied a splint to the outer and anterior surfaces of the thigh, having previously extended the limb, and applied a bandage from above downwards, then upwards over the splints, and round the hips. I then flexed the leg, and placed the limb on its outer surface, the foot being raised; the fractured ends of the femur now appear to be united firmly; the callus small in quantity; the pustules on the jaw have healed, and all inflammation disappeared.

Cont. beer, &c.

Feb. 7th.—Applied broad straps of adhesive plaster round the thigh, then the bandage, and one splint on the outer surface of the thigh; is gaining strength. Ordered him to commence using his crutches for a short time daily: a small pustule, with some surrounding inflammation, has again appeared on his chin.

Cont.

12th.—Gaining strength daily; the femur seems firmly united with a shortening of half an inch; I do not yet allow him to place any weight on the leg: a slight discharge from the pustulous opening on his chin. He now takes his usual food, and can eat solids without inconvenience.

Cont. beer, &c.

21st.—Is now convalescent; the pustule on the jaw having healed, and the fracture of the jaw firmly united: there is slight flattening of the face on the side where the fractures occurred, but he complains of no inconvenience from it; can eat his food as well as ever; is rapidly gaining strength in the fractured limb, but I have not yet thought it judicious to dispense with his crutches; there is about half an inch shortening.

March 1st.—Quite well.

This case I consider interesting on account of its showing to what a serious extent the body may be injured, and yet recovery hoped for: it is generally considered that when hæmorrhage occurs from the ears, after any severe injury to the head, that fracture of the base has taken place, and recovery therefore hopeless; that there was a fracture of some part of the base in this case I have no doubt, from the peculiar effect produced on the pupil of the right eye, especially in conjunction as it was with profuse hæmorrhage from the left ear, probably it was the petrous portion of the temporal bone which was fractured, and little or no effusion into the cavity of the cranium occurred.

This case is also interesting as showing the propriety of waiting till reaction comes on after severe injuries to the head, ere we commence active treatment; also as proving the beneficial effects of venesection combined with calomel and antimony in arresting in-

flammatory action, commencing in either the brain or its membranes, a tendency to which is shown by the symptoms, and the good effect of the treatment is well proved by this rapid arrest of the hæmorrhage from the ears, and the pupil of the right eye again resuming its healthy action.

I can also recommend, from its peculiarly good effect in this case, the double inclined plane most strongly in fractures of the femur similar to the one I have detailed; the fracture was very oblique and high up, yet the shortening is very slight, and but little alteration in its form; this I believe would never have been the case with the long straight splint; with the latter, the muscles being kept upon the stretch, while with the former they are flexed, at rest, and much sooner become relieved from spasmodic action.

SOME OBSERVATIONS
ON THE
MEDICAL TOPOGRAPHY, CLIMATE,
AND DISEASES,
OF THE
BIGHTS OF BENIN AND BIAFRA,
WEST COAST OF AFRICA.

BY W. F. DANIELL,
Member of the Royal College of Surgeons of
England, &c.

[Continued from p. 111.]

As the fenny districts contiguous to Bonny are unfit for cultivation, the inhabitants in general purchase their food from the Eboe countries, or produce it in moderate quantities upon their up-land farms. It comprises yams, plain-tains, sweet potatoes, maize, bananas, with poultry, sheep, bullocks, and dry and fresh fish, &c., their culinary preparation of which is remarkably plain and simple. Provisions are scarce, and, if required for the shipping, can only be bought at an exorbitant rate, and frequently their deficiency is so great that they cannot be obtained for any price. To compensate for these drawbacks, the river is bountifully supplied with several species of mullet and other fish, while in the dry season turtle resort to Breaker isle, and the opposite shore, to deposit their eggs, and can be readily captured. Water of a dirty colour, and somewhat brackish, may be got in the village of Little Bonny, but the inhabitants seldom drink it, preferring the palm-wine, or

Jumbo, for their daily beverage, although it is acid and of an unpleasant flavour. The plants and trees observed within the precincts of the town are limited in variety, and comprehend many of those previously mentioned. In addition to them may be usually distinguished the *Bombax pentandrum* (silk cotton tree), *Cucurbita lagenaria* (bottle gourd), *Capsicum frutescens* (bird pepper), *Carica papaya* (Papaws), *Jatropha Curcas* (purge nut), *Cucurbita melopepo* (pumpkin), *Wedelia Africana* (African Wedelia), *Cocos nucifera*, &c., with other species belonging to the *Solanææ*, *Cucurbitaceæ*, and *Compositæ*. The anomalous distribution of plants on this coast is a subject deserving of much consideration, since many edible vegetables, abundant in one country, are not to be found in others. The *Oryza sativa* (common rice), may be adduced as an example in illustration. This nutritious grain, indigenous to the Gold and Windward coasts and most of the kingdoms of central Africa, grows, in this and the other streams of the Bight of Biafra, neither in a cultivated nor wild state, and is only known to the natives from its introduction and importation by Europeans.

The iguana — is regarded by the Bonnians with a superstitious veneration, from the supposition that it is endowed with medicinal and other mysterious powers; and, being under the sacred protection of the priests, any wanton injury to it would be a sure prelude to a rigorous punishment, if not death. The customs of the people of Bonny and New Calabar in these respects somewhat resemble those obsolete pagan rites of animal worship practised by the ancient Egyptians; but their adoration of them as tutelary deities, as has been asserted, is both erroneous and absurd, their preservation being only tolerated from an imaginary idea that they exert some specific influence in the maintenance of the prosperity of their towns.

From the tardy and protracted mercantile intercourse maintained with the neighbouring countries, the number of the inhabitants of Bonny must necessarily fluctuate; they may, however, be stated to average from 12,000 to 15,000, and derive their origin from those Eboes, inhabiting a range of table-lands, about forty miles up the

Rio Andony. It has been called Short Eboe, in contradistinction to that of the Quorra, which occupies from ten to fourteen days' journey ere it is attained. The Andony creek trends for twelve or fourteen miles to the eastward, and, after intersecting a flat and bushy-wooded country, unites with the river of the same name. The tract of land on which Bonny is built, thus isolated from the main, was in former years termed Bandy island. The village of Little Bonny is a quarter of a mile from the eastern suburbs, and appears to be an irregular prolongation of the larger town. Five miles up this creek are the hamlets of Appellima and Minima, located on two gentle slopes, and half enveloped in the sombre foliage of the adjacent forest.* They are the country residences of the king and his chiefs, who resort to them more for the gratification of their natural indolence, than a relaxation from any laborious avocations. The houses are of much neater construction in these places than in the other towns of the river, their framework being composed of European planking, with floors of the same material. They also present a more decorated and improved appearance within. The inland districts beyond these points are as yet a *terra incognita*; the jealousy and illiberality of the natives offering an ineffectual barrier to their exploration. The

northern shore of Bonny river is chiefly composed of tidal accumulations of sand, interspersed with mud banks and channels. It is termed Telafare, or Peter Fortis's land, and is the reflected continuation of the eastern bank of the New Calabar river. There are two or three small towns erected on clearances adjoining the water's edge, and entitled by similar appellations as the districts in which they are situated. The stream at this part is nearly two miles broad, but proportionately contracts as it majestically sweeps to the northward, both banks being fringed with gloomy and impenetrable woods, with a few stray villages and sinuous creeks to break its unvarying uniformity. The branch which passes from the Quorra above Eboe, dry in the fine months, has been stated to be its termination; we have, however, no authentic information to vouch for the correctness of this report.

A comparison between the uncivilized and savage tribes of Western Africa, and the Semitic races, with their affiliated offshoots, cannot fail in pointing out the prominent similarity that prevails in the manners and customs of both. In none of the negro nations are there traces of a participation in the usages of an oriental source more obviously marked than in the migratory tribes of the Joloffs and Mandingoes, the predatory Fellatahs, and the predial Eboes of the Delta.

A superficial acquaintance with their remote and modern history will furnish us with rational grounds for the assumption of this belief, that the habits of the former races were superadditions progressively engrafted upon those of the latter, owing to the promiscuous intercourse carried on with the north-eastern Mahometan kingdoms, but previous to their assimilation changed and vitiated by time and distance. The populations of this and the other rivers in the Bight seem to be partially imbued with the doctrines of Zoroaster, in so far as recognizing two distinct immortal principles—one good, and the other evil—of the nature of which, however, they have but an indefinite and confused notion. The attributes of the first are regarded as of an innocuous and beneficent import; the second, denominated in many parts of Africa as the "evil eye," is feared as a capricious and malevolent spirit, invested

* On the outskirts of Minima may be observed one or two specimens of the *Hybiscus Abelmoschus* (muskochro). They are not indigenous to the place, having been transplanted from the interior. Though the *Hybiscus* tribe flourish in rich profusion in nearly all the tropical regions of Western Africa, the above species is the one least common and least known. Of the plant, the seeds, from their odoriferous musky fragrance, are the parts most highly prized, and when obtainable, usually selected to form one of the ingredients that enter into the composition of the Eboe amulets, or medicinal prophylactics. By the natives of Soudan they are also sometimes administered in dyspepsia and other gastric derangements, as a crurative and stomachic. The Arabs, by whom it is named *Ab-el-Mosch*, and some of the pastoral hordes of Northern Africa, bruise and mix the seeds with their coffee, which thus becomes impregnated with their aromatic virtues.

The *Hybiscus esculentus*, or West India ochre, termed, in Bornow, *Meloheia*, and in Darfour and Arabia, *Bamea*, is the species generally cultivated for domestic purposes. It is one of the most wholesome edibles used by the Africans, and is a favourite constituent of their dishes, being eaten in conjunction with palm oil, pepper, and other vegetables. Its bland and mucilaginous properties strongly recommend it as an article of food to those Europeans who intend to reside for any length of time in these unhealthy localities.

with unbounded power for the procreation and infliction of diseases, and requiring to be pacified by continual oblations in order to avert the morbid effects of his displeasure. By the Eboes especially this principle is greatly dreaded as the cause of all abscesses, glandular enlargements, phagedenic ulcerations, to which the females are so susceptible, and those distempers that afflict them or their flocks. Nor is this dread restricted to these regions alone; for this evil influence, under various modifications, is acknowledged in almost every country in intertropical Africa, and is universally considered in the same unfavourable view. Mr. Bowditch, in his interesting Mission to Ashantee, remarks, in reference to this subject*, that "the power of fascination by the eyes is believed and dreaded in those parts of Africa (interior) as mortal, whether exercised by the fetishmen as priests, or the coorumpun against animals. The idea prevailed in Pliny's time, but it was ascribed to the voice. "In libro quodam Plinii naturalis historiae legi esse quasdam in terrâ Africâ familias hominum voce atque lingua effascinantium. Qui si impensius fortè laudaverint pulchras arbores, segetes lætiores, infantes ameniores, egregios equos, pecudes pastu atque cultu optimas emoriantur repente hæc omnia."

The diseases peculiar to the inhabitants of Bonny and New Calabar are those that proceed from a humid and paludal situation, and are represented by a similar train of morbid phenomena that characterise those of Benin and the Nun. Like them, the most aggravated forms run a speedy course, and are invariably followed by fatal results, from the absence of any appropriate plan of treatment. Charms and medicine-bags fabricated by the Eboe dibia or doctors, and held in the hand, or worn attached to the neck by copper wire, are the means relied upon as preventives against both sickness and danger. Lepra, scabies, and other diseases of the common integument, are usually confined to the lower classes of slaves, from their neglect of the necessary ablution of the body, careless and uncleanly habits, and undue exposure to the vicissitudes of the climate. When such are allowed to assume a chronic form, they become very intractable, and often resist the

most energetic remedies. Instances of a deficient or abnormal organization of the cutaneous textures are seen in the male and female Albinos, several of whom may be met with in the different villages. In the other rivers they are comparatively rare, and it has been asserted that in some parts they are put to death soon after birth.

Pneumonia, catarrhs, and other pulmonary affections, are extremely prevalent in the cold rainy months, their invasion being, in all probability, connected with the greater volume of blood which is then thrown into the deeper-seated organs and cavities from the languid and depressed action of the capillary circulation. Cerebral maladies are seldom of a serious nature unless emanating from mechanical injuries. In congestion of the vessels of the brain or its membranes, accompanied by much febrile excitement, relief is experienced from the native process of cupping, which consists in making three parallel longitudinal, or horizontal incisions on either temple from ten lines to an inch in length, and about eight lines apart. These incisions are performed by a sharp razor, or knife, and a small calabash is then applied, the air being then exhausted by burning paper or cotton *secundum artem*. After the abstraction of a few ounces of blood, the wounds are dressed with a black carbonaceous matter, manufactured from the oil lamps. The employment of this substance leaves a dark indelible stain behind, which, as the individual advances in age, is never wholly obliterated, although its removal is occasionally attempted. This mode of cupping is one constantly adopted by the natives in the Bights in all painful affections of the head. Variola fortunately is not of regular occurrence, since its visitations are of a very pestilential character. In Eboe, the people, from the malicious statements of the Bonnians, imagine that European surgeons enjoy the faculty of generating this devastating epidemic by placing a germinating dust in the palm of the hand, and diffusing it by the breath throughout the surrounding atmosphere. My friend Mr. King, of the Ethiopie steamer, has informed me that this singular opinion exists in several of the towns of Cross River, and that his appearance was the signal for the quick dispersion of their inhabitants.

* Page 336.

Dysentery and other enteric complaints are prevalent in all seasons, but more particularly at the commencement and close of the wet. Numbers all victims to their malignant severity, without respect to either age, sex, or occupation. Rheumatic and other fugitive pains prevail here, as in temperate climes, from unsettled states of the weather, and are treated by repeated ablutions of warm water. Where the pain is more fixed and circumscribed, a series of deep scarifications are made over the part, which is then assiduously bathed with hot fomentations to promote the free oozing of the blood, and these applications are persevered in till the requisite impression be obtained. The propriety of this mode of vascular depletion for the alleviation of human suffering is one clearly suggested by an all-provident nature, and forcibly inculcated in the majority of the African tribes by the dictates of an imperious necessity, as a remedial equivalent producing all the good effects of the more scientific resources of civilized nations.

Hernia, both congenital and acquired, may be occasionally seen in those slaves who are of a lax muscular fibre, or who have been subjected to heavy toil. Exomphalos, or umbilical hernia, is rather viewed in an ornamental light, and some people, under this idea, allow the intestines to protrude to a considerable extent. Gonorrhœa, syphilis, and other genito-urinary disorders, display their numerical superiority here as elsewhere in these regions. Calculous diseases are apparently unknown. The Eboes, from an hereditary predisposition to melancholy and despondence, are affected with the malady which Dr. Winterbottom has termed lethargus, or sleepy sickness, a disease that possibly originates from an impaired condition of the cerebral apparatus, and which has been thought to be one of the sequences of the deranged organic functions of the skin. Cases of this peculiar affection are very uncommon, two or three only having come under my observation during some years' residence in this part of Africa.

[To be continued.]

CONTRIBUTIONS TO THE PHYSIOLOGY OF THE HUMAN OVARY.

Second Series.

By CHARLES RITCHIE, M.D. Glasgow.

[Continued from p. 62.]

IV. Uterine Ovum.

THE oviform character of the conception, in whatever way acquired, was known from the earliest periods*; and the story related by Hippocrates†, so discreditable alike to his moral and perceptive powers, of the courtesan who aborted by his aid at the alleged seventh day after impregnation, continued to be adduced in proof of the opinion down to the time of Harvey‡; when, owing chiefly to the excitement produced by the novel and erroneous speculations of the latter on generation, the sustained and lively attention of physiologists became directed to the subject; and Steno of Copenhagen, Kerckring, De Graaf, and Van Horne§, in particular, engaged each in a series of observations which terminated in the establishment of the fact, that all animals have their origin in an ovum, not formed, as had been supposed, however, in the uterus, from the admixture there of the seminal fluids of both sexes, or from the semen masculinum alone, nourished afterwards by the menstrual blood, or by a plastic power in the uterus communicated to it by the semen of the male, but existing, and that also previous to coition, in the testes of the female, in which it was supposed by De Graaf to be fecundated by an imagined spiritual part of the semen masculinum, conveyed to it, after the notion of Harvey's magnet-like influence, in the form of an *aura*||. Neither the idea of vesicles being contained within the ovary, and contributing in some way to impregnation, nor that of the membranes which afterwards enclose the fetus in the womb having the form of an egg, were new to the physiologists of this period; but

* Aristot. Hist. Animal. lib. vii. cap. vii. De Generat. Anim. lib. iii. cap. 9.

† De Natura Pueri, p. 16.

‡ De Generatione Exercit. 68.

§ Dict. des Sciences Méd. tome xxxix. p. 9. Haller, Physiol. tome vii. p. 114. De Graaf, de Mul. Org. pp. 154, 334. J. Van Horne, Prodrom. Drelincurt. Adv. Cl. i. Kerckringii, Anthropol. Ichonog.; et Stenon. Obs. Anat. spect. Ova Vivipar. in Bib. Anat. Mang. t. i. p. 452.

|| De Graaf, passim.

the statement now made for the first time by Kerckringius, and followed up simultaneously by so many others, that the non-testaceous egg within which the embryo in women and in quadrupeds is formed in the uterus, is nothing else than one of these vesicles loosened from its nidus in the ovary, and conveyed thence by the tubes to the womb, presented the whole subject of generation in an aspect entirely novel, although not absolutely true.

V. Vesicles of the Ovary.

The cellulated structure of the ovaries was known to Galen and all his followers*, and was described sometimes as consisting of vesicles, and at others as made up of hydatids. Their chief mistake lay in regarding this vesicular tissue as a congeries of seminal vessels, which terminated in a vas deferens exactly as in the male; and the physical qualities of the contained fluid, so different from those of the semen virile, and which caused it to be compared by Vesalius†, and many succeeding copyists, to the serum of milk, and by others‡ to the albumen of egg, appear to have given occasion at once to the notion embraced by the Galenists, of its relative weakness, and to that held by their opponents§, that it was simply a fertilizing liquor with which the uterus, like a field or garden, required to be irrigated in order to being made prolific on the accession of the semen masculinum.

Kerckring, De Graaf, and his coadjutors, whose investigations were made about 1670, and between whom a controversy||, not unlike that recently maintained¶ by other parties on almost the same subjects, was hotly waged, misled in their turn** by the supposed identity of the contents of these vesicles with those of the eggs of birds, bestowed on them the name of ova; and although encountering much opposition†† and ridicule, Steno and

De Graaf did not hesitate to assert that the sole use of the female testes, which they now called ovaries, was to secrete and mature these ova.—It is evident from De Graaf's descriptions, indeed, that he had misgivings as to the completeness in every particular, in the case of the mammalia, of this supposed analogy. Thus, at page 348, he speaks, in reference to rabbits, of a body being deposited after impregnation *within* the coats of the ovum, which *surrounds* or *involves* the ovum, and by forcibly compressing it causes its expulsion into the tube, where it is found (p. 401) *ten times smaller in size* than before it left the ovary; and he illustrates his description by a plate (Tab. xiv. fig. 4), in which the proportions of the so-called ovum, as seen in the thickened calyx which remains in the ovary, are contrasted with those of the presumed true ovum now removed from its nidus. Malpighi*, who, contemporaneously with De Graaf, had seen the ovum in the tube, and would therefore be familiar with its minuteness as compared with the size of the ovarian follicles, ten years† after the publication of De Graaf's work, suggested that the vesicles of the ovaries were not themselves ova, but were intended by the union of several of them together to form, deposited on their interior, the substance (corpus luteum) spoken of by De Graaf, from which the ova should afterwards be separated as from a filter; and in 1718, Morgagni‡, reasoning on the discrepancies already referred to in De Graaf's descriptions of the ova, still more remarkably than Malpighi in the above hypothesis, anticipates a discovery of later times by asking—

“Quanto ergo proclivius est conjicere, vesiculas esse glandulas eum quem continent, humorem secernentes, ut in ipso *ovulum* et tutius asservetur, et facilius eum tempus est, incipiat expandi; esse, inquam glandulas quarum partes eodem tempore, eandemque ob causam amplificentur non tantum ut distracta, et ad extremum pertusa ovarii membrana, *ovulo* exitus paretur, verum etiam ut novum tunc nutrimentum eidem *ovulo* suppedietur, vel plus humoris exprimatur quo ipsius *ovuli* exitus, et per tubam delapsus facilius fiat.”

An uncertainty and vagueness, not

* Galen. de Dissectione Uteri, cap. 9. Vesalius, lib. v. cap. 15. Fallopius, op. om. Venice, 1606, tome i. p. 106. Riolanus, lib. ii. cap. 37. Laurentius, lib. vii. cap. 10.

† De Corp. Hum. Fabrica, lib. v. cap. 15, p. 458.

‡ Rod. a Castro, de Natura Mulier. lib. i. cap. 4.

§ Cremonius, quoted by Bartholin, lib. i. c. 26.

|| J. Swammerdam, Miracul. Natur. sive Uteri Mulieb. Fab. De Graaf, Partium Genit. Defensione.

¶ Negrier, Gendrin, Power, Lee.

** Hall. Physiol. vol. vii. p. 114. De Graaf, p. 298. Kerck. Anth. Ich. p. 1.

†† Verheyen, Ph. sup. Anatom. H. v. cap. 11. De Graaf, p. 302.

* Epist. ad Oldenberg, No. 5.

† De Vivipar. Ovis, p. 223.

‡ Adver. Anat. iv. Animad. xxviii.

unlike that which previously distinguished every description of the relations of the female testes with the uterus, became now characteristic of the views entertained regarding the nature of the Graafian vesicles. Some esteeming* them to be simple vesicles, others† as consisting of a vitellus inclosed within a membranous calyx, but both acknowledging them to be genuine ova; while another class‡ asserted that they were rudimentary structures only, which furnished on their impregnation an amorphous substance, that acquired an ovoid character in the tube; others maintaining again that the ova were really formed within the ovarian cells, but not till these had assumed the type of corpora lutea, a transition which was effected, according to some§, by impregnation, and to others|| by the organic power of the ovary itself, converting what was originally a simple serous membrane into a complicated glandular structure.

The master difficulty with all was the fact, that never in the experiments of any one could vesicles similar to those in the ovaries be detected either in the uterus or in the tubes. Those asserted to be found were admitted by their discoverers to be much smaller; but in nearly a hundred dissections¶ made by Haller, he failed to discover ova at all**, in any animal, before the thirteenth and seventeenth days post coitum, or to observe any substance in the tubes except a tenacious albuminous mucus. Cruikshanks†† afterwards verified De Graaf's observations, having detected ova in the tubes of rabbits before the third, and often in immediately subsequent days; and he declared his belief that they were produced within the ovarian vesicles by conception; but so influential were Haller's views, that we find them reproduced in the same volume which contains Cruikshank's paper, in an essay of Dr. Haighton's, which is as remarkable for the excellence of its facts, as, from the adoption of some other opinions of Haller, it also is for the erroneousness of its conclusions.

And again, writers even so recent as Blumenbach* and Bostock† describe the product of the Graafian vesicle toward conception as being nothing more than an albuminous drop; and as late as 1835, when the discovery of the ovum had been actually made by separate observers, and in different quadrupeds, the influence of previous opinions is very remarkable, in the assertion of Dr. Lee, that it was problematical whether an ovum‡ ever passes along the fallopian tubes into the uterus either before or after conception.

Passing over the observations of Valisneri, Santorini, Sir E. Home§, and M. Plagge¶, resuscitated lately by Negrier||, all of whom, equally with Malpighi, the first of this sect, and also De Graaf, have mistaken the discharged and shrunk cadaver of the Graafian vesicle, (with its two coats surrounded by granular matter,) within the corpus menstruale or luteum, for the true ovum; and omitting, also, more than a notice of the perspicacious generalization which enabled Baron Cuvier**, although ignorant apparently that it had been done before, from the observation of their structure in other classes of animals, to predict the existence of germs, irrespective of connexion with the male, in the ovaries of the mammalia, it was reserved for MM. Prevost†† and Dumas, who failed, however, to appreciate the importance of their discovery, and more particularly to Von Baer‡‡, whose observations were corroborated almost contemporaneously by M. Coste§§, and afterwards by M. Valentin|||, to terminate this point of the inquiry, by the discovery within the unruptured ovarian follicle, and unconnected with conception, of the true ovum, itself not more than from one-tenth to one-twentieth of a line in diameter, and scarcely visible to the naked eye.

The subsequent additions made to our

* Inst. Physiol. p. 424.

† Physiology, vol. iii. p. 31.

‡ Cyclop. of Pract. Med. vol. iii. p. 228.

§ Phil. Trans. vols. cvii. cix.

|| Journ. Comp. de Dict. des Sciences Médicales, tome xv. p. 184.

¶ Recherches sur les Ovaries. Paris, 1840.

** Leçons d'Anat. Comp. 1815.

†† De la Génération dans les Mammif.; Ann. des Sc. Nat. tome iii. p. 135. 1824.

‡‡ De Ovi Mammal. et Hominis Genesi, p. 12.

§§ Recher. sur la Générat. des Mam.

||| Symbolæ ad Ovi Mam. Histor. ante Impregnat.

* Röederer, p. 39. Nigri soli, quoted by Haller, vol. vii. p. 113.

† Vide Haller's Phy. vol. viii. p. 40.

‡ Haller, &c.

§ De Graaf, &c.

|| Malpighi, &c.

¶ Physiol. tome viii. p. 44.

** Idem, p. 58.

†† Phil. Trans. vol. lxxxvii. p. 197.

knowledge by M. Coste* and Wharton Jones†, in the interior of the ovum, of another vesicle of about 1-900 of an inch in diameter, termed from its discoverer in birds the vesicle of Purkinje, or germinal vesicle; and, again, by Mr. Jones and Rudolph Wagner‡, on the germinal vesicle, of a mass of fine granular matter of from 0,0003 to 0,0004 of a line in diameter, the germinal spot; and, more lately, by Dr. Barry, of a structure within the Graafian vesicles, the *retinacula*, which he thinks intended to suspend, and on its maturity to expel the ovum, but which opinions have been since disputed by M. Bischoff§, require, as do also the other deeply interesting researches of Dr. Barry, and also of M. Bischoff, on the development of the Graafian vesicle, to be referred to only in this paper.

[To be continued.]

ON A

MODIFICATION OF THE ORDINARY METHOD OF INSERTING ISSUES.

BY DR. T. G. GEOGHEGAN,

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THE property with which the cuticle is endowed, of resisting to a certain extent the action of potassa fusa when applied as an escharotic, suggests a modification of the ordinary mode of inserting issues which will be found to possess some advantages in practice. Whether the method about to be described be (as I believe) a novel one, it is less important to inquire, than to ascertain if it possess advantages over the ordinary procedure sufficient to commend it to general adoption. If the changes which occur in the skin during the insertion of an issue be carefully observed, it will be seen that the cuticle gives way in *isolated circular spots*, which ultimately coalesce during the continuance of the friction, and that hence the caustic is applied in *succession* to a number of small patches of the *cutis vera*. This latter

circumstance, together with the violent *stimulation* of the surface of the true skin in those points where the caustic has been *but imbibed* by the cuticle, but has, as yet imperfectly *penetrated*, conspires to render the operation more painful than is essential to its efficient performance. Reflecting on the foregoing facts, and on the *modus operandi* of potass in destroying the vitality of the skin, (which appears to consist chiefly, if not exclusively, in the avidity with which it seizes its constituent water), I have been led to adopt the application of kali to the surface of the *true skin denuded of cuticle by the application of a blister*. This method has approved itself of superior convenience and lenity in several cases in which I have resorted to it. The blister should be of *precisely* the same size as the issue to be inserted, and having been applied for the usual time, the cuticle should be gently but *completely* removed, and the superfluous moisture absorbed by a piece of lint, (the surface of the skin *not* being rendered *altogether* dry.) The stick of potass should be then *passed once lightly over the entire surface, no friction whatever being necessary*. The operation is now complete, save the removal of superfluous potass by the *pressure* of a piece of lint applied after the lapse of about half a minute—a procedure which is, however, unnecessary, where due care has been observed in its application.

The caustic at once extends its influence into the substance throughout its entire depth, and the pain, which is of an active burning kind for some moments, rapidly subsides; and in a great measure, disappears in from 15 to 30 minutes, in the generality of cases. By the mode of procedure just described, the more prolonged pain and apprehension attendant on rubbing in the caustic, is avoided; and from the simplicity and facility of the operation, the latter may be administered in the guise of a stimulant application to the blistered surface without inflicting on the sufferer the formalities of an issue, or the horrors of expectation. The destruction of the skin to an unlooked-for and undesirable extent, which is so frequent by the ordinary methods, is entirely avoided by the proposed modification, and it will, if I am not mistaken, be found preferable in practice.

* Op. cit. p. 28.

† Lond. and Edin. Philos. Mag. Sept. 1835.

‡ Müller, Archiv. 1835.

§ *Traité du Développement de l'Homme et des Mammifères*. Paris, 1843.

|| *Researches in Embryology*, first series, Phil. Trans. vol. cxxviii. p. 301; 1838. Second series, Ph. Tr. vol. cxxix. p. 307; 1839. Third series, Ph. Tr. vol. cxxx. p. 529; 1840.

MEDICAL GAZETTE.

FRIDAY, MAY 30, 1845.

WE have received from several correspondents communications on the probable effects of the appointment of a Preliminary Board of Examiners under the new bill, on the medical schools of England; and we last week intimated that there was a very important question in relation to this Board upon which it was desirable to have some information; namely, why its duties should be confined to the examination of those candidates who are seeking for diplomas from the English Colleges and Universities. If we rightly understood the observations of Sir J. Graham, on the introduction of the bill, they clearly implied (p. 113) that no indirect advantages should be given to any College or University in one part of the Empire over those possessed by other Colleges and Universities. This was our inference, and we find the following statement in the speech:—"While we are bound to take every precaution against undue preference of the Scotch Universities, we ought to take care that their just claims shall not be prejudiced." The claims of the Scotch Colleges and Universities, as we understand them, are, that their graduates and members shall be admitted to an equal right to practise in England with the graduates and members of the English Colleges. To this, as we have already stated, there can be no reasonable objection, provided that—1st, an equal standard of qualification and competency be required; 2d, that the examinations be fairly conducted in the presence of impartial assessors—a condition especially necessary where the *teachers* are the *examiners*, and are allowed to determine the fitness of their own pupils—a peculiarity not

found in England; and 3d, that there be no undue facility given to a candidate in obtaining a diploma from one College or University in preference to another, whether it be in England, Scotland, or Ireland.

In our last number we reprinted the 17th clause, which appears to refer only to the establishment of a joint medical and surgical board in England; nor do we find, in the 14th, 23d, and 26th clauses, any provision calculated to remove the impression that the candidates, in order to acquire the same privileges of practice, will have to pass two examinations in England, and only one, or what is equivalent to one, in Scotland or Ireland. On the introduction of the bill, the Home Secretary is represented to have said, that it "provided that any person passing the necessary examination in Ireland or Scotland before the joint board of the College of Physicians and the College of Surgeons of the two countries respectively, should be entitled to be registered as a general practitioner throughout the United Kingdom; and no power was transferred from the Apothecaries' Act of prosecuting parties so registered for practising." We learn, however, that the examination before the joint board in England is merely *initiatory*, the candidate having to undergo a second examination before he is entitled to the privilege of registration as a general practitioner. We think there are decidedly some advantages in candidates undergoing a preliminary examination before a fairly constituted board of examiners; but we cannot see why this principle is to be applied to England, and not to Scotland and Ireland—why, in other words, the 17th clause is not made distinctly applicable to the three countries. If a uniformity of privilege is to be conceded, it should only be upon a uniform standard of qualification and examination.

We have reason to believe that there exists at the present moment a strong feeling that the effect of the 17th clause, as it now stands, will be to clear the English schools of pupils, and send them to Scotland or Ireland; for it is not to be supposed that a candidate will encounter two examinations in London, in order to obtain the same privileges which he may derive from one examination in Edinburgh or Dublin. Under the 19th clause, he may return to England, after having obtained a Scotch or Irish diploma, and require to be enrolled on the payment of two pounds, without further examination, as a fellow of either of the English Colleges. Some who have addressed us on this subject think that the Preliminary Board should be abolished altogether: but their objections are rather directed to its constitution than its utility. In our opinion, a Board of this description is capable of working much good, but similar Boards for initiatory examination, and conferring no privileges, should certainly be established both in Edinburgh and Dublin.

WE elsewhere (p. 214) insert a copy of a petition lately presented to the House of Commons by the Medical Professors of University and King's Colleges, London, in reference to the Physic and Surgery Bill. We have already stated the substance of the petition, in adverting to Professor Quain's pamphlet.* Since then, we have had the third edition of the Bill;—the “*Inceptors*” (*mutato nomine*) converted to “*Licentiates*,” with the condition that, like general practitioners, they must have devoted themselves to medical and surgical studies for a period of five years. Some of the remarks which we have above made will show that the grounds of complaint, although some-

what changed, are not altogether removed. A promise has been given that the University of Edinburgh will unite with the English Universities in fixing a common standard of qualification; but there is one objection here taken by the petitioners which we fear cannot be removed;—namely, that of the *teachers determining the fitness of their own pupils* for the duties of practitioners. This is assuredly a pernicious system, for it is scarcely possible for any individual, in spite of the most honest and upright motives, to avoid something like a bias in favour of those whom he has taught,—not to mention that an examination, so instituted, is likely to lose some of its efficiency by a candidate of ordinary acumen being prepared with the particular views of the examiner on professional subjects. It was observed by one of the speakers in the late debate, that the best security for ensuring a fair examination would be that the *teacher* should in no case be the *examiner*, and that the examining board should be perfectly independent of schools and pupils. The remedy proposed by the Home Secretary is to send down assessors to be present at the examinations. How far this will be satisfactory, remains to be seen.

MANAGEMENT OF THE INSANE.

As the patient should be taught to view the medical superintendent as a superior person, the latter should be particularly cautious never to deceive him. Madmen are generally more hurt at deception than punishment; and whenever they detect the imposition never fail to lose that confidence and respect which they ought to entertain for the person who governs them.—*Haslam*.

STRANGE RECORD.

I REMEMBER having seen the heart of one that was bowelled, as suffering for high treason, that being cast into the fire leaped, at first, at least a foot and half in height, and after by degrees lower and lower, for the space, as I remember, of seven or eight minutes.—*Bacon on Life and Death*.

* No. 1. N. S. p. 27.

Reviews.

Lectures on Subjects connected with Clinical Medicine; comprising Diseases of the Heart. By P. M. LATHAM, M.D. 2 vols. Vol. I. 8vo. pp. 374. London: 1845. Longman and Co.

DR. LATHAM has long been known to the profession as an authority upon the subject of cardiac diseases. Many years ago, he published a series of lectures (in the third volume of this journal), which he now modestly refers to as "certain essays on some diseases of the heart;" we believe that these comprise, for their length and scope, as much condensed and lucid information as any like number of lectures in our language. At the time they were written the study of heart disease was a comparatively new branch of pathology, and, therefore, some of the facts which they contain are now found to be imperfect, or have been superseded by more enlarged views; still, they were greatly in advance of the knowledge of their time; several facts which have since been very sturdily claimed and maintained by their (re)discoverers will be found there; and no writer, even of the present day, will be altogether safe in putting forward, as his own, any set of observations upon heart disease without previously ascertaining whether his remarks have been anticipated in those pages.

The work before us bears the same broad seal of acute and accurate observation, and bids fair, when completed, to have the advantage of containing the whole sum of the author's experience on the subject, and of conveying instructions upon the diagnosis and treatment of heart affections, which will be found perfectly in accordance with the present state of our pathological knowledge. Nearly the whole of the seventeen lectures contained in this volume bear upon the diagnosis and treatment of heart disease; two or three are devoted to remarks upon inflammation and acute rheumatism, but, as they tend to elucidate the author's main views, they are scarcely to be regarded as digressions. This portion of the work treats especially of the sounds of the heart, and of pericarditis and endo-carditis. The lectures are good specimens of clear and philosophical teaching, but it is

rather to be regretted that the observations have been published so completely in the form of lectures; for, being given apparently exactly as they were read to the students, their frequent colloquialisms render them rather tedious, and the necessity which the teacher has felt of carefully preparing the minds of his pupils to receive every fact which he announced, although perfectly admissible in the lecture-room, renders the work somewhat less pleasant reading to the more advanced professional man. Still, these are but slight blemishes; the book is clearly and well written, and the practical value of its facts and reasonings will repay any man, whether student or practitioner, for a thorough perusal of its contents. The following extracts may be taken as fair specimens of the author's mode of teaching:—

"The true meaning of the sound" (of the heart) "is tested by the impulse, and the true meaning of the impulse is tested by the sound. Thus, from a clearer sound we argue only the probability of an attenuated heart; but we argue its certainty from a clearer sound, joined with a weaker impulse. From a stronger impulse we argue only the probability of an hypertrophied heart, but we argue its certainty from a stronger impulse joined with a diminished sound. When impulse and sound increase together, there is probably no hypertrophy, but the heart is only acting more forcibly from pure excess of nervous energy. When impulse and sound decrease together, there is probably no atrophy, but the heart is acting more feebly from pure defect of nervous energy. When the sounds and impulse of the heart are both perceived beyond the præcordial region, they give notice (generally speaking) of dilatation of one or other of the ventricles. If, under these circumstances, sound predominate over impulse, then with dilatation there is either attenuation or somewhat less than a proportionate increase of its muscular substance." (pp. 18, 19.) "When the endocardial murmur is conveyed in an upward direction, even above the basis of the heart, and still along the course of the aorta, and further still, as sometimes happens, along the subclavian and carotid arteries, the aortic orifice is its point of departure, and the valve there situated

is the valve diseased. When it is conveyed in a downward direction, and to the apex of the heart, the auriculo-ventricular orifice is its point of departure, and the valve there situated is the valve diseased. And when it is conveyed both in an upward and downward direction, both in the course of the aorta, and to the apex of the heart, then it has two points of departure, and both the aortic and mitral valves are diseased. Here the murmur, which is *one* to the ear, may be *two* in fact. The two are made one by being both synchronous with the systole of the ventricle. In this case, the murmur from the aortic orifice is direct, and that from the mitral is regurgitating; or the murmurs thus conveyed in different directions, as they are two in fact, may be two to the ear. But then one must be synchronous with the diastole, the other with the systole of the heart. In that case the diastolic murmur comes almost always from the aortic, and the systolic from the mitral orifice; and the systolic and mitral murmur is regurgitating still." (p. 44). The author presently adds, "I doubt whether it would be possible to arrive at a differential diagnosis of diseases of the mitral and tricuspid valves from any ascertainable difference in the direction to which the murmur originating from one or the other is conveyed." (p. 45.) The rarity of extensive disease of the tricuspid orifice (although a few cases of the kind will probably occur in the course of every extended experience) renders it unnecessary to speculate much upon this subject; but we long since learnt from others, and have, in scores of examples, proved the fact ourselves, that in most instances of mitral disease, the fact of this valve being principally affected is proved by the existence of a bruit, which is heard with greater intensity as the stethoscope is placed nearer to the left axilla—a spot at which all other valvular murmurs become indistinct.

The following remark is good:—The popular notion seems to be, that the louder the murmur the greater the disease, and the greater the amount of impediment. The truth, however, is, that the murmur becomes louder as the disease and the impediment increase only *up to a certain point*, and then, that it becomes less and less loud as they go on to increase beyond this

point. Thus the disease and impediment still increasing, may, and sometimes do, reach a point at which the endocardial murmur ceases thenceforth, and altogether, as long as life remains. All practical auscultators will agree with the author with regard to the diminution in intensity which valvular bruits sometimes undergo when dilatation of the ventricles has rendered the power of those cavities extremely weak; and often to their entire cessation during certain periods; but our own observation does not furnish us with any instance in which a bruit, thus occasioned, entirely ceased, and was never re-excited, under any circumstances, during the time the patient survived.

Some interesting remarks, illustrated by one or two cases, are made upon cardiac bruits as existing independently of organic valvular disease under excited states of the circulation (pp. 57 et seq.) One of the cases is that of a pensioner, æt. 61, long affected with paralysis and other symptoms indicating organic affection of the brain, who became bedridden about a fortnight before his death. He lay in a lethargic semi-comatose state; and, during the last week of his existence, the heart's action became inordinate, and both sounds were accompanied by a *bruit de soufflet* audible in the præcordial region; the pulse was small, soft, and regular. Upon examination, no organic lesion was found either in the covering or valves of the heart, but the left ventricle presented a beautiful specimen of concentric hypertrophy, the walls exceeding an inch in thickness, and the cavity scarcely admitting a large nutmeg. There is a good deal of obscurity in this case, as in some others of its class; it is now understood, however, that, in some of the severer forms of organic cerebral disease, the heart's action becomes excited to an extraordinary degree; while the patient remains insensible, and, to outward appearance, in a collapsed state. The tumultuous beat of the heart may or may not be attended with abnormal bruit, but it generally is. After death the organ is found with no other appearances of lesion than perhaps those of slight ecchymoses upon parts of its surface and interior, or of minute recent deposits between the layers of the aortic tissues, which trivial changes

have evidently been occasioned by the violence of the muscular contractions of the ventricles;—no cause for a bruit can be discovered. It is, however, probable that, when the ventricles of a *strong* heart contract oftener than 120 times in a minute, an abnormal sound will generally be produced. In speaking of pericarditis, the author dwells emphatically upon the important fact that, in cases of acute rheumatism, the accession of endocarditis may often be foretold by recognising an unnaturally prolonged or harsh sound of the heart, which frequently precedes the establishment of a distinct bruit.

We shall conclude this notice with a quotation of some very important statistical facts, given by the author, with regard to the frequency of cardiac and pulmonary affections in cases of acute rheumatism:—

“Between the years 1836 and 1840, both inclusive, there occurred under the author’s care, at St. Bartholomew’s Hospital, 136 cases of acute rheumatism.

“Of these 136 patients, 75 were males, and 61 were females: and of the 75 males the heart was affected in 47, and unaffected in 28.

“Of the 47, the seat of the disease was the endocardium alone in 30; the pericardium alone in 3; and both the endocardium and pericardium in 7. And, while the heart was undoubtedly affected in 7 others, the exact seat of its disease was uncertain.

“Of the whole number of males in whom the heart was thus variously affected, 3 died. And in these 3 the pericardium and the endocardium were both inflamed.

“Of the 61 females the heart was affected in 43, and unaffected in 18.

“Of the 43 the seat of disease was the endocardium alone in 33; the pericardium alone in 4; and both endocardium and pericardium in 4; and the exact seat of the cardiac disease was doubtful in 2.

“Of the whole number of females in whom the heart was thus variously affected none died.

“The account of males and females taken together will stand thus:

Cases of acute rheumatism, 136.

Heart exempt in . . . 46

Heart affected in . . . 90

Seat of disease in the heart:—

Endocardium alone in . 63

Pericardium alone in . 7

Endocardium and pericardium in . . . 11

Doubtful in . . . 9

“Deaths 3. In all of which both endocardium and pericardium were affected.

“But, of the 63 patients who suffered from endocarditis, and who became convalescent, auscultation still told that, after the inflammation had ceased, the membrane recovered its complete integrity of structure only in 17, and that it remained permanently injured in 46. Of the 30 males, the endocardial murmur ceased entirely only in 8, while it remained, as long as they continued under observation, in 22. And of the 22 females, it ceased entirely only in 9.

“While, in the cases of acute rheumatism the heart was inflamed in two-thirds of the whole, the lungs were inflamed only in about one in five. (In the 136 cases, acute pulmonary disease occurred in 24.) But, in these cases, the inflammation of the lungs always put on a serious character. The 24 instances in question were made up of 4 of bronchitis, 18 of pneumonia, (in 9 affecting both lungs) and 2 of pleurisy. Out of these 24 cases 4 are marked as fatal.

“Of the 46 cases of acute rheumatism in which the heart was unaffected, the lungs were uninfamed in 5, in the proportion of 1 to 9. But of the 90 cases in which the heart was inflamed the lungs were also inflamed in 19. Here the proportion is more than 1 in 5.

“Of the 63 cases of endocarditis the lungs were inflamed in 7. Here the proportion is as 1 to 9.

“Of the 7 cases of pericarditis the lungs were inflamed in 4. Here the proportion is more than one half.

“Of the 11 cases of endocarditis and pericarditis occurring simultaneously, the lungs were inflamed in 8, or in more than two-thirds.”

All these facts, and the arguments which the author draws from them, are worthy of most careful attention.

We look forward with pleasure to the appearance of the second volume of this work; and,—as it is to be feared that its present scope and intention will not admit of its including many of the valuable facts contained in the author’s earlier lectures to which we have before referred,—few would be unwill-

ing to see the greater part of those discourses (sufficiently altered to come up to the present knowledge of the subject) included in the next volume; for they comprise many leading pathological facts in which this work may otherwise prove rather deficient. We again recommend the volume to all our professional readers, giving them a hint from the author, who says, "if I undertake to instruct you out of my little book of experience, I hold it but honesty to read it straight through."

Glanders and Farcy in the Horse. By WILLIAM PERCIVALL, M.R.C.S. Being the Second and concluding Part of Vol. 3 of the Author's "Hippopathology." 8vo. pp. 358. Lond. 1845.

WE have looked through this work, which appears to be one of great practical research, its author doubtless possessing a sound knowledge of pathology; but we cannot attempt to give any analysis of it, as its subject does not fall within our department, having reference exclusively to the disease as it occurs in the horse. But, as we perceive that Mr. P. has published an Essay on Glanders and Farcy in Man (in the last number of the *Veterinarian*), we shall take an early opportunity of placing before our readers an abstract of any novel facts which that paper may contain.

Hospital Reports.

ST. BARTHOLOMEW'S HOSPITAL.

Cases of Pneumonia,

Treated by Dr. GEORGE BURROWS:

With Clinical Remarks.

PNEUMONIA is a disease of frequent occurrence amongst the labouring classes; it has been very prevalent during this past cold and protracted winter. While our wards have been almost free from cases of continued or typhus fever, the diseases of the respiratory organs have been unusually numerous and fatal. The weekly tables of mortality, published by the Registrar-General, exhibit this fact. In the week ending April 19th, there were only 162 deaths in the metropolis from fever and other contagious diseases, while 318 persons perished from diseases of the lungs: 81 of these latter died

from pneumonia, which number is a full third beyond the weekly average. The series of cases of pneumonia which are actually under my care, or which have recently passed under your observation in the wards, will present to you most of the ordinary symptoms and physical signs of this disease. You will also recognise the operation of many of the usual exciting causes of pneumonia, and I shall be able to direct your attention to many exceptions to the ordinary progress of the disorder, as it is described in books.

CASE I.—*Pneumonia with vascular debility and nervous excitement.*

Joseph Jordan, aged 28, a dark-complexioned delicate-looking man, admitted March 10th, 1845. He is a clerk in an office, of good general health, but not strong. He stated, that eight days ago, after exposure to cold, he was attacked with shivering, headache, severe pain in the right side of his chest, and frequent cough; for this he was bled to ten ounces the day following, and had a blister applied to the right side; these remedies afforded temporary relief, but the pain in his side shortly returned with increased severity; the cough became more distressing, the pain in his head more constant, he passed disturbed and sleepless nights, and became confused in his ideas, having strange fancies and fears. On admission into the hospital, he appeared anxious and restless, his voice was weak and hoarse, and his breathing somewhat hurried; he complained of feeling very ill, of having severe headache, with thirst and loss of appetite. He had frequent cough, and some pain in the right side on deep inspiration and coughing, but this pain was much less severe than it had been. He expectorated a thick, tenacious, and tawny mucus, not very abundant. Skin hot and dry; pulse 96, soft, quite compressible; tongue moist, with a thin whitish fur on the dorsum. Bowels open to-day; a liquid bilious evacuation. Upon auscultation, there was detected absence of pure vesicular murmur over the lower half of the right lung posteriorly, and in place of it were some small crepitations; bronchial breathing, with blowing expiration, and bronchophony, were very audible just above the inferior angle of the right scapula; towards the upper part of the lung there was free respiratory murmur; upon percussion there was marked dullness over the lower half of the lung; percussion caused pain in this situation. Throughout the left lung there was clear exaggerated respiratory murmur, with good resonance upon percussion.

There could be no doubt this man was suffering from pneumonia of the right lung. The softness of the pulse did not invite vas-

cular depletion, but the nature of the complaint, the recentness of the attack, and the age of the patient, might well have justified such treatment. It was the state of this man's nervous system which contraindicated any abstraction of blood. He was therefore ordered,

Hydrarg. Chlor. gr. ij. Antim. Pot.
Tart. gr. $\frac{1}{2}$. Pulv. Opii, gr. $\frac{1}{2}$. ft. Pil.
6tâ quâque horâ sumend. Infus. Lini.
Comp. 6tâ quâque horâ. sum. Milk
diet.

12th.—He was kept awake most of the night by his cough. He is more restless and anxious-looking, his manner is excited, and his face flushed. Tongue moist, thickly coated. Skin hot, inclined to be moist. Pulse 96, soft. Bowels open, motion liquid, bilious. The cough, sputa, and auscultatory signs, remain about the same; the small crepitations are more abundant. He has lost his headache, but complains much of thirst.

Pt. Pilul. et Haustus. Empl. Canthar.
lateri dextro. To have a pound of beef
for beef tea, and two bottles of soda
water.

13th.—Passed another disturbed night, but with some sleep. His manner is peculiar, and he is still rather excited and restless; in other respects he continues the same. The blister removed the pain from the side. The remedies were repeated, omitting the antimony from the pills.

16th.—He has passed better nights since the last note, feels more comfortable, and has returning appetite. Tongue remains furred, moist; gums not affected by mercury. Skin moist; pulse 96, very soft; bowels open twice daily, liquid bilious motions; cough remains troublesome, sputa more copious, less tawny, and less tenacious. Crepitations are larger, and more numerous over the lower half of the right lung; the other auscultatory signs are unaltered.

Repet. Medicamenta. Vini Rubri, ζ iv.
quotidie.

18th.—Sleeps well; thirst relieved. Pulse 112, soft; skin moist; bowels continue relaxed; cough less troublesome.

Intermitt. Pilul. Haustum Aromaticum
statim sumat.

On the 20th his wine was increased to six ounces daily. He had improved during the previous days; his gums were affected by mercury. Bowels more quiet. All excitement of manner had passed away.

During the next ten days he improved in all respects, and the right lung gradually regained its healthy condition. He continued under the same plan of treatment, taking occasional doses of mercury, and

being allowed six ounces of wine daily. On the 1st of April a slough formed in the right tonsil; it did not occasion much uneasiness or constitutional disturbance; his appetite continued good; tongue moist, and clean; pulse 96, soft; bowels regular; no cough. Upon auscultation, there was free respiratory murmur audible throughout the right lung, unaccompanied by any morbid sound; resonance on percussion quite natural. An acid gargle was ordered for his throat, ζ ss. of Essence of Sarsaparilla three times a day; a mutton-chop daily, and to continue his wine.

During the following week he became convalescent, and on the 9th, in consequence of the formation of an abscess beneath the left scapula, he was removed to a surgical ward.

The foregoing is one of a class of cases which are frequently met with in hospital practice, and where all the ordinary rules of treatment are superseded by the peculiar condition of the nervous system of the patient. This man was in a state of nervous excitement at the time of admission, and, had his system then suffered any further shock from the abstraction of blood, it is highly probable that he would have been hurried into a state of confirmed delirium tremens. The stimulating plan of treatment adopted rallied his constitution, and the local disease gradually subsided. We shall find an instructive illustration of the effects of an opposite plan of treatment in a similar case, which occurred in the same ward some months ago.

Case of Pleuro-pneumonia occurring without Cough or Sputa.

Edward Grady, æt. 20, admitted April 18th, 1845. A pale, sickly-looking youth, of temperate habits and moderately good health. Ten days ago he was attacked with severe pain in the right side, which recurred in paroxysms, and was increased on attempting to breathe deeply, on stooping, or making other exertion. He did not suffer much in general health, and had no cough; the pain has continued more or less severe to the time of his admission. There is, at the present time, no hurry in his breathing; his countenance is calm, skin cool; pulse 108, soft; tongue moist, with a whitish fur on the dorsum; bowels rather confined. He has no cough or expectoration. Upon auscultating the right lung posteriorly, there was found total absence of respiratory murmur from about the middle of the scapular region down to the base of the lung, with bronchial breathing, bronchophony, and transmission of the heart's sounds; no crepitations: the same condition was found anteriorly, from the level of the right nipple downwards. There was very marked dullness upon percussion over the lower half of

the lung, but no vocal vibration. In the upper part of the right lung, and throughout the left, there was clear, exaggerated respiratory murmur audible.

Ordered—Haust. Sennæ Comp. statim; Hydr. Chlor. gr. ij.; Ant. Pot. Tart. gr. $\frac{1}{2}$; P. Opii, gr. $\frac{1}{4}$, 6tā quâque horâ.

Nothing worthy of particular observation in this case occurred during the next few weeks. Under the employment of small repeated doses of calomel, with opium and antimony, and the application of two blisters, the man quite lost the pain in his side; he had not the least cough or expectoration throughout. The right lung gradually became more permeable to air, and, upon auscultating him on the 11th of May, a harsh double pleural friction-sound was heard over the whole right lung posteriorly: the occurrence of this sign explained the total absence of vocal vibration noticed in the early course of the disease, and which doubtless depended upon effusion of fluid into the cavity of the pleura, which was now being absorbed, and the two roughened surfaces of the pleura thereby allowed to come into contact. There is still deficiency of respiratory sounds, with complete dullness on percussion towards the lower part of the right lung.

This case presents an example of pneumonia combined with pleurisy, and where, from the commencement, there was neither cough nor sputa. Without the continued assistance of auscultation, it would have been impossible to have guessed at the real state of the right lung and pleura. I have recently attended, with a medical friend, a young lady suffering under extensive pneumonia of the left lung, which went on to consolidation, and which has now almost entirely recovered its permeability, and yet there was neither pain, nor cough, nor sputa. This form of disease is not in itself more dangerous than where all the ordinary local symptoms are more urgent, but it becomes dangerous from the risk of the local disease not being detected before serious injury has been done to the pulmonary tissues.

POWER OF THE MIND DURING SLEEP.

DR. ABERCROMBIE relates, that an eminent lawyer was consulted respecting a case of great difficulty and importance; and after several days of intense attention to the subject, he got up in his sleep, and wrote a long paper. The following morning he told his wife that he had had a most interesting dream, and that he would give anything to recover the train of thought which had then passed through his mind. She directed him to his writing-desk, where he found his opinion clearly and luminously written out.—*Dr. Moore.*

Proceedings of Societies.

STATISTICAL SOCIETY.

ON THE ANNUAL RATE OF MORTALITY AMONG BRITISH TROOPS AT FOREIGN STATIONS.

At a late meeting of the Statistical Society, a paper was presented by Mr. Balfour, on the means of maintaining troops in health. The rate of mortality in the British army is subject to great variation, according to the station, a result which we might anticipate, although perhaps not to the great extent which is proved by the following table*, containing a summary of Mr. Balfour's observations.

Country.	Annual Rate of Mortality per 1000 Men.
New South Wales	14·1
Cape of Good Hope	15·5
Nova Scotia and New Brunswick .	18·
Malta	18·7
Canada, Upper and Lower	20·
Gibraltar	22·1
Ionian Island	28·3
Mauritius	30·5
Bermudas	32·3
St. Helena	35·
Tennaserim Provinces	50·
Madras Presidency	52·
Bombay Presidency	55·
Ceylon	57·2
Bengal Presidency	63·
Windward and Leeward Command	85·
Jamaica	143·
Bahamas	200·
Sierra Leone	483·

Assuming that proper care has been taken in the construction of this table, *i. e.* with respect to the *numbers* at each station from which these results have been drawn, it indicates a fearful difference among the stations. Thus, for every soldier who dies in New South Wales,—the most healthy, no less than *thirty-four* die at Sierra Leone—the most unhealthy station. Nearly one half of all those who proceed to the last mentioned locality, may be considered as cut off within the year. The ages of the men are not of much importance in reference to these conclusions, since careful analyses of the tables of mortality have shown that the rate is increased under puberty and in old age, but that the number of deaths between the ages of twenty and sixty (which would comprise the ages of soldiers) varies but little according to age.

If we now turn to the last Annual Report of the Registrar General for England and Wales, we shall find that the average annual

* [The table is copied from the report published in the *Athenæum*. We have added the remarks.—*Ed. Gaz.*]

mortality of the English population (excluding Scotland and Ireland) in the five years 1838-42, was 2,209 per cent. or nearly *one* in 45. This would be 22·09 in a thousand, the mortality observed among our soldiers on the Gibraltar station. The mortality in 1842 was 2·167, or nearly *one* in 46, which would be equivalent to 21·67 in a thousand. The aggregate mortality in England was nearly the same in 1841 and 1842; but this result was the effect not of the same uniform rates of mortality in each division, but of a sort of mutual compensation by which the dimi-

nution in one part of the kingdom was counterbalanced by the excesses in the other divisions*.

On comparing the rate of mortality in England with the mortality of France, Prussia, Austria, and Russia, it appears to be lower in this country than in either of the four states. The following table is in this respect interesting. It shows for five years in the five principal countries of Europe, the annual deaths and the annual rate of mortality, or the number living to one death:—

	Year.	Population.	Annual Deaths.		Annual Mortality.	
			Years.	Numbers.	Per Cent.	Living to 1 Death.
England . . .	1841	15,927,867	1838—42	346,905	2·207	45
France . . .	1842	34,213,929	1838—42	816,840	2·397	42
Prussia . . .	1843	14,928,501	1838—41	392,349	2·658	38
Austria . . .	1844	21,571,594	1839—42	651,239	2·995	33
Russia . . .	1845	49,525,420	1842	1,856,183	3·590	28

From this table it would appear, that out of a thousand persons, there die annually in England and Wales (the civil population) 22·07; in France, 23·97; in Prussia, 26·58; in Austria, 29·95; and in Russia, 35·9. According to Mr. Balfour, the deaths in the civil population of Britain (England and Wales) average annually 16 in a thousand; but the above table, from the recently published Report of the Registrar General, shows that this is an error. This gentleman represents the annual average mortality in the Foot Guards stationed in England, as amounting to 20 and a fraction in a thousand. These facts suggest some important considerations relative to our foreign stations for soldiers. Out of nineteen stations, thirteen indicate a far greater rate of mortality than is observed in the mother country, and in nine the annual mortality among the troops is nearly double of the average of all Europe.

Inquests.

DEATH FROM HYDROPHOBIA.

A FATAL case of hydrophobia occurred recently at Liverpool. The evidence given at the inquest went to show that the deceased was a healthy, vigorous young man, aged twenty-nine. About ten months previously, according to the statement of the widow, he was engaged with another man in destroying rats. The dog employed on the occasion bit the deceased, who attempted to take a rat from him, on the inside of one of his fingers. The wound was very small, and three days after the accident the part was excised,—the man soon recovered his usual

health, and thought no more of the accident. The companion of the deceased stated that the dog did not appear rabid at the time deceased was bitten; but it looked wild, which he attributed to excitement from killing the rats. The dog was destroyed four days afterwards, and a veterinary surgeon, who examined the body, pronounced it to have died mad. Some joiners' chips were found in its stomach.

At the time above mentioned, the deceased was seen by a medical practitioner, who found him labouring under the following symptoms:—numbness in both hands, loss of strength, difficulty in swallowing, dizziness, and palpitation. He sighed frequently, and appeared dejected. He was bled, and an emetic was given to him. He declined taking liquids, more from dread than from a difficulty of swallowing. This led to a suspicion that it was a case of hydrophobia. He admitted that he had been bitten by a dog about nine months before, and the cicatrix where the part had been excised was plainly seen; but its condition is not stated. Sedative applications were rubbed into the region of the spine, but without effect. The man rapidly sank, and died labouring under the usual symptoms.

The interesting points about this case are, 1. that it is a question whether the poison was not here produced in the animal under the influence of violent excitement; for the deceased would have hardly employed a mad dog to kill rats. 2. The supervention of

* It is a remarkable circumstance that the only countries in Europe in which there is at present no registration of these interesting facts connected with Births and Deaths, are *Scotland, Ireland, Hungary, Spain, Turkey, and Greece.*

the malady, notwithstanding the excision of the part in three days after the accident; for there is reason to believe that this poison is more slowly absorbed than any other animal poison. 3. The long period of incubation (nine or ten months) with perfect health up to the time of the seizure.

A proposition was made that the woorara poison should be used as a remedy, but it was not carried out. It may be a question whether the Indian hemp (*Cannabis Indica*) would not have some beneficial effect as a sedative in these cases.

SUGGESTIONS

FOR

IMPORTANT IMPROVEMENTS IN THE REGISTRATION OF BIRTHS AND DEATHS*.

THE resolutions in relation to registration adopted on the motion of Dr. Laycock, at the final meeting of the statistical section of the British Association for the Advancement of Science, have been brought under the notice of Sir James Graham and the Registrar-General. The resolution affirming the necessity of a verification by competent persons of the facts registered, is one of great importance in every point of view, and we would direct the attention of our readers particularly to it.

It appears, from the statement of competent examiners, who have been enabled to examine local mortuary registries in the preparation of reports on the vital statistics and sanitary condition of town populations, that the present system of mortuary and birth registration in England and Wales is extremely defective for practical application to civil purposes, and the great objects of vital statistics, *i. e.* of ascertaining the rate of mortality in different places, from different causes, and among different classes, with a view to determine the nature, importance, and order of measures for the prevention of disease, or to form trustworthy tables of insurance.

The following are amongst the common, and it is believed general, defects of registration, which seriously diminish the public use and compensation for the expense of the mortuary and birth registries, and obstruct their application to public uses for the important objects in question.

The omission to assign, in the registration of deaths in hospitals and workhouses, and other public establishments, the name of the street or place, and the number or

description of the house which the deceased last inhabited before the attack of disease of which he died, by which omission the real amount of the mortality incident to some of the most important districts cannot be determined with the accuracy which might otherwise be obtained.

The omission to ascertain and record the place of birth, as well as the chief place of previous residence of each person deceased, by which important questions as to the mortality incident to a native as distinguished from that which may be in part due to an immigrant population, may in all places be more accurately determined.

The omission to ascertain and record the precise civil condition of the deceased, *i. e.* whether, if an adult male, he were married or single, and if married, whether he had left a widow and what children, and of what ages and sexes; facts requisite to ascertain the extent of widowhood and orphanage incident to varying conditions of places and occupations, and the amount of pecuniary provision necessary to be made by benefit societies or otherwise.

The omission in the record of the occupation of the deceased to distinguish journeymen from masters or manufacturers, or salesmen from manufacturers, wholesale from retail shopkeepers, the most general and loose designation being commonly given, *e. g.* that of "shoemaker," without distinguishing whether the deceased were an artisan or master manufacturer, or a salesman.

The omission, in registering the deaths of females to distinguish whether they have been employed in any particular occupation for wages or whether they have been employed only in domestic duties, and if so, the particular occupation of the husband or parent, and the like omissions in the registration of children; facts which, in relation to the sanitary condition of large classes of the female and the future adult or present juvenile population, it is of great public importance to have accurately determined.

That in the registrations of births the following omissions also appear to require serious representation:—

The omission to register the facts as to the birth of still-born children: facts which would also serve to an important extent to determine the condition of large classes of the female population, as well as to prevent the secret interments of children as still-born, which ought to have been registered as having been born alive.

The omission in the registries of births to set forth the age of the mother and the succession of birth, and whether the child was the first, second, or third, &c.: facts necessary as well for legal identification in questions of succession, as for vital statistics in

* Abridged from a Report in a Provincial Journal.

the determination of the rate of reproduction, and consequently the mean duration of successive generations, in districts where it may be important to trace the causes by which variations from a general law are produced.

The omission in the registries of births to assign those events to the district of the census enumeration in which they occurred, by which omission the proportion of deaths to the population, and the rate of reproduction in proportion to the deaths in different districts, and the mean age of death in those districts, are not observed sufficiently for accurate deductions; and the preparation of safe local life-tables from official returns applicable to those districts is rendered impracticable, the districts for which returns are now given being commonly extensive, and such as contain populations widely differing in their circumstances.

That still more serious defects in the registration are manifest in the want of proper verification of the facts registered, especially the facts indicating the cause of death, which for the sake of prevention as well as for the alleviation of disease by the improvement of medical science, should be carefully investigated and recorded by competent persons. The main defect of this branch of registration appears to be in the fact of the death itself, and such crude facts as are registered as the cause of death, being frequently only hearsay, received from ignorant nurses and informants almost casual, in respect to whom there is no proper security for having been percipient witnesses of the events purporting to be facts registered; no proper documents as certificates being provided from the last medical attendant, or attestations as to the causes from medical or other competent witnesses prior to or subsequent to the fact of death; and the statement of such an event as a fact not being verified for legal or other purposes by a regular enquiry on the spot, by a properly qualified and responsible public officer competent to discriminate the circumstances which may be required for the interests of survivors or of the public, to be placed on record.

That it appears also to be highly important for the advancement of vital statistics and other objects that a well digested system of mortuary and birth registration should be made general throughout the empire.

Further, that in respect to the publication of the facts registered for the public information, it appears desirable—

That the list of diseases, according to which medical men are expected to give information for entries in the registries, and the mode of making those entries, appear to require revision.

That in all the tables of deaths and births,

the main facts (to render them easily intelligible to the public and useful without unnecessary labour to scientific enquirers) should invariably be reduced to the most simple propositions—*e. g.* the mean age at death of all enumerated; the annual per centage of infantile mortality up to five years, and thence the per centages, if not for quinquennial, for decennial periods; the proportion of deaths to the population, of births to population, of deaths to births, the proportion of marriages to the population, the rate of increase of the population by excess of births, compared with the ascertained rate of increase by the census enumeration, and that the range of these several classes of events in the minor enumeration districts, and amongst the chief classes of society, should be given and promulgated for general and local information."

[We have one or two remarks to make relative to the mode in which some forms of violent death are reported. There is a suspicion in the minds of many persons that the crime of poisoning is on the increase, and that numerous deaths are now entered in the returns as from natural causes, which are really due to poison secretly administered. Some have considered this increase to be no greater than what might be anticipated from the increase of population, and from the improvements in medical chemistry, whereby this crime is now more easily susceptible of detection than it was formerly.]

Poisoning is at present registered under the head of "chemical injuries." The males and females, the respective ages, and the cases of suicide, are distinctly given; but the great defect is, that the individual poisons are not specified. In the Registration Report for 1840, we find entered opium, arsenic, and oxalic acid, but in two-thirds of the cases the nature of the poison is not mentioned; and it is highly probable that many cases of poisoning by opium and arsenic are actually included in this uncertain entry. The number of cases from arsenic (32) is barely more than one-third of the annual number derived from the coroner's return in 1837-8 (92). Under the head of oxalic acid, there are only three cases of poisoning by this substance among the suicides! Unless the nature of the poison can be specified in the large majority of cases, it would be better to avoid enumerating any one substance, since this plan is liable to lead to error. It appears to fix at once the actual number of cases of poisoning by that particular substance, when, in fact, the number stated may be very wide of the truth.

The total number of deaths from poison in 1840, are stated to have been 349, of which number there were 181 males and 168 females. The cases of suicide from poison were 161, being 87 females to 74 males,—the cases of accident or homicide were 188,

being 107 males to 81 females. Of the 75 cases of poisoning by opium, 42 occurred in children under five years of age (!) a lamentable proof of the extensive mortality among children, from the improper administration of this drug. These cases occur among the returned deaths from opium, but under the head of medicines improperly administered, three-fourths of the deaths took place among children under five years of age. It is very probable that these medicines improperly administered, were for the most part opiates.

Cases of Poisoning in 1840.

Males 181	Suicides 161	74 males. 87 females.
Females 168	Other cases 188	107 males. 81 females.
Opium	75 (42 under 5 years.)	
Arsenic	32	
Not specified, including medicines improperly administered	242	
Total of Cases	349	

Whenever the nature of the poison or medicine can be ascertained, it should be stated. As it is, the substance which has caused death is not ascertained in even one third of the cases. There would appear to be no more difficulty in defining the nature of the poison, than in assigning the name of the disease which has caused death.

In the abstract of deaths from poison for 1840, &c. some remarkable cases are mentioned. We here subjoin the principal. By swallowing bug poison, a female, æt. 17. Accidentally by phosphorus, a female, 3. By poison mixed with bread and butter, a male, 13. By taking poison made into a paste for destroying vermin, a male, 8. By prussic acid, accidental, a male, 2. By eating yew berries, a female, 4. By arsenic in mistake for magnesia, a female, 27. By cantharides, by mistake, a male, 46. By oil of bitter almonds, a male, 2. Taking an overdose of calomel, a male, 4, and a female, 4. Incautious use of mercury, a male, 11. An overdose of tartar emetic, a male, 7. Accidentally taking corrosive sublimate, a female, 4. Taking laudanum for tincture of rhubarb, two males, 3 and 1 year. Drinking aquafortis, a male, 2. Salivation by ointment of white precipitate and oil of vitriol ignorantly applied, a female, 7. Poisoned by eating berries of the Dulcamara, a female, 7. From inhaling the fumes of white lead, a female, 20. From the effects of swallowing tobacco, a male, 21. From eating the root of water-hemlock for the purpose of procuring abortion, a female, 30. From large quantities of gin, rum and brandy, six cases, at various ages.—*Ed.*]

Medical Intelligence.

PHYSIC AND SURGERY BILL.

THE following is the substance of a petition presented to the House of Commons by the Professors in the Medical Faculties of University College and King's College, London, with reference to the above Bill: viz.

That a bill is pending in parliament, intitled "A Bill for regulating the Profession of Physic and Surgery."

That the petitioners, while approving of the scope and principle of the said bill, are satisfied that its leading object, that of ensuring uniformity of the qualifications of medical practitioners, in connexion with equality of privileges, will be frustrated by certain clauses of the bill relative to the mode of conferring University degrees, and of granting licenses to practise.

That, whereas in the Universities of England and Ireland a liberal education in classical literature and science is required of candidates for medical degrees, *before* the commencement of their medical studies, the Universities of Scotland use no means to enforce such a preliminary education, but are content with an examination of the candidates in Latin, *conducted by the medical professors*, just before the medical examination for the degree.

That the twenty-second clause of the bill sanctions and adopts the standard of medical education existing in Scotland, and would tend to discourage the more extended education required by the Universities in other parts of the United Kingdom.

That the petitioners urgently call the attention of parliament to the injurious consequences likely to arise from those clauses of the bill which empower Universities to grant a new degree of "Inceptor in the Faculty of Medicine," and which afford to the medical professors in the Universities of Scotland, by a coalition with the licensing boards, undue facilities of admitting their own pupils to the privileges of general practitioners in medicine and surgery.

That the effect of those provisions of the bill would be to extend over the whole profession the pernicious system of *teachers determining the fitness of their own pupils* for the duties of practitioners, and at the same time to inflict a serious wrong on the petitioners and on other medical teachers, not connected with Universities constituted like those in Scotland.

That the proposed enactments above referred to, namely, respecting the low standard of preliminary education, and the permission of teachers to give degrees and licenses to their own pupils, are at variance

with the recommendations of the Royal Commissioners who visited the Universities of Scotland some years ago*, and would, if passed into a law, tend to lower the tone of medical education, and to give undue advantages to certain medical schools.

That while the petitioners offer no objection to those provisions of the bill which give equality of privilege to the licensing boards of different parts of the kingdom, they respectfully submit that it provides no effectual security against the risk of depreciating the medical examinations by undue competition between those bodies.

That, in the judgment of the petitioners, such precautions are the more urgently demanded in consequence of the great disparity which exists, and which must continue to exist, between the medical corporations in England, Ireland and Scotland.

The petitioners therefore pray that the bill may be so amended as to relieve it of the objections set forth in their petition.

REMARKS.—Clauses 14, 15, and 16 of the bill, place the Colleges of Physicians and Surgeons in London, Edinburgh, and Dublin, on an equal footing as examining boards for physicians, surgeons and general practitioners.

The emoluments of these bodies will depend on the number of persons whom they examine; and the candidate for admission to the profession, wherever he may be educated, has it in his power to select the college or board to which he is to apply for his licence to practise.

For example, if educated in London, and desiring to practise as a surgeon in London, he may resort for the licence to Edinburgh, or wherever he thinks the examination is likely to be least stringent, and having passed the examination there, he is at once registered as a practitioner for every part of the British empire. Moreover, returning to London, he must, without further examination, be enrolled a member of the College of Surgeons in London, and enjoy all the privileges of this college, as if he had been admitted into the same body in the first instance. It is obvious that a principle of competition of an injurious kind is thus introduced, for the board reputed to oppose least difficulty in the examinations will have the greatest number of persons to examine.

The only safeguard provided in the bill, against the evil alluded to, is contained in the 27th Clause, which would be inoperative with respect to the principal point, the quality of examinations, except in cases of excessive and open laxity, which will of course be guarded against.

The disparity between the Colleges of Physicians and Surgeons in different parts of the kingdom, will be shewn by comparing those in London and Edinburgh, with reference to the circumstances on which their efficiency for the objects of this bill must mainly depend.

IN LONDON there are ten or eleven hospitals, and several schools of medicine.

The College of Physicians is a large body.

In the College of Surgeons there is a large body of surgeons, exclusive of general practitioners.

IN EDINBURGH there is one school (the University), with some "extra mural" lecturers (sonamed), and all the practitioners, being educated in the same school, are interested in its success.

The College of Physicians is a small body, and the professors (whose proceedings the College is to check) are its most influential members. The College, hitherto holding jurisdiction only over Edinburgh, has admitted its members by ballot without examination.

The bill would confer on this body the privileges of admitting physicians, and sharing in the admission of general practitioners for the united kingdom.

The resident members of the College of Surgeons, with very few exceptions (about four), are general practitioners, and this College is, under the bill, to examine surgeons, and to share in the examination of general practitioners, for the united kingdom.

The population affords an indication of the relation the physicians and surgeons in different localities bear one to the other, and on this account the numbers in a few towns are subjoined in round numbers.

London	1,800,000
Manchester, including Sal- ford and suburbs	296,000
Liverpool, including Toxteth Park	190,000
Birmingham	264,000
Edinburgh, including Leith and Newhaven	166,000

It may be confidently said that in London there are materials for constructing ten or twelve such bodies as the College of Physicians and Surgeons of Edinburgh; and in any town in England, in which the population is equal, colleges might be formed as well entitled to public confidence as those in Edinburgh, to which it is now proposed to give those extensive powers.

It is submitted that these facts shew at least the necessity of introducing into the bill efficient precautions against a misuse of the large privileges now about to be conferred.

* See the Report of the Royal Commission of Inquiry into the State of the Universities of Scotland, 1831.

SOCIETY FOR RELIEF OF WIDOWS AND
ORPHANS OF MEDICAL MEN IN LONDON
AND ITS VICINITY.

THE fifty-seventh anniversary of this society was celebrated on Monday last, by a dinner at the Piazza Coffee House, Covent Garden, which was numerous and most respectably attended. His Royal Highness the Duke of Cambridge, the patron, was to have presided, but was accidentally prevented. His Royal Highness, however, sent a very gracious note of explanation, and a donation of £20. His Grace the Duke of Sutherland had also sent a note expressing his inability to attend, owing to a previous engagement. The chair, therefore, was taken by Sir Charles Mansfield Clarke, Bart., who, on the death of Sir Henry Hallford, had been unanimously elected President. Sir Charles, in giving the toast, "Prosperity to the Society," set forth, with much earnestness, its merits and its claims to the universal support of the profession, and backed his arguments by a donation of £100, having, a short time before, given another donation of nearly equal amount, that had been returned to him on the dissolution of the Medical Benevolent Society; to which also he had been a liberal contributor.

Besides that from the royal patron, there were received liberal donations from their Royal Highnesses the Duchess of Gloucester and the Princess Sophia; also, from Dr. Warburton, 100 guineas; Dr. Chambers, £100; Dr. Turner, £100; Sir B. C. Brodie, £80; Mr. Hewson, 50 guineas; Dr. Merriman, 50 guineas; Mr. Stone, 50 guineas; the Messrs. Eyles, each 25 guineas; Mr. Ware, Mr. Young, and Mr. Hunter (acting treasurer), each £25; Messrs. Stanley, Morrah, Wells, John A. Kingdon, Propert, Cates, and Henry Robinson, each 20 guineas; Dr. A. Sutherland, 15 guineas; Messrs. Travers, Pennington, Bacot, Arnould, Leeke, Hummerton, and Chilver, each 10 guineas; Dr. R. Bright, £10; Mr. Walsh (secretary) £6; Sir James M'Grigor, Mr. Headland, Mr. Tudor, Mr. Davies, Dr. Ashburner, Dr. Spurgin, Mr. Blagden, and Mr. Richard Hunter, each 5 guineas; Col. Cooke and Mr. Burra, each 2 guineas; Mr. Sewell, Rev. C. Clarke, Mr. R. B. Upton, Dr. Este, Mr. Blenkarne (for a friend), and Mr. Toynbee, each a guinea. The collection exceeded the large sum of £1,100.

Great hopes were expressed, in the course of the evening, that this Society may receive still larger contributions from the sums recently paid over to the members of the Medical Benevolent Society, on its dissolution; as those sums having already been devoted to assisting distressed members of

the profession, will no doubt be considered as still sacred to similar objects. The late lamented Mr. Tupper had given to this Society £58, the amount of his contributions so returned to him. Dr. Mann Burrows and Mr. Pope have each given 25 guineas.

At a meeting of the Manchester Medical Reform Committee, held in the Manchester Medical Library, on the 20th May, 1845, it was resolved—"That this Committee is of opinion that the Medical Reform Bill now before the House of Commons, imperatively requires such modifications that—1st. In the initiatory examining board, intended as a common portal for all branches of the profession, the proposed New College of General Practitioners in Medicine, Surgery, and Midwifery, shall be duly represented by having members therein in the same number as the Colleges of Physicians and Surgeons. 2dly. The members of the New College shall be entitled to retain, in the proposed register, their present title of 'Surgeons,' in the same manner as the Fellows of the College of Surgeons; and 3dly, the New College shall, in every respect, stand on the same footing with the other colleges; and further, that if this position is not guaranteed to the general practitioners by their proposed charter of incorporation and by the bill, this Committee pledges itself to oppose their further progress."

Selections from Journals.

SURGERY.

CASE OF SINGULAR INJURY TO THE HEAD.

THE following extraordinary case was read by Dr. O'Callaghan (Surgeon of the 11th Hussars) before the Surgical Society of Ireland, January 18th, 1845.

Abstract of the Case of Lieutenant Fritz, Ceylon Rifle Regiment, &c. 30.

Assistant-Surgeon Finlay proceeded to Fort M'Donald on the 23d of January, 1828, to visit Lieutenant Fritz, who was reported to have received a dangerous wound from the bursting of a fowling-piece.

The accident occurred on the day previous; his servants, who accompanied him, stated that he was knocked down by the blow, but immediately rose with assistance, and walked to a neighbouring cottage, where the wound continued to bleed for several hours, producing a state of faintness approaching to deliquium. In the evening he was conveyed to Fort M'Donald, a distance of four miles, in a palanquin; on his way, and after his arrival, the bleeding continued

at intervals, but less copiously. "Bloody serum now flows from the wound, which is of a circular form, about an inch in diameter, and situated above the nasal process of the frontal bone, the outer plate of which, corresponding with the external wound, is destroyed. The surrounding integuments, particularly over the right eye, much swollen, and painful when touched; complaints of constant pain shooting through the forehead, and restlessness, which effectually prevents sleep; mental faculties unimpaired; pulse 80; pyrexia; bowels confined. On the 28th January he was conveyed to Badulla, where he remained some time, and during this period there had been a continual flow of bloody serum from the right nostril, mixed with pus, and latterly there were several small pieces of bone discharged from the same nostril. The wound continued to heal favourably, and the case was transferred to Colombo on the 29th of March, 1828, the only inconvenience being the loss of smell. The treatment was saline aperients, small doses of calomel and antimony, cold lotion applied to the shaven head, and simple dressings to the wound. It appears that the wound in the forehead soon healed after this, and Lieutenant Fritz was so far restored to health that he resumed his duty, and was subsequently promoted. Towards the end of the year 1828 a metallic body began to protrude through the palate into the mouth, and continued gradually, but steadily, to advance. The only sense affected was that of smell, and this really appeared a beneficent visitation, as the constant sanious discharge from the nostril was so offensive that he was relieved from the duty of attending the mess of his brother officers. In May 1835, the metallic body protruded so far that an attempt was made to file it off, but the pain was unendurable, and the attempt was relinquished. Lieut. Fritz was not a member of the temperance society, and it is feared that the acute attack which terminated his life on the 25th of March, 1836, was caused by his own imprudence on the 17th previous. On examining the head after death, the whole of a large iron breech of a gun, with the screw which attached it to the stock, were found lodged in the forehead. The anterior portion of the right hemisphere of the brain rested upon the flat part of the breech which received the charge, separated from the iron surface only by a false membrane. The weight of this mass of iron, which remained comparatively quiet for so many years in this extraordinary situation, was near three ounces, and its length two and three quarter inches! In the discussion which followed the reading of this case, Sir P. Crampton said it was a remarkable coincidence that, at the Richmond Hospital, a case had occurred exactly similar to that of

Dr. O'Callaghan, in which the breech of a gun had lodged in very nearly the same place; the wound in this case proved fatal, and there appeared to be more evidence of a wound of the brain than in that of Dr. O'C., for the breech had passed through the orbital plate of the frontal bone, and the man only survived the accident forty-eight hours; at the same time it by no means followed that the breech did not penetrate the brain in Dr. O'Callaghan's case, for no two of these accidents are observed to run a similar course. In a case recorded by Mr. Rogers, the breech of a gun penetrated the cranium about the centre of the os frontis, and lodged and continued to remain in the substance of the brain, yet no one had any idea that any extraneous substance existed there until after six weeks, when a black, hard body, appeared in the wound, which, when extracted, proved to be the breech of a gun, and which weighed several ounces. The man recovered perfectly without any loss of his faculties. The details of the case are to be found in one of the earliest volumes of the Transactions of the Medico-Chirurgical Society.—*Dublin Medical Press*, Feb. 5th.

URETROPLASTIE.

IN a case where the integuments of the lower surface of the penis and canal of the urethra were destroyed to the extent of three inches, together with the entire left side of the scrotum, and a limited portion of the perineum and the groin, by sloughing consequent upon extravasation of urine, M. Jobert (de Lamballe), having first remedied the extravasation by suitable incisions, and allowed sufficient time to elapse for restoration of the general health, and for the tissues to contract, proceeded to repair the urethra in the following manner:—He divided the operation into two periods: he first refreshed the edges of the loss of substance of the perineum and in the groin, and immediately united them by several points of interrupted suture. The re-union of these parts being obtained, he allowed it to become solidated before he attempted to repair the breach in the urethra. For this latter purpose he refreshed the entire circumference of the opening in the urethra, and then cut the flap from the right side of the scrotum, dissecting carefully, so as to avoid implicating the testicle; this flap being insufficient, he carried the incision to the dorsum of the penis, and made a flap which was continuous with the first; having thus obtained a sufficient quantity of skin to cover the breach in the urethra, he united it to its borders by ten points of suture, supporting each point of suture by a piece of agaric placed under it, in order to delay its cutting out, and so allow sufficient time for union by the first intention to be effected. A small gum-elastic catheter was

left in the urethra until the cure was completed. The patient now passes water in a stream much fuller than he could previous to his admission to hospital. The contraction of the cicatrix has drawn the testicle towards the ring, and the penis is slightly curved.—*Academy of Medicine*, Nov. 26; and *Dublin Med. Press*, Jan. 29, 1845.

TREATMENT OF CHRONIC MAMMARY ABSCESS BY THE BREAST-PUMP AND SYRINGE.

DR. ALEXANDER WOOD proposes to treat that form of mammary abscess which gives rise to deep-seated sinuses, and sometimes continues for many months with little variation in its appearance, in the following manner. "As soon as the indistinct fluctuation, or rather the boggy feeling, by which the formation of matter in these abscesses can be detected, is distinctly ascertained, let a small bistoury or abscess lancet (the common lancet will sometimes not penetrate deep enough), be carried down until the matter begins to escape; after all that can be squeezed out by pressure is removed, let a breast-pump be applied over the orifice, and the rest of the matter drawn out. The sinus is then to be injected with some astringent solution by means of a small syringe." "A pledget of lint dipped in the lotion is then to be applied outside, and covered with oiled silk; over this a compress may be placed, and firm pressure maintained on it by means of adhesive plaster. In some cases the walls of the abscess will unite at once, and all that remains to be done is to trust to time for the removal of the surrounding induration, or to attempt to discuss it by frictions, &c. &c. Dr. Wood adduces three cases of chronic abscess in which he adopted this mode of treatment with complete and speedy success. We can imagine that this plan would be found serviceable in various forms of abscess. It is always observed that, where the pus lies deep, and is but imperfectly evacuated, the disease proves intractable; the great indication for cure appears to be, that all irritating fluid should be removed from the depths of the cavities, and that the internal vascular surfaces should be brought closely into apposition with each other.—*Northern Journal of Medicine*.

REMOVAL OF A COIN FROM THE LARYNX BY INVERSION OF THE BODY. BY DR. JAMES DUNCAN.

A MAN, while amusing himself tossing up a shilling and catching it in his mouth, felt it pass into the larynx. The accident was followed by a violent fit of coughing, attended with great difficulty of breathing. The difficulty of breathing continued for some time, and then gradually passed off to such an extent, that he was able to walk some distance

to procure medical advice. He was seen by Dr. Paterson in about half an hour afterwards. The dyspnoea was then inconsiderable; but occasionally, on change of position, or on making a forcible inspiration, a violent paroxysm supervened. When Dr. Duncan saw him, about an hour after the occurrence of the accident, the respiration was perfectly easy, but the voice was considerably affected, being reduced almost to a whisper. He stated, however, that when he inspired forcibly he felt considerable inconvenience, and that there was then the sensation of the presence of a valvular body in the trachea, impeding the passage of the air. The air passages were examined carefully, but not the slightest unusual sound was heard. When the larynx was compressed externally, the patient stated that he was perfectly satisfied that the coin was lodged there; and the part which he pointed out corresponded with the cricoid cartilage. Before having recourse to an operation, it was determined to attempt to dislodge the foreign substance by inversion of the body. The man was placed with his shoulders against the raised end of a pretty high sofa, and then, being seized by three of the most powerful of those present by the loins and thighs, he was rapidly inverted, so as to bring the head into the dependent position, and, after a shake or two, the larynx at the same time being moved rapidly from side to side, the shilling passed into the mouth, and fell upon the floor. Not the slightest cough nor dyspnoea was produced, and the patient immediately started up delighted with the result. He had not the slightest subsequent bad symptom.—*Abridged from the Northern Journal of Medicine*.

PHARMACY.

THE SUBNITRATE OF BISMUTH.

M. DULK has proved, contrary to the statements of many chemists, that the white precipitate of nitrate of bismuth, so much used in medicine, is constant in its chemical composition whether it be prepared by precipitation in water of the neutral crystallized, or of the acid nitrate. M. Buchner has found that in both cases the white basic salt is represented by $\text{BiO}, \text{NO}^5 + 2\text{BiO}, \text{HO}$.—*Annuaire de Chimie*, 1845.

ROYAL COLLEGE OF SURGEONS.

Gentlemen admitted Members.

FRIDAY, May 23d.—R. Lumb.—W. C. Hood.—J. C. Martin.—B. S. Hopewell.—M. A. Savage.—J. A. Walcott.—T. B. Eames.—H. I. Fotherby.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

THURSDAY, May 22d.—John Thos. Newberry, 1, Crunscoff Street, Grange Road.—Rowland Flockton, Snettisham, Norfolk.—Edm. Wadams, Stratford on Avon.—George Royde, Brighton.—Josiah Roope, Norwich.

Lectures.

CONTRIBUTIONS TO

MICROSCOPICAL MORBID
ANATOMY,*Selected and Translated from the German
Work of*DR. JULIUS VOGEL, of Göttingen,
Entitled "Erläuterungstafeln zur pathologischen
Histologie."

BY W. S. KIRKES, M.R.C.S.L. &c.

*Cases of Cerebral Apoplexy, with Micro-
scopic Examination of the Texture of the
Brain.*

THE following two cases are offered by Vogel as illustrative of two forms of cerebral apoplexy, whose characters and differences cannot be discovered without the microscope. The first case illustrates the form of what he calls "capillary apoplexy," in which the capillary vessels of the part become greatly distended with blood; and, in consequence of this distension, the rupture of some of them, and extravasation of blood takes place. The second is a case of what he terms "inflammatory apoplexy," in which, after death, very evident signs of preceding inflammation were found: the extravasation of blood in this case took place from vessels of much larger size than capillaries.

CASE I.—A woman, aged 40, who had been married for several years, and had borne one child, was subject to frequent discharges of blood from the uterus, both before and subsequent to parturition. About twelve months before her death she had an apoplectic attack, from which period her intellectual faculties became impaired, and she was subject to occasional recurrences of mental aberration. After the lapse of about a year from the first apoplectic seizure, she had another attack of a similar nature; and four weeks after this she had a third, which was followed by death in about twelve hours. This account comprises all that could be learnt as to the previous history of the case.

Upon examining the body after death, a bloody serous effusion was found beneath the membranes of the brain, covering the upper surface of the left cerebral hemisphere. The corpus striatum of the left side was the seat of "capillary apoplexy;" it appeared deeply reddened throughout, resembling, on a superficial view, a large coagulum of blood. Upon slicing its substance there were observed numerous bloody points, densely set

on a white ground. The substance of the brain immediately adjoining the corpus striatum was very evidently softened, and of a yellowish colour, constituting the "yellow softening."

Towards the centre of the corpus striatum its substance was of a deep red colour, presenting hardly a trace of white substance. Viewed under the microscope (fig. 17), it appeared intensely congested, its capillary vessels being loaded with blood. Within the meshes formed by the net-work of the capillaries, were numerous small coagula of blood; these coagula, with the capillary vessels, completely made up the whole substance of the central part of the corpus striatum; no granule-cells were detected, not even when the blood had been washed away as much as possible. This central part was in all probability the seat of the last apoplectic attack, which had occurred a few hours before death. Towards the circumference of the corpus striatum there were observed with the naked eye numerous red points, and fine red striae, arranged in a reticular manner, within a white intermediate substance. Viewed under the microscope the blood-vessels of this part were very distinctly seen; they appeared intensely injected, whilst between them were observed some portions of extravasated blood, smaller and less numerous than those towards the centre of the corpus striatum. This blood was partly coagulated, and partly fluid still. Moreover, there were observed very many granule cells, which were rendered especially apparent when the blood had been in great measure washed off (fig. 18.) The portion of cerebral substance immediately surrounding the corpus striatum appeared to the naked eye much less reddened than the corpus striatum itself; still it was of a darker colour than natural. Under the microscope its vessels were seen turgid with blood; there was no blood extravasated into the parenchyma, but there were numerous granule cells instead. With acetic acid these granule cells underwent no change. In all these parts, both in the corpus striatum itself, and in the cerebral substance immediately surrounding it, the primitive nerve fibres of the brain were very indistinct.

With regard to the process of yellow softening undergone by the surrounding cerebral substance, the appearance presented to the naked eye was that of a yellowish, soft, almost pulpy, mass, without any trace of redness. Under the microscope only a few scattered capillary vessels were seen in this substance, and these vessels did not differ in appearance from the ones observed in healthy cerebral substance. The cerebral substance itself presented a tolerably healthy and natural appearance; it exhibited the

usual varicose* fibres, but it also contained numerous granule cells.

Fig. 17.



Fig. 17* illustrates the appearance presented by a portion of the cerebral substance towards the centre of the corpus striatum, which was the seat of recent capillary apoplexy. There are shewn the capillary vessels turgid with blood, together with small clots of blood, which were extravasated from the ruptured capillaries. At this part of the corpus striatum no granule cells were seen, consequently no inflammatory action seems to have been going on there, the appearances noticed being simply the result of great turgescence of the capillary vessels of the part, the consequence of which turgescence was the rupture of some of the capillaries, and the extravasation of blood.

Fig. 18 illustrates the appearance presented by a portion of the cerebral substance towards the circumference of the corpus striatum. Besides the tolerably distended capillaries, with the small portions of blood extravasated here and there, many granule cells were also observed.

Fig. 18.



CASE II.—N., an intendant in an artillery regiment, 65 years of age, of middle stature, died in November, 1841, having entered the army in the year 1795, and served through the whole of the Bavarian campaign until the year 1816. When eight years of age he had a kick from a horse, which struck him on the forehead, just above his left eye, a very distinct cicatrix of which, to the extent of an inch and a half, together

with a prominence of the surface, permanently remained. With the exception of this accident, he had through life enjoyed perfect health up to the end of the year 1840, at which time he first began to complain of pains in the head and loss of appetite. These pains extended through from the right to the left side of his head, and were so violent as to prevent his sleeping. He could not in any way account for their first occurrence, except from the fact of his having been obliged to work in the snow, carrying wood, during some intensely cold weather. These pains assumed a kind

[* It is perhaps needless to observe, that the varicose appearance mentioned by Vogel here and in subsequent places, as the usual condition of the primitive nerve fibre, is merely the form which these fibres assume shortly after death; they lose their natural cylindrical appearance, and become varicose or beaded.—Tr.]

* This and the following figure are magnified 220 diameters.

of rheumatic-gastric character, and were treated accordingly. An emetic and purgatives considerably mitigated their severity; and by the application of some leeches, towards the end of January, 1841, they entirely disappeared; nevertheless great debility and weakness remained, especially perceived on walking, and his memory became defective. On the 28th of August the man was again attacked with severe pains in his head; they were now most intense over the forehead, and occurred in daily paroxysms, which usually subsided towards evening. During the first onset of these paroxysms he felt considerable oppression at the chest, with palpitation, and the heart's action was tumultuous and irregular. The treatment consisted in the employment of venesection, the application of leeches, and the clearing out of the bowels by active purgatives. By these means the oppression at the chest disappeared, but the pains in the head resisted further treatment; as these latter, however, at length began to disappear, their place was taken by a settled despondency, and the man became constantly distressed with anxious fears and strange imaginations. On the 13th of October, his friends perceived for the first time that he could not use the right arm and foot so readily as those of the left side; they were observed to drop, they felt cold, and their surface was of a somewhat livid colour, but sensation remained as perfect as in those of the opposite side. His power of speech was impaired, but the sense of taste, of smell, and the other senses, continued as perfect as ever. His bowels were regular; his appetite and sleep good. On the 24th a diarrhoea came on, so that his bowels were moved three times daily: after this he fell into a state of stupor, which progressively increased, and he died on the 3d of November.

Upon examining the body, the skull-cap was observed to be very thin, and in many places was firmly adherent to the dura mater. The dura mater itself was here and there much thickened. In the anterior of the falx cerebri, between the folds of the membrane composing it, was found a thin plate of bony substance, about the size of a penny-piece. The arachnoid and pia mater were much thickened, and adhered intimately to each other, so that they could be readily peeled off together from the surface of the brain; their vessels were turgid with blood. The substance of the brain itself appeared quite healthy, and of a pale colour, with the exception of the posterior lobe of the left cerebral hemisphere, where was found the seat of the apoplectic attack, which was about equal in size to a small apple. At this part the dura mater, and the other membranes of the brain beneath it, were firmly adherent to the cerebral sub-

stance. There was found a cataract in the left eye. The other organs of the body were healthy, with the exception of the lungs, in the apices of both of which were found a few small tubercular masses in the progress of cure.

The brain was more carefully examined. In the posterior lobe of the left cerebral hemisphere, a little behind and above the cornu Ammonis (hippocampus major), was found a cavity, about the size of a walnut; it was filled with a clear, limpid, somewhat greenish-coloured fluid, which, when carefully received into a glass vessel, was found to weigh about two drachms. After standing for a short time this fluid coagulated completely, into a colourless gelatinous-looking mass, from which a clear colourless serum gradually separated itself. On examining this serum beneath the microscope, no corpuscular or granular particles (with the exception of a few scattered blood corpuscles) could be found in it. On the addition of nitric acid to it, a very copious white precipitate of albumen was formed. The clot consisted of an amorphous colourless mass of coagulated fibrine. From this it would appear, therefore, that the fluid which was contained within the cavity consisted of liquor sanguinis, or blood plasma. The cavity in which the fluid was contained was lined by a membranous layer, about a line in thickness, of a yellowish-white colour, and of a somewhat lardaceous consistence. This layer was in some places of an intense red colour, and presented a dense network of vessels, visible to the naked eye. When examined under the microscope, this membrane was found to consist of an amorphous fibrinous substance, inclosing very many granule cells, and numerous particles of fat. By acetic acid it was rendered perfectly transparent, the granules and granule cells remaining visible. Here and there it exhibited some slender fibres or threads, similar to those of which fibro-cellular tissue is composed; these threads entirely disappeared on the addition of acetic acid. In other places this membranous layer presented a dense vascular network of a bright red colour, within the meshes of which were very many granule cells, and heaps of granules. With the exception of these granular cells, there were no traces of organization to be seen in the substance contained within the meshes of this network. This membrane lined the whole interior of the cavity, forming for it a smooth internal surface. Externally it was intimately connected with the surrounding healthy substance of the brain, into the tissue of which it gradually passed; so that on examining the part where this membrane became lost within the cerebral substance, there the normal primitive fibres of the brain could be distinctly

seen, becoming more abundant and distinct as they were traced towards the substance of the brain, where, at length, these fibres entirely prevailed. Not a trace of the fibres could be found within the membrane itself, except just at the part where it became connected with the cerebral substance. The substance of which this membrane was composed was evidently fibrinous exudation material; it was in some places two lines in thickness, tolerably firm, and contained throughout very many granules and granule cells. The cerebral substance immediately surrounding the cavity or cyst was of a deep cherry red colour, softened, and loaded with blood; it was the seat or focus (herd) of the apoplectic attack. Taken together with the cyst, it formed a mass about equal in size to a small apple. Upon making a microscopical examination of the cerebral substance surrounding the cyst, it was found to possess throughout an unusually large quantity of blood, which was mostly contained within vessels, but at one part (fig. 19, *c*) was poured out or extravasated into the parenchyma of the brain. Those vessels in which the other portion of the blood was contained were not capillary vessels; they had a much larger calibre than capillaries, being about 1-100th, 1-80th, 1-50th, or more, of a line in diameter (fig. 19, *a*, *b*). The extravasated portion of blood was for the most part still fluid, and of a deep red

colour. The individual blood corpuscles were clearly discernible. Besides blood there were observed very many granule cells, and heaps of individual granules (fig. 19, *d*), also here and there some fibrinous exudation material. At one spot the dura mater (with the other cerebral membranes lying beneath it) was so firmly adherent to a portion of the cerebral substance, which was infiltrated with blood, that it could not be separated from it without also tearing up the substance of the brain itself. The material by which the cerebral membranes were thus so firmly connected with the substance of the brain had a yellowish-white lardaceous aspect. Under the microscope it appeared a granular amorphous mass, but it contained within it an immense number of caudate nucleated cells, which seemed to indicate the commencing formation of cellular tissue; this substance presented already very distinct and fully formed blood vessels. This affords a proof that these blood vessels were matured in their development before the formation of the cellular tissue was perfected. The greatly thickened and intensely reddened arachnoid and pia mater, when examined beneath the microscope, exhibited very many vessels loaded with blood. The walls of these vessels remained as distinctly visible after the blood corpuscles had been washed away by water as they were before.

Fig. 19.



Fig. 19 illustrates the appearance presented by the seat of apoplexy. The apoplectic effusion was not the result of a rupture of capillary vessels, but of vessels of much larger size than capillaries, *a*, *b*, *b*; *c* represents the extravasated blood; *d*, heaps of granules, together with granule cells, in the neighbourhood of the extravasation; they were in all probability the products of inflammation.

Microscopic examination of the texture of a brain in which abscesses were seated.

A man, who had been subject to epileptic attacks in his youth, was afflicted with severe pains in his head, when about twenty-six years of age: these pains never afterwards left him to the time of his death. About two years after their first occurrence, amaurosis of the right eye, together with a purulent discharge from the right nostril,

supervened; these were speedily followed by convulsions and paralysis of the extremities, his sufferings being finally terminated by death in his twenty-ninth year. Upon examining the body, there was found an abundant deposit of purulent matter between the dura mater and the surface of the brain; it was spread over the entire anterior half of the right cerebral hemisphere; the whole anterior part of the hemisphere was softened; so also were the right thalamus opticus and corpus striatum. The right optic nerve was compressed and flattened like a ribbon. The dura mater appeared thickened: microscopically examined, it presented between its healthy fibres some amorphous exudation material, which contained an immense number of very small granules of a brownish colour. Between the dura mater and the substance of the brain some true abscesses had formed themselves; they contained a yellowish green purulent-looking fluid. This fluid was not actual pus; it contained no pus globules; but, instead of them, it presented a very large quantity of small brownish granules, exactly similar to those which were deposited within the dura mater. Many such abscesses were also found in the superficial layers of the substance of the brain itself; the bottom (grund) of each of these abscesses was of a firm brawny consistence, the result of thickening and induration of the cerebral substance. When a portion of the firm brawny substance bounding these abscesses was examined under the microscope, it appeared to consist of a granular amorphous material (fibrinous exudation) containing numerous granules, both scattered and aggregated in heaps.

The whole of the anterior half of the right hemisphere, as well as the right thalamus opticus and corpus striatum, were very soft, and of a yellowish white colour, constituting the yellow softening. Upon examining portions of this softened substance under the microscope, there were observed very many granule cells, and heaps of granules, scattered between the normal primitive fibres of the brain: the blood-vessels appeared comparatively empty.

Microscopic examination of a portion of softened spinal cord.

An old woman fell backwards down stairs; she only lived one day after the accident, and died with symptoms of injury to the spinal cord. Upon examining the body, the dura mater of the cord was found quite healthy, except towards its lowest part, where its veins were greatly distended with blood, and a quantity of watery fluid was found deposited in it. The spinal cord itself towards the upper part was quite healthy, and tolerably firm; about the first dorsal vertebra, however, it was observed

to become softer, and this change in consistence gradually increased towards the seventh dorsal vertebra, when the cord was completely softened and pulpy. Below this point it gradually resumed its natural consistence, and towards the cauda equina, it became quite healthy. A microscopic examination of the cord gave the following results: in the cervical portion, it was made up of healthy, very broad, primitive nerve-fibres: they had a varicose appearance, and were observed crossing each other in various directions. These individual fibres were uninjured, and quite perfect; they could be traced for a considerable distance. In those places, on the other hand, where the softening especially prevailed, the primitive fibres were broken up, and there were only observed the disjointed varicose remains of them, yet these portions presented the double contour very distinctly. No granule cells were present.

LUMLEIAN LECTURES,

Delivered at the Royal College of Physicians.

By SIR GEORGE LEFEVRE, M.D. &c.

On the Origin of Scarlatina.

IN our previous lectures, we were occupied in taking a rapid view of the ravages which scarlatina made upon the animal structure, and traced its effects on the mucous, serous, and cellular tissues. In investigating its mode of operation, and the peculiar effects which it produced, we had ample reason to consider it as a disease of a specific nature, generated by the operation of a morbid animal poison, which had itself been produced within the historical period of time.

If we look into the chemical laboratory, we shall find that simple mixture of bodies does not form a chemical permanent combination. The oil and water separate when agitation ceases.

If we take the combinations of oxygen and nitrogen, we see that mechanical mixture works no change upon them, we can easily overcome their union, but if they are made to unite in certain definite proportions, we have such results and such changes, as we could never have previously anticipated.

We have a bland mixture, an intoxicating potion, and a deadly poison, resulting from the combination of two simple elementary bodies.

Why was such a discovery so long withheld? From the simple reason, that the chemist's hand had not before exercised its prerogative of bringing these cases together in the only proportions in which such phenomena could be achieved.

This is only one proof of development in inorganic matter.

Let us for the sake of analogy endeavour to apply the same principle to the effects of animal poisons on the human œconomy; and first we must premise, that we know nothing of matter deprived of form.

We must await the accomplishment of this formative process before we can predict anything of the offspring; nay, we may go a step farther, and say that a morbid poison is in reality a *caput mortuum* before its combination with an animal product.

The peculiar power of the poison of plague, small-pox, or even that generated in Liebig's sausages, is due to an active condition recognizable by our senses only through the phenomena it produces. We may take a wider view of matters, and investigate the nature of the latency of some poisons.

Upon what rational principle can it be explained, that the venom of a rabid animal lies dormant for months without producing any specific effect, and then of a sudden manifests itself so fearfully? It must surely be allowed, that during this process it has been awaiting its elective element till it could combine chemically; it was itself impuissant till it possessed an adjective constituting shape; it was not cognizable in its substantive form.

I do not believe that it was circulating in the blood during this period; but be it so, its state was that of mechanical mixture. It was as the oil and water. Does not the atmosphere afford as fair analogical evidence that matters do not combine upon mere presentation to each other?

Our globe has been floating nearly six thousand years in a mixture of oxygen and nitrogen, and yet these two elements, so combinable, and in so many proportions, have never in this condition formed a chemical compound.

Seeing that the process is not merely a mechanical one which presides over chemical combination, we may perhaps apply the same law to the generation of a new disease, which can never take place but under these precise circumstances.

That it required ages for its accomplishment neither militates in its favour or otherwise, as regards the natural course of events. We talk of things still in the womb of time, but she is slow, as she is prolific; nor are we come to the *ultima thule* of her digesting powers.

As bearing upon the disease scarlatina, it may be implied that, taking it in its simplest form, it did not appear sooner because there were no elements of combination such as could produce it.

In one way, and in one way only, could there be such a juxtaposition of matters as would form this disease, if we reason upon chemical principles.

This constitutes its specific nature, even in its simplest form.

Now, if this be true, it is applicable to all its multiples, and the effects of each may be as different on the animal economy as are the compounds of oxygen and nitrogen.

Upon the same grounds we may allow of two morbid poisons forming a ternary compound with an animal structure.

A combination of a paludal and animal miasm impinging upon a mucous membrane may form a union which shall act more violently upon the œconomy than either shall do separately.

All the muriatic acid, all the nitric acid of a chemist's shop, shall not, when separately employed, dissolve one grain of gold; a drop of nitro-muriatic acid shall conquer the difficulty.

The mixture of the venereal and mercurial poisons solves this problem; we have a new product, a *tertium quid* resulting of no very controllable nature.

Dr. Christison has touched upon this subject in his late valuable work on poisons, and under the head of compound poisoning, he states a case of a mixture of opium and belladonna, in which the former seems to have prevented the delirium usually induced by the latter, whilst, on the other hand, the belladonna prevented the usual effect of opium on the pupils, and actually produced the opposite action.—p. 973.

Diseased action may assume a thousand shapes, and be of daily creation; but a disease of a specific nature, true to itself, engendering its like, can only have arisen from some peculiar arrangement of particles, which may have acquired ages for their juxtaposition, or which accident might have called forth thousands of years ago.

We stumble at the block of time; we recoil at the idea of chance, and yet we may appreciate their value in the following history.

"The production of shell," says the author of the *Vestiges of Creation*, "is an operation which can be precisely imitated artificially." Such an incrustation takes place on both the outside and inside of the wheel in a bleaching establishment in which cotton cloth is rinsed free of the lime employed in its purification. From the dressing employed by the weaver, the cloth obtains the animal matter gelatine; this and the lime form the constituents of the incrustation exactly as in the natural shell.

In the wheel employed at Catrine, in Ayrshire, where the phenomenon was first observed by the eye of science, it had required ten years to produce a coating a tenth of an inch in thickness. This incrustation has all the characters of shell, displaying a highly polished surface beautifully iridescent, and when broken a foliated texture.

Nature goes to work at times but slowly,

and if art attempt to imitate, she must follow her steps; but although time and durability are associated in most operations, still nature works not for eternity. There is a period, and a definite period too, to her operations. Species of animals of gigantic dimensions are extinct, and so are diseases. The leprosy of Naaman has vanished. It has been asserted, that a case is here and there to be found. It no longer flourishes. It is the wounded bird which remains behind when the flock has migrated. The vegetable kingdom presents us with the same history. Species are dying away; a blight and blast come upon them, and they gradually decline; but the creative power is not exhausted; it may operate to-day as yesterday, or as six thousand years ago. It may, as it has done, create other worlds out of the wrecks of former ones; it may create new diseases from the remains of those which are fading away. We have instances of their decay.

It may not be too much to suppose, that the human œconomy itself undergoes during the lapse of years in its chemical composition, a slow, constant, and progressive transformation, which unfits it for certain toxic agents, and prepares it for others, in such fashion that certain contagious diseases may in the course of time become strangely modified as to the gravity of their symptoms, and disappear completely, whilst other poisons, previously innocuous, may become virulent in the extreme.

We have proof positive that, during the geological era, the whole climacteric circumstances and conditions of every spot on the surface of the globe have undergone successive and considerable changes. These have rendered the surface of the earth uninhabitable for such species as previously inhabited them, and that those species have consequently disappeared, to be replaced by new ones.

In the present day we have proofs that similar changes are going on, and that species have disappeared from different localities during historical times.

We have proof positive that the human organization is deeply modified by climate, food, customs, and education. The skin of the European and the African are identical, as far as anatomical constitution is concerned, but the rete mucosum secretes black matter in the one, which is not secreted by the white membrane of the other. There is said to be a species of pediculus peculiar to the African, which will not propagate in Europeans.

In applying this to contagious diseases, we may instance the affection of glanders, which has been long known as a specific disease in the mucous membrane of the horse's nostrils. This was never suspected of being contagious from horse to man, till

within the last few years, and it is now the dread of grooms, from its known contagious nature. If we consider the prevalence of this disease in cavalry regiments, the frequent communication and colubation of soldiers with their horses in campaigns, and the identity of symptoms in the beast and the man, how could it have happened that it was never before recognised as contagious, if it really had been so?

There is a case on record of a man who died of it from washing his hands in a bucket out of which a glandered horse had been drinking. If the disease has always been contagious to such a degree, how could it have escaped being looked upon as such? It seems evident that the virus was not inoculable in times past, and has become so now. Still the virus has not changed; since in horses the disease is not modified, we must consequently admit that the human constitution has become fitted for the introduction of a new poison, or rather has become susceptible of being poisoned by a virus, which previously, and in times past, was innocuous.

Now, it would require but very little help from supposition, by transposing this infectious matter from the nostrils to the vulva, to propagate such a disease as broke out at the siege of Naples. Such a circumstance is even now within the range of possibility. On the other hand, as we have mentioned, the most ancient, universal, and contagious disease has totally disappeared—the lepra. So that we might from these two circumstances almost infer, that the human blood undergoes in the lapse of ages a chemical change of such a nature, that substances, which once acted upon us as virulent poisons, cease to have any action, and that, *à contra*, substances which were previously innocuous act as virulent poisons.

This view of things is justifiable upon an impartial examination of the history of contagious diseases which have at different epochs assumed such different forms. To none more so than to scarlatina, to which certainly the witticism of Sydenham is no longer applicable.

Drs. Marx and Willis have stated, in a work upon the Decrease of Disease, that no single one is upon the increase; but they have not alluded to the scarlet fever, which appears now and progressively to associate with it in the public mind all the horrors of all former contagions. This suggests the question of compensation in the history of diseases, and the amount of mortality, and whether it be true that if some increase in virulence, others degenerate in the same ratio. Hence, scarlatina and measles are said to agitate the scales in this way.

As far as statistical reports are drawn from any series of epidemics, I think the

conclusions cannot be drawn satisfactorily. It is a question whether, during a given number of years only, there has been at all times inclusive a balance in favour of one or the other.

Now, as regards the City of St. Petersburg, which contains four hundred thousand inhabitants, I can state from the opportunities which fifteen years' residence afforded me, that at all times and seasons scarlatina is a most murderous disease, and that, on the contrary, I did not meet with a single fatal case of measles either in my own practice or that of my colleagues. It is here what Sydenham said of scarlatina—a nursery inconvenience only. I must say, however, that something is, I think, attributable to thermal comfort in preventing the lung affections which are such fatal sequelæ of measles.

In turning our attention to the means which art and science offer in the treatment of this and similar specific contagions, two ideas naturally suggest themselves, viz.: the possibility of nullifying the poison by chemical agency, and the means of preventing its propagation to the healthy. All the *ratio medendi* must be comprised in these two clauses; for when once the disease is formed in the system, it is impossible to lay down any line of practice, which can be only based upon the symptoms which develop themselves, and these will assume as many shapes as the individuals upon whom the poison is operating its effects.

Original Communications.

ANALYSIS OF THE URINE OF INSANE PATIENTS

In St. Luke's Hospital, in the year 1844.

By ALEX. J. SUTHERLAND, M.D.

AND

EDWARD RIGBY, M.D.

THE following analysis of the urine of insane patients was undertaken, partly because it was a field of investigation hitherto untrodden, and partly from a conviction that the examination into the physical symptoms which accompany madness cannot be too minute. Unfortunately, insanity is regarded in this country with so much awe, and the subject is in itself so unattractive, and so unpopular, that it has not received that attention from medical men (not immediately connected with it) which it deserves; hence have arisen many mistaken theories as to its pathology and treatment, and many popular prejudices, founded upon very limited

experience. The theories of the mere metaphysician on the one hand, and of the mere anatomist on the other, are found too limited to solve the problem of the nature of insanity, and are indeed contradicted by daily practice; for, if madness, as some metaphysicians assert, be a disorder of the mind alone, then were it inexpedient to commit its treatment to medical men; and, again, if, in every case, or, even in the majority of cases, there be found an inflammatory condition of the blood-vessels of the brain, as some, whose experience of insanity is limited to post-mortem examinations, maintain, then it were needless to enter into minute inquiries as to the causes and symptoms which precede and accompany the disease. But, if every day's experience proves the error of such views, it points out at the same time the manner in which diseases of the mind are to be studied in order to the better understanding of their pathology and treatment.

It is better for us to premise, that there are certain regulations for the admission of patients into St. Luke's. It was the object of those who founded the institution to make it an hospital, not an asylum. There are, nevertheless, a hundred patients, called "boarders," whose disease has assumed a chronic form, and who are admitted by rotation from the list of those who have been discharged as uncured from the hospital after treatment therein for twelve months. As the annual vacancies among the boarders, which occur by death, or by removal of the patient, at the request of friends, are few, the person's name remains upon the list generally between three and four years before he is admitted as a permanent inhabitant of the hospital: these cases have furnished us with the specimens of urine found in our tables, under the head Dementia, or fatuity. There are also rules, which have for many years been adopted by the Committee, which point out those cases which are inadmissible even in the first instance into the hospital, viz:—

I. The possession of sufficient means for decent support in a private asylum.

II. Having been insane for more than twelve calendar months.

III. Having been discharged uncured from any other hospital for the reception of lunatics.

IV. Being troubled with epileptic fits, paralysis, or in a state of idiocy.

V. Females with child.

VI. Requiring (from disease or debility) the separate attendance of a nurse, or the assistance of a crutch.

VII. Being under the age of 12, or above 70 years.

VIII. Being brought not clean, not properly clothed, and not free from infectious disease.

The rejection of the greatest number of patients, upon the application of the friends for their admission, depends upon the violation of the 2d and 4th rules. The relations are not always the best judges of the exact period when the insanity first manifested itself, and it is often found, upon examination into the history of a case, that many things have been ascribed to caprice and temper which ought to have been attributed to disease: in many cases, also, it is extremely difficult to define the time when the disorder has first broken out, as its advances are sometimes gradual, and almost imperceptible; the affections have perhaps first become estranged, and the character by slow degrees altered, while the functions of the intellect remaining unimpaired, no delusion has been developed; when, however, the intellectual faculties begin to suffer, and the patient becomes troublesome, either from an access of paroxysms of violence, or from refusal of food, the friends begin to take the alarm, and, finding they can no longer manage him at home, they apply to the hospital.

Of course there are many wilful misstatements as to the time when the disease commenced, but these we shall willingly pass over without comment.

The same may be said of the violations against the fourth rule. Many patients are attempted to be passed off upon the hospital who are known to be paralytic, and to have had epilepsy; but, in all probability, the majority of cases of paralysis which are brought for admission are not known to be such either by the friends or by the medical man who sends them. The paralysis of the insane is a disease very different from common paralysis; there is no disintegration of the nervous fibre in these cases, but an exhaustion more or less complete of the nervous energy, producing a state of general debility, and trembling of the limbs: the motor nerves do not refuse to perform their

office, but they do it badly: hence the tremor of the upper lip and hands, the stuttering speech, the faltering gait. It is to be wished that some other name than paralysis had been found to express this affection, because it leads to much error and confusion of ideas, and patients of this description are sometimes brought to the hospital from long distances, and at great expense, who are refused admission because it is found by experience that they are incurable. It cannot be too often repeated, that general paralysis, or paralytic insanity, is an affection perfectly distinct from hemiplegia and paraplegia. The disease can be at once recognised by the peculiarity of the speech; the motor nerve of the tongue is generally the first to suffer; the exquisite play of the muscles becomes embarrassed, and produces hesitation and thickness of speech; the pupils of the eye are sluggish, and there is usually asynchronous action present.

The patients admitted into the hospital in 1844 afforded fair samples of the disease in all its varieties; the excitement, restlessness, and sleeplessness in mania; the hopeless despondency, and suicidal tendency in melancholia, were developed in the ordinary manner in the several cases, and differed only from each other in degree, and in the peculiar delusions upon which each had chanced to fix.* It is, however, proper that we should mention that the applications for the admission of women were more numerous than in preceding years; every bed on the female side of the house was occupied, and a resolution was obliged to be passed by the Committee to the effect that the female patients should be admitted by rotation according as vacancies occurred.

In examining the characters of the urine in the different forms of insanity to which we have already alluded, we have selected that which was passed immediately after rising in the morning, as being least liable to be affected by food, and therefore best calculated for affording a fair specimen of any peculiarities it might possess.

Our observations have been made according to a certain tabular arrangement adopted by one of us in previous and similar inquiries; and, what with

* The same observation applies to the cases of monomania, acute dementia, and puerperal madness.

the aid of the requisite tests, and careful use of the microscope, we trust that no peculiarity of any importance has escaped our notice. The analyses have necessarily been chiefly qualitative; nor do we suppose, even had the cases been fewer, and our individual engagements permitted such laborious investigation, that quantitative analyses would have elicited so much additional information as to have made it worth our while. To a certain extent, however, the quantitative investigation has not been omitted, for, whenever excess or deficiency has been detected in any of the urinary constituents, it has been carefully noted.

We have classed our observations under the following heads: viz. colour; acidity and alkalinity; sediments, including the various forms of epithelial matters to be detected by the microscope. Specific gravity; presence of serum; excess of urea; lithic acid and lithate of ammonia; phosphates; oxalates; carbonates; muriates; and mucopus globules. On each of these subjects we purpose to offer a few remarks.

The variety of colour, and general appearance of the urine in patients labouring under the different species of insanity, was perhaps one of the earliest facts which caught our attention. The high coloured urine occurring in mania and melancholia at the rates respectively of 52 and 56 per cent. was a striking feature, especially when contrasted with the urine of dementia cases, where this depth of colour

scarcely occurred in half the number; viz. only 24 per cent. Of the different tints of urine in the three great classes of insanity, viz. mania, melancholia, and dementia, the orange and amber of various shades predominate in mania, being rather more than 35 per cent. of the whole number; whereas, in dementia, the greenish yellow, and straw-colours, attain a proportion of even 52 per cent.; and, if the opal urines, which closely approximate in their tints to the two just mentioned, be added, we shall then have a proportion of nearly 71 per cent. of these colours in dementia.

As regards the colour, and, indeed, in most other respects, a considerable resemblance in the characters of the urine appears to exist between cases of mania and melancholia. The puerperal cases, and those of acute dementia and monomania, were not sufficiently numerous to warrant any distinct conclusion. The former and latter of these species were nearly equally divided; the high coloured urine occurring in the puerperal cases, and in monomania, in proportion of 55 and 60 per cent., whereas in each of the three cases of acute dementia which were noted, it was of this colour. It will also be seen that in other respects the urine in these cases bore a considerable analogy to that in mania and melancholia; the chief difference being that the peculiarities noticed in these two forms of insanity were remarkably exaggerated in acute dementia.

TABLE I.

	LIGHT COLOUR.				DARK COLOUR.				
	Colourless.	Greenish Yellow.	Straw.	Opal.	Amber.	Orange.	Red.	Brown.	Total.
Mania . . .	2	11	10	9	12	12	9	2	67
Melancholia .	1	6	8	7	12	11	6	0	51
Dementia . .	4	32	28	22	9	14	5	0	114
Puerperal . .		2	2		2	3			9
Acute Dementia					1	1	1		3
Monomania .				2	2	1			5

Mania . . .	32 light	1 in 2.09	47.76 per cent.	35 dark	1 in 1.93	52.24 per cent.
Melancholia .	22 light	1 in 2.31	43.13 per cent.	29 dark	1 in 1.76	56.86 per cent.
Dementia . .	86 light	1 in 1.32	75.61 per cent.	28 dark	1 in 4.07	24.73 per cent.
Puerperal cases	4 light	1 in 2.25	44.44 per cent.	5 dark	1 in 1.80	55.55 per cent.
Acute Dementia				3 dark	1 in 1	100 per cent.
Monomania .	2 light	1 in 2.5	40.00 per cent.	3 dark	1 in 1.66	60 per cent.

In examining the acid and alkaline states of the urine, it was found to be acid in about 80 per cent. of the mania and melancholia cases; and nearly approaching to the same proportion (viz. 77 per cent.) in the puerperal cases, and nearly in the same relation which these three forms of insanity bore to each other in point of colour; whereas in dementia it was acid in only 63 per cent. In the urine of this last mentioned form, a few hours were frequently sufficient, not merely to render it opalescent, but neutral, or even alkaline. In many of these latter cases it would distinctly redden litmus paper from the presence of carbonic acid,—on the removal of which by boiling, the urine became alkaline and turbid, from the precipitation of earthy phosphates, chiefly phosphate of lime, which were no longer held in solution by the carbonic acid. Indeed, it might be questioned how far the six cases of dementia in which the urine was marked “neutral,” might not have been placed more correctly under the head of “alkaline,” the urea being even in process of decomposition and conversion into carbonate of ammonia when passed from the bladder.

Of the three smaller sets of cases, acute dementia maintains the same position, as regards mania and melancholia, in point of the acidity of the urine, as it did with respect to the depth of colour; whereas the chronic characters of the monomania cases, making them approximate to those of

dementia, may account for the urine being alkaline in a large proportion, viz. 60 per cent.

TABLE II.

	Acid.	Neutral.	Alkaline.
Mania . . .	80·35		19·64
Puerperal . .	77·77		22·20
Melancholia .	80·00		20·00
Dementia . .	63·54	6·25	30·20
Acute Dementia	100·00		
Monomania .	44·00		60·00

On reviewing the notes which we have made on the subject of sediments, it must be borne in mind that under the head of “white and brown,” sediments of very opposite characters have been classed; this was unavoidable, nor is it of very great importance, for the table of lithates will give the proportion of these salts; and it will also be seen that the sediments of the urine in mania and melancholia are chiefly of this acid character. The preponderance of sediments in these two forms of insanity over those in dementia is remarkable, being respectively in the proportion of 87·50 and 100 per cent., while in dementia it was only 54·16 per cent., or little more than half. In melancholia the proportions are considerably the highest, particularly as regards the red sediments, thus maintaining the same station which it has been already seen to occupy as regards the depth of colour.

TABLE III.—SEDIMENTS.

	Natural Mucous.		White and Brown.		Red.	
	Number observed.	Proportion per cent.	Number observed.	Proportion per cent.	Number observed.	Proportion per cent.
56 cases of Mania: total 49, or 87·50 per cent.	24	42·85	20	35·71	5	8·92
9 Puerperal cases: total 9, or 100 per cent. . . .	7	77·77	2	22·22		
40 cases of Melancholia: total 40, or 100 per cent. . . .	18	45·00	16	40·00	6	15·00
96 cases of Dementia: total 52, or 54·16 per cent. . . .	30	31·25	21	21·87	1	1·04
5 cases of Monomania: total 2, or 40 per cent. . . .			2	40·00		

The observations on epithelial matter in the urine of these patients affords a good deal of interesting matter; melancholia again shows the preponderance to a certain extent; excess of epithelial matter having been met with at the rate of 57·50 per cent., whereas in mania it was 55·35, and in dementia, only 46·87 per cent.

One of the most remarkable features in the whole course of our investigations was observed in the examination of the epithelial matter. Although excess of epithelial matter was frequently met with, it was soon remarked that it did not present the ordinary characteristics of this appearance; indeed, the well-marked nucleated and tessellated epithelial matter was of rare occurrence in comparison with a peculiarly ragged and broken condition in which it more frequently appeared. Thus, in mania, this form of epithelial

matter occurred in the proportion of 19·64, and in melancholia of 20·00 per cent, whereas in dementia it was as high as 26·04 per cent. By reference to the table it will also be seen that although this ragged broken epithelial matter occurred nearly twice as often in dementia as the more common nucleated form, it occurred in mania nearly three times as frequently.

That this peculiar state of the epithelial matter is not dependent on an alkaline condition of the urine, is shown by the proportions in which it occurred; for although the preponderance was in dementia considerable, still it was extensively observed in the two other forms of insanity where acidity of the urine predominates. Whatever may be its source, we cannot but look upon it as one of the most peculiar features in the urine of lunatics.

TABLE IV.—EPITHELIAL MATTER.

	Nucleated and Tessellated.		Ragged and Broken.		Lace.	Unmarked.
	Number observed.	Proportion per cent.	Number observed.	Proportion per cent.		
56 cases of Mania: total 31, or 55·35 per cent. . . .	4	7·14	11	19·64	3 cases, or 5·35 per cent.	13 cases, or 23·21 per cent.
40 cases of Melancholia: total 23, or 57·50 per cent. . . .	5	12·50	8	20·00	1 case, or 2·50 per cent.	9 cases, or 22·50 per cent.
96 cases of Dementia: total 45, or 46·87 per cent. . . .	12	13·54	25	26·04		8 cases, or 8·33 per cent.
9 Puerperal cases: total 7, or 47·77 per cent. . . .	1	11·11	1	11·11		5 cases, or 55·55 per cent.
5 cases of Monomania: total 1, or 20 per cent. . . .						1 case, or 100 per cent.
3 cases of Acute Dementia: total 1, or 33·33 per cent. . . .						1 case, or 100 per cent.

As regards the specific gravity of the urine in lunatics, it will be seen that melancholia occupies the same prominent position here as it has done in the previous subjects of examination. Thus the cases of this disease, where the specific gravity was above 10·30, were

as many as 23·68 per cent.; whereas in mania they were only 8·92 per cent, or nearly a third. Mania appeared to occupy a medium position between melancholia and dementia, with respect to the specific gravity of the urine; thus the cases in which it ranged from

In the first of these cases, where the odour of sulphuretted hydrogen was remarkably strong, nitro-muriatic acid was given, by Dr. Prout's suggestion, with apparent benefit.

The difference of the specific gravity in the three cases of serous urine above quoted is curious enough. The only feature in common seems to be the colour of the urine, approaching to a red, and thus indicating the probability that the presence of serum was owing to a slight admixture of blood.

TABLE VI.—SEROUS.

	Number of cases.	Proportion per cent.
Mania . . 56	3	5.35
Melancholia 40	3	7.50
Dementia . 96 doubtful in 2 cases.	1	1.04

In investigating the subject of *Urea*, and ascertaining the proportion in which it occurred in excess in the different forms of insanity, by far the largest is in acute dementia; viz. in three out of four cases, or 75.00 per cent. But, the very small number of cases which occurred of this disease, scarcely permits it to be of sufficient extent for evidence in a statistical point of view; and, from the circumstance of the specific gravity being in every case above 10.25, the excess of urea can only be looked upon as merely resulting from the condensed state of the urine, or, in other words, from an unusually small proportion of aqueous matter. With this exception, melancholia again maintains the same prominent position which it has hitherto taken; excess of urea having occurred in this form of insanity at the rate of 47.50 per cent., of which it is worthy of notice that in 36.84 per cent., the specific gravity was not above 10.25.

Mania follows in the scale, showing excess of urea in 33.92 per cent., of which in only 21.05 per cent. of these cases, the specific gravity was above 10.25. In the nine cases of puerperal mania, the proportion was very similar; viz., 33.33; but, as in acute dementia, the specific gravity was above 10.25 in every instance.

Puerperal mania which has been of sufficient duration to allow of the patient being brought to St. Luke's Hos-

pital, is usually connected with, or, at least, accompanied by, considerable gastro-enteric derangement. The evacuations are very unhealthy; and, when roused by active mercurial purges, the bowels throw off immense quantities of feculent excretion, which are not so much the results of mal-digested food, as actually a discharge of impurities from the circulation by the secreting surface of the intestine; in these cases, the urine is always greatly loaded; and specific gravity very high, and excess of urea a pretty frequent result. We regret that in the numerous cases of anemic puerperal mania which have occurred to one of us, no examination of the urine has been made.

Dementia presents the fewest cases of urea; viz., only 16.66 per cent.; a proportion which might almost have been expected from the characters which the urine has been shown to possess in this form of mental derangement. It may be observed that in 43.75 per cent. of these cases, the specific gravity of the urine was not above 10.25.

TABLE VII.—UREA.

	Excess.	Relations to Sp. Gr.
Mania . . 56	19 cases, or 33.92 per cent.	21.05 per cent. above 10.25
Melancholia 40	19 cases, or 47.50 per cent.	36.84 per cent. not higher than 10.25
Dementia . 96	16 cases, or 16.66 per cent.	43.75 per cent. not higher than 10.25
Puerperal Mania . 9	3 cases, or 33.33 per cent.	None below 10.25
Acute Dementia . 4	3 cases, or 75.00 per cent.	None below 10.25.

On examining the results of our investigations as regards the frequency of lithic acid and lithate of ammonia in the urine of insane patients, it will be seen that nearly the same order of priority is observed.

In melancholia, lithic acid and lithate of ammonia respectively occur in the proportion of 47.50, and 32.50 per

cent, whereas in mania they only appear at the rate of 39·46 and 19·64 per cent. In dementia, the occurrence of lithic acid and lithate of ammonia must be considered as an unusual circumstance, inasmuch as they were only met with at the rate of 13·54 and 1·04 per cent. The extreme rarity of lithate

of ammonia, viz., only one in ninety-six cases, is worthy of notice. In the puerperal cases, the proportions were higher, being 22·22, and 11·11 per cent.

In the three cases of acute dementia, each of these deposits occurred once; whereas they were not observed in any of the five cases of monomania.

TABLE VIII.

TABLE X.

	Lithic Acid.		Lithate of Ammonia.		Oxalate of Lime.	
	Relative proportion.	Per Cent.	Relative proportion.	Per Cent.	Relative proportion.	Per Cent.
Mania . . . 56	22 Cases		11 Cases		10 Cases	
	1 in 2·54	39·46	1 in 5·09	19·64	1 in 5·60	17·85
Melancholia . 40	19 Cases		13 Cases		10 Cases	
	1 in 2·10	47·50	1 in 3·07	32·50	1 in 4·00	25·00
Dementia . . 96	19 Cases		1 Case		2 Cases	
	1 in 7·28	13·54	1 in 96	1·04	1 in 48·00	2·08
Puerperal cases 2	2 Cases		1 Case		—	—
	1 in 4·50	22·22	1 in 9	11·11		
Acute Dementia 3	1 Case		1 Case		1 Case	
	1 in 3	33·33	1 in 3	33·33	1 in 3	33·33
Monomania . 5	—	—	—	—	1 Case	
					1 in 5	20·00

In our table of the phosphates, we have first of all noticed the quantity and character of the sediment produced by precipitating them with ammonia,—dividing these under the four heads of “natural,” “abundant,” “sparing,” and “flocculent:” by this last we allude to the peculiarly light semi-transparent precipitate which takes place in some cases; it is a feature so well marked, that we have thought right to specify it, although unable to explain the causes on which it depends. Under the head of triple phosphates, are brought all those cases in which crystals of this salt could be detected by the microscope:—to this last head would we especially direct attention. The largest proportion of cases in which they occurred was in dementia, being 1 in 4, or 25 per cent. In mania, the proportion was also large, viz., 23·21 per cent., whereas in melancholia it was only 15.

The same preponderance was observed in mania with regard to the precipitate of the mixed phosphates by ammonia. In 33·92 per cent., it came under the head of “abundant,” whereas in melancholia this was not higher than 23·21, and in dementia only 17·7 per cent.; the peculiar flocculent appearance of this precipitate occurred

most frequently in mania; viz., in 7·14 per cent., whereas in melancholia and dementia it was respectively at the rate of 5, and 4·16 per cent.

The relations of phosphate of lime to these three principal species of insanity are different to those of the mixed or of the triple phosphates. It occurred abundantly in melancholia, at the rate of 52·5 per cent.; in mania, in 41·07, and in dementia, in only 15·62 per cent. It was entirely absent in 11·45 per cent. of the cases of dementia, in 5 per cent. of melancholia, and in only 1·77 per cent. of mania.

To offer any observations on the peculiar nervous irritability which attends phosphatic deposits, or to investigate how far this condition may be connected with certain forms of insanity, is a subject which, from its extent, and interesting character, would lead us far beyond the limits of this memoir; there can be no doubt but that it is one which is deserving of close attention, and well calculated to repay the inquirer for his trouble.

It is only fair to state the manner in which we have determined the phosphate of lime; it has been done by dissolving the precipitate of mixed phosphates in strong acetic acid, and throwing down the lime by oxalate of am-

monia. We are aware that this process has been deemed uncertain by a high authority, and that nothing short of actual incineration will show the real proportion of the phosphates; but the tediousness of this process rendered it

impossible, among such a number of cases, and we have therefore been compelled to run the risk of, we hope, only a slight degree of inaccuracy upon this head.

PHOSPHATE OF LIME.

TABLE IX.—PHOSPHATES.

	Number of Cases	Natural.	Abundant.	Sparing.	Flocculent.	Triple Crystals.	Natural.	Abundant.	Sparing.	None.
Mania . . 56	Relative Proportion	13	19	7	4	13	20	23	12	1
	Per Cent.	1 in 4.30 23.21	1 in 2.91 33.92	1 in 8 12.50	1 in 14 7.14	1 in 4.30 23.21	1 in 2.80 35.71	1 in 2.43 41.07	1 in 4.66 21.42	1 in 56 1.77
Melancholia 40	Number of Cases	6	22	4	2	6	10	21	7	2
	Rel. Proportion	1 in 6.66	1 in 1.81	1 in 10	1 in 20	1 in 6.66	1 in 4	1 in 1.90	1 in 5.71	1 in 20
	Per Cent.	15	23.21	10	5	15	25	52.5	17.5	5
Dementia . 96	Number of Cases	21	17	30	4	24	27	15	43	11
	Rel. Proportion	1 in 4.57	1 in 5.64	1 in 3.20	1 in 24	1 in 4	1 in 3.55	1 in 6.4	1 in 2.29	1 in 8.72
	Per Cent.	21.8	17.70	31.25	4.16	25	28.18	15.62	44.79	11.45
Puerperal Cases . . 9	Number of Cases	1	3	4		1	2	4	3	
	Rel. Proportion	1 in 9	1 in 3	1 in 2.25		1 in 9	1 in 4.5	1 in 2.25	1 in 3	
	Per Cent.	11.11	33.33	44.44		11.11	22.22	44.44	33.33	
Acute Dementia . 3	Number of Cases		3					2	1	
	Rel. Proportion							1 in 1.5	1 in 3	
	Per Cent.							66.66	33.33	
Monomania . 5	Number of Cases	1	1			3		3	2	
	Rel. Proportion	1 in 5	1 in 5			1 in 1.66		1 in 1.66	1 in 2.5	
	Per Cent.	20	20			60		60	40	

Oxalate of lime was observed most frequently in melancholia; viz., as often as 1 in 4 cases, or at the rate of

25 per cent. In mania it was 17.85, and in dementia only 2.08 per cent.

Under the head of *carbonates*, are

promiscuously brought all cases where effervescence was produced by the addition of an acid. This was seen most frequently in dementia—viz., in 34·37 per cent. In melancholia, the proportion was 30, and in mania 16·07 per cent.

Hydrochlorate of ammonia formed also a distinct subject of investigation, as we considered that wherever this salt existed in the urine, it indicated the formation of hydrochloric acid by the kidney, which can only take place as a result of inflammatory action in this organ.

Our numbers under this head are probably not quite correct, as we did not test the presence of this salt in every case, but in those alone where we had reason to suspect its presence. The proportion seems to have been nearly equal in all the three chief forms of insanity; viz., in dementia, 14·58; in mania, 14·23; in melancholia, 12·50 per cent.

Lastly, the presence of muco-pus globules was observed most frequently in mania; viz., at the rate of 17·85 per cent. In melancholia it was 10, and in dementia only 7·27 per cent.

TABLE XI.

TABLE XII.

TABLE XIII.

	Carbonates.		Muriate of Ammonia.		Muco-pus Globules.	
	Relative proportion.	Per Cent.	Relative proportion.	Per Cent.	Relative proportion.	Per Cent.
Mania . . . 56	9 Cases		8 Cases		10 Cases	
	1 in 6·22	16·07	1 in 7	14·28	1 in 5·60	17·85
Melancholia . 40	12 Cases		5 Cases		4 Cases	
	1 in 3·33	30·00	1 in 8	12·50	1 in 10	10·00
Dementia . . 96	33 Cases		14 Cases		7 Cases	
	1 in 2·90	34·37	1 in 6·85	14·58	1 in 13·18	7·27
Puerperal cases 9	—	—	1 Case		3 Cases	
			1 in 9	11·11	1 in 3	33·33
Acute Dementia 3	—	—	1 Case		—	—
			1 in 3	33·33	—	—
Monomania . . 5	3 Cases		—	—	—	—
	1 in 1·66	60·00				

In concluding these remarks, we may offer the following brief summary of our investigations, viz.

That in mania and melancholia the prevailing colour of the urine is high; in dementia it is light.

It is acid in at least 80 per cent. of the mania and melancholia cases; in dementia, the proportion is much smaller—viz., 63·54 per cent.

Sediments of one sort or another occur in almost every case of mania and melancholia, especially the latter; in dementia, in only every other case.

The specific gravity in the two former species ranges most usually between 10·21 and 10·30; that of melancholia frequently exceeds even 10·30, whereas that of dementia is usually found between 10·11 and 10·20.

Serous urine was a rare occurrence; viz., 7·50 in melancholia; in mania, 5·35, and in dementia, only 1·04 per cent.

Excess of urea was seen most frequently in melancholia, least so in dementia.

Lithic acid and lithate of ammonia were likewise observed most frequently in melancholia, and least so in dementia.

Lithic acid being, in all three forms of insanity, of much more usual occurrence than lithate of ammonia.

Crystals of triple phosphate were met with in dementia at the rate of 25 per cent.; in mania 23·21; and in melancholia, 6·66 per cent. Crystals of oxalate of lime were seen in every fourth case of melancholia, or, at the rate of 25 per cent. In mania, the proportion was 17·85, and in dementia, only 2·08 per cent.

Carbonates were seen most frequently in dementia and melancholia.

Muriates occurred at about the average of 13 per cent. in all three forms of insanity.

Muco-pus globules were most frequent in mania; viz., 17·85 per cent.; whereas in melancholia they were at the rate of 10, and in dementia of 7·27 per cent.

TABLE XIV.—SUMMARY.

	Colour of Urine.	Acid Urine.	Sediments.	Specific Gravity.	Serous.	Urea, Excess of.	Lithic Acid.	Lithate of Ammonia.	Triple phosphate Crystals.	Oxalate of Lime.	Carbonates.	Muriate of Ammonia.	Muco-Pus.
Mania	High	80.35 per cent.	87.50 per cent.	Between 10.21 and 10.30	5.35 per cent.	33.92 per cent.	39.46 per cent.	19.64 per cent.	23.21 per cent.	17.85 per cent.	16.07 per cent.	14.28 per cent.	17.85 per cent.
Melancholia	High	80.00 per cent.	100 per cent.	Between 10.21 and 10.30	7.50 per cent.	47.50 per cent.	47.50 per cent.	32.50 per cent.	6.66 per cent.	25 per cent.	30 per cent.	12.50 per cent.	10 per cent.
Dementia	Light.	63.54 per cent.	54.16 per cent.	Between 10.11 and 10.20	1.04 per cent.	16.66 per cent.	13.54 per cent.	1.04 per cent.	25 per cent.	2.08 per cent.	34.37 per cent.	14.58 per cent.	7.27 per cent.

ON THE
EFFECTS OF TOBACCO.

By R. H. ALLNATT, M.D., A.M., F.S.A.

IN the British and Foreign Review there are some observations by Dr. Chapman, an American physician, on the deleterious influence of the excessive use of tobacco. Nobody, perhaps, can speak on such a subject with an air of greater authority than one of our transatlantic brethren. The story of the dull and leaden tobacco-chewing senator, on board an American steamboat, is a picture of life and reality. The consumption of tobacco by Dr. Chapman's member of congress was "almost incredible by chewing, snuffing, and smoking."

When Raleigh introduced tobacco into England (for he still maintains the credit, notwithstanding the counter-assertions of Humboldt), the practice of smoking spread so rapidly, that, at the end of the sixteenth century, bitter complaints were made in England of this imitation of the manners of a savage people. It appears from Camden, that the fumes were emitted by the nostrils—"e naribus efflant." Raleigh gained little credit from high quarters for the service he had rendered the community, as appears from the celebrated "Counterblast" of James I. "And now, good countrymen," says the regal anti-tobacconist, "I pray you consider what honour or policy can move us to imitate the barbarous and beastly manners of the wild, slavish, and godless Indians, especially in so vile and stinking a custom." Sir Edward Coke, on the trial of the unfortunate Raleigh, thus apostrophised him from the bench: "Oh, damnable Atheist!" exclaimed the learned commentator upon Littleton, "I will prove you the notorious traitor that ever came to a bar. Thou art a monster! Thou hast an English face but a Spanish heart. There never lived a viler viper on the face of the earth than thou! Go to, I will lay thee on thy back for the confidentest traitor that ever came to a bar. See the most horrible practices that ever came out of the bottomless pit of the lowest hell!"

In 1634, smoking was denounced in Russia under the penalty of cutting off the nose—a penalty, by the way, rather

more appropriate to the practice of snuffing than that of smoking. The Turkish Sultan, Amurath the Fourth, rendered smoking punishable by death, under the supposition that it produced sterility. Urban VIII. anathematised the use of tobacco in churches. In the laws of Berne, the prohibition of smoking followed immediately after the crime of adultery.

The specific appellation, according to Humboldt, is derived from *tabac*, the name of an instrument used by the natives of America in smoking the herb.

The essential oil of tobacco is formed by destructive distillation; hence it is produced in the ordinary practice of smoking. A curious instance of the deadly power of this substance is given in Barrow's Travels in Africa:—"As I was endeavouring," he writes, "to set a snake at liberty, which was about two feet in length, one of the Hottentots took out, with the point of a stick, from the short stem of his wooden tobacco-pipe, a small quantity of a thick black matter, which he called tobacco-oil. This he applied to the mouth of the snake while darting out its tongue, as those creatures usually do when enraged. The effect of the application was instantaneous, almost as that of an electric shock. With a convulsed motion, that was momentary, the snake half untwisted itself, and never stirred more; and the muscles were so contracted, that the whole animal felt hard and rigid, as though dried in the sun."

According to Orfila, the celebrated Santeuil experienced vomitings and horrible pains, amidst which he expired, in consequence of having drunk a glass of wine in which some Spanish snuff had been infused; and from experiments instituted by the same toxicologist, it was found that five drachms and a half of common rappee, introduced into the stomach of a dog, caused nausea, giddiness, stupor, twitching of the muscles of the neck, and death in nine hours; and that two drachms and a quarter, applied to a wound, proved fatal in an hour.

Malin has recorded two cases of death from excessive smoking; in one case seventeen, and in the other eighteen, pipes having been taken at a sitting. Fatal instances have also been given by Sir Astley Cooper and Sir

Charles Bell, of the administration of the infusion of tobacco in hernia. The smoke, by inflation of the intestines, produced death in a case witnessed by Dessault. The application of tobacco poultices to the abraded skin in some instances has produced serious results. In the Ephemerides, an account is given of three children, who were seized with giddiness, vomiting, and fainting, from the application of tobacco leaves to the head, for the cure of ringworm.

Brodie's experiments prove that the action of the infusion of tobacco, when injected into the intestines, is to destroy the action of the heart, stop the circulation, and thus produce syncope and death. The empyreumatic oil, on the contrary, whether applied to the tongue or injected into the intestines, does not stop the action of the heart, but occasions death by destroying the functions of the brain, without directly influencing the circulation; this diversity of action may probably be referred to the presence of *nicotin* in the infusion, which is not contained in the essential oil. The extract, prepared by a gentle heat, is not divested of *nicotin*, and therefore acts in the same manner as the infusion. It has recently been recommended by Mr. Chippendale, as a local application, in the treatment of *tic douloureux*.

Tobacco-smoking, a few years ago, was carried in this country to a great excess; and now, according to the statistical returns, the annual consumption of tobacco is very large. It is, however, no longer a *fashionable* habit in our streets; and the prohibitions which exist against its use in various places of public resort, may eventually have the effect of still further diminishing the pernicious custom.

Chewing tobacco, in England, is happily confined almost entirely to the humbler classes. In this process all the soluble parts of the plant are taken up by the saliva, and a great portion swallowed. I witnessed an instance of the deleterious effect of this habit in the early part of last summer. On a fine cool day, whilst walking in the fields, I was struck by the appearance of a young man, engaged in the pursuits of husbandry; his occupation was not an arduous one, but streams of perspiration ran down his face, his knees tottered, and he appeared scarcely able to sustain his emaciated body over the

fallow ground. His cheek was sallow and sunken; his eye listless and heavy; and altogether he presented the appearance of a man inordinately given to opium-eating. Supposing he was ill, I questioned him, and he told me he had lately taken to chewing tobacco. The emetic effects produced at first had subsided, but his appetite was almost destroyed, and he was evidently gradually wasting under the noxious influence of the narcotic poison. I recommended, of course, a discontinuance of the abominable habit, and he took my advice. From that moment he began to recover his physical powers.

Such are some, and some only, of the effects of tobacco upon the system. In moderate doses it acts as a narcotic, sedative, emetic, diuretic and cathartic; but its habitual employment will produce a *tolerance* of its effects, so that in progress of time the constitution becomes to a certain degree inured to, and capable of withstanding, its powers. But this resistance is gained at the expense of the vital energies. The nervous system becomes universally depressed, and hypochondriasis and dyspepsia, with their train of evils, follow. In the present luxurious and artificial state of society, more especially in large towns, medical men are frequently at a loss to ascribe the maladies they are called upon to treat to a specific origin; but I firmly believe the habit of smoking has engendered, in this generation, many evils which have been imputed to other sources. I have known frequent instances of men, in the vigour of life, whose habits were temperate and active, but who, nevertheless, were harassed by a hypochondriacal melancholy, which rendered life almost a burthen. In these cases I have found that they were habitual smokers, and, moreover, that they *smoked fasting*; and consequently the saliva, necessary for the first process of digestion, was secreted in undue quantity, and wasted. The Turkish Sultan, who prescribed the bow-string edict on the supposition that tobacco produced *sterility*. That it does exercise great sedative power over the generative function there is no question, from the concurrent testimony of all great smokers; this, however, may probably arise more from its general debilitating effect, than from any spe-

cific power it may exercise over that peculiar system.

In all cases of indigestion and depression of the nervous energy, smoking should be strictly prohibited. I have known even a single pinch of snuff produce, in a person unaccustomed to its use, an instantaneous secretion of acid in the stomach, giving rise to intense gastrodynia. It has been frequently recommended in pyrosis, on the supposition that its sedative effects would arrest the effusion of fluid; but the grounds are erroneous; we can never isolate such effects; and if we could, the remedy indicated is not a sedative.

In conclusion, this paper has no other object than that of calling the attention of medical men to a subject which, I think, has been too much neglected.

Parliament Street, Whitehall,
May 8, 1845.

PRACTICAL OBSERVATIONS ON MALINGERING.

BY FRAS. W. GRANT CALDER, ESQ.

Assistant-Surgeon 2nd Regiment of Life Guards.

[Continued from p. 108.]

*Cases of deafness (?) A drunken trick.
A mistake. Recruits not given to
malingering.*

It is as important for the surgeons to know every man in the regiment, as it is for the adjutant; and no medical officer can be called a good one, who has not acquired this knowledge. By the assistance of the adjutant, the hospital serjeant, and hospital orderlies, he should lose no opportunity in gaining every information of this kind. Every little circumstance which bears upon the man's habits, his previous history before entering the service, and his character since, should be carefully noted. By knowledge such as this will malingerers be detected, their true reasons for attempting to get out of the service ascertained, and the whole artfulness of their ways made sufficiently apparent. In illustration the following case may be given. S., a native of Cornwall, entered our regiment. He got trained, and remained long enough to find out that the army was not what he took it to be. He was both well conducted and intelligent, and was not

thought to be a dissatisfied man. At length, however, he came to the hospital, complaining of being somewhat deaf in one ear; he stated that it had always been weak since he had had a fever some years before, but that now he could scarcely hear with it at all. He did not mind it so much, he added, only that it affected the other ear to such a degree as to render his hearing altogether very imperfect. He complained that he felt unequal to his duties in consequence, and begged that he might be cured if possible. He was taken into hospital, but after many weeks' trial it was ascertained there was no curing him. The hospital serjeant found out, whilst having a *tête-à-tête* with him, that before enlisting he had been employed in a mine in Cornwall, and had been in the habit of gaining some two pounds a week. We were told this, and from other reasons besides, we did not doubt that he wanted to go back to Cornwall again. A few mornings after this, my excellent colleague, Mr. Bett, said to me, in the man's presence, in an ordinary tone of voice, and so that he could not have heard had he been as deaf as he alleged he was, "Oh, I don't think it is of much use trying anything more with this man,—we had better discharge him. He is fit enough to take care of his horse, and, as to his deafness, we must tell the adjutant to put him in the centre of his troop at field days, and, when on dismounted duty he can always be placed at some out of the way post. Don't you think that is the best thing we can do with him?" I immediately replied in the affirmative, and he was forthwith discharged. His deafness could not prevent him from doing his duty at this rate, and this he was quick enough to see, for he soon after deserted, and has not since been heard of.*

[* In relation to feigned deafness, we find in a pamphlet lately published, upon the Impositions of Vagrants, the following anecdote. We quote it because it may suggest to our readers a very simple remedy in such cases.

A woman who acted as deaf and dumb, and who had imposed upon great numbers, was at length taken to a surgeon to be examined, when she was shown into a room (the surgery) and locked in for some time by herself. Presently two surgeons came in, and, after looking at the woman, who was sitting on one side, they seated themselves at a table, with their backs towards her, and began to consult together in a low voice about the best mode of "burking" her. They then laid upon the table some formidable looking surgical instruments, including amputation-

It does not, however, follow that because a man is young, the deafness sudden in its origin, and unattended with any signs, either constitutional or local, that the affection is therefore simulated, as the following case proves. W., aged 20, had only been a few months a soldier when he complained of feeling deaf, first in one ear, and then in both. The affection gradually got worse, despite every effort to the contrary, and he has remained so now for about five years. So deaf did he become that he was found unfit for the ranks, and he has in consequence been employed ever since as an officer's batman.

A good enough man will for a temporary purpose sometimes shuffle, and throw himself into hospital. He may have been drinking overnight, and being for duty on the morrow, he finds his corporal upon him, and expecting him sooner on parade than he can possibly manage it. If a man so situated has but a scratch upon his leg, he will tell the doctor so many stories about its severity, and so forth, that it is quite painful to hear him. He had better be admitted into hospital, but let the orderly non-commissioned officer of his troop or company be sent for, and of him let inquiry be made, whether he has reason to suppose that the man is shuffling or not? If he gives any good reason, such as the one above stated, and our own observation bears him out in what he says, we must take care to make him thoroughly tired of the hospital. We must confine him to bed, give him plenty of physic, and, as we order him the other dose, we must call to his recollection, in as sympathising a manner as possible, that the nature of his ailment, as stated by himself, is such as to demand active means of cure. We must never allow him to suppose that we doubt him, but treat him for what we admitted him; we confine him a day or two longer on spoon diet to prevent a relapse, as we may call it, and the chances are ten to one that the next time he is for duty he will suffer any reprimand, or quietly submit to any punishment for his negligence or error, rather than again take refuge in hospital. He quickly finds

knives, with all the requisite apparatus for taking off limbs, when the woman, at length, thinking that they were in earnest, began to cry out "Murder!" most lustily. She was sent to prison for three months.—ED. GAZ.]

out that he has "caught a Tartar," if he has been starved, physicked, and confined to bed,—deprived of his beer and every comfort, and yet, on leaving hospital, has the very duty to do, which, at least, he thought he had evaded. This is a sort of logic which few are backward to understand; he pockets the experience thus so dearly purchased, and he benefits by it in future.

Sometimes, again, a good old soldier, sober and steady in his habits, will accidentally get tipsy. Anxious to preserve his character, and being just so drunk as to know that he is so, he will attempt to impose upon the doctor by feigning some little illness. He generally keeps himself bent forward, as he is unwilling to show his eyes, and asserts that he has been taken ill with some sudden griping pain in the belly. The following case is an instance of this. The detection is chiefly useful in order that we may save our characters in the eyes of the man and the hospital servants. I do not mean by this, that having strong reasons for suspecting the truth of the man's story, we are to tell either him or them so; far from it; I merely mean that we are to save our reputation by not commencing to treat such a case in the manner we generally do when the affection is real. We prove to all concerned that we are awake when we look mildly upon the whole affair, and, ordering him a warm fomentation to the abdomen, request that he may be put to bed immediately. It is always well to avoid too nice distinctions in the diagnosis of disease, and although in our own minds we may feel perfectly assured that he is an impostor, nevertheless we should not be too headstrong on this point; we should in the course of an hour or so afterward go into the ward where he is lying, and, while we shew attention to some other patient, we may observe whether he is sleeping or not. A man not absolutely drunk generally goes to sleep when he finds himself snug in bed: if he is so, all may be considered right, but if awake, he had better be spoken to, and minute inquiry be then made into his case. Such conduct may be the means of saving a fellow-creature's life. He may have been drinking, but still that is no reason why he may not likewise be ill. Undivided attention in a me-

dical man is a better qualification than the possession of the brightest talents without it; and he who wishes to become eminent in his profession must first make up his mind to become diligent in its pursuits.

CASE.—M., a good old soldier, was brought to the hospital at stable hour of the evening of 1st April, 1840, quite doubled up, holding his hands upon his belly, and roaring out with pain. He stated that it had come on suddenly a little before I saw him; he stated likewise that he was very liable to it. I had then been nearly three years in the regiment, and had never heard of it before. I spoke to him smartly, saying, "Stand up, sir!" He immediately did so. I observed then that his eyes had a listlessness in them, which made me suspect drunkenness. His pulse was good; his skin was cool, but his tongue was dry in the centre, and brownish. He stood up straight enough, and answered questions intelligibly. The corporal, who accompanied him, said that he was in nowise tipsy. A little peppermint water was given to him, and he was ordered to bed. He was very soon fast asleep. Next morning, as he said that he was quite well, he was discharged. There was no return of the pain after I told him to stand at attention, and there has been no return of it since, although he stated that he was liable to it. This man I have no doubt was somewhat intoxicated, but, as he was a good man, it was proper to allow him to escape without any further notice. The corporal who accompanied him was a kind-hearted man, and his testimony therefore went for nothing.

It is generally in the cavalry that cases of the above nature are met with. In consequence of the evening stable duty, the dragoon is obliged to keep sober to a later hour than the infantry man, and many a one who is not so drunk but he could walk into barracks and go to bed unnoticed, is yet quite unable to muster a parade and proceed to do up his horse properly for the night. It is the man thus situated who will behave as I have just stated.

It may be proper sometimes to follow quite a different course, as the following case illustrates. N., an old soldier, having just completed his period of service, and about to be discharged the regiment, was one evening at

stable hour brought to the hospital by a non-commissioned officer and two privates, sick, and unable to stand up, as he alleged, in consequence of a griping pain in his belly. A person three parts drunk is generally well aware that his intoxicated state can be more easily detected by his eyes and the state of his countenance than either by his unsteady gait or faltering tongue; and he accordingly avoids the look of him from whom he is anxious to conceal his drunkenness. Such was the case with N. He would not look me in the face, and when he showed me his tongue he shut his eyelids. N. was a sober, well-conducted man, but I instantly saw that he was drunk, and that an attempt was being made to impose upon me. When left to himself but for a minute, he began to appear heavy for sleep;—this was inconsistent with the state he described himself to be in; and, besides having the vacant countenance of one drunk, I could clearly enough detect the smell of liquor upon him. I now said to those who accompanied him, that they had brought me a man, not ill but drunk,—that, as he was a good old soldier and about to be discharged the regiment, I should permit him to have a bed for the night in hospital, but that I should not do so again with any other man; on the contrary, that I should instantly send him to the guard-room, and not only have him punished for being drunk, but that I should prefer charges against him for malingering. A happy hit of this kind does everything to establish the reputation of the regimental surgeon. But no surgeon can do this until he knows the men of his regiment, and has become practically acquainted with disease. This man next morning thanked me kindly for not sending him to the guard-room, and begged my pardon for attempting to impose upon me. Well does a regiment know when it has intelligent surgeons. A sharp surgeon keeps many a man effective, who would otherwise evade his duty from time to time, and in the end find his way into civil life,—a burden on his country for having done nothing save to show an evil example to his fellow-men.

Every day's experience convinces me of the great uncertainty of any human opinion, and of the absolute necessity which exists for our being

humble and diffident in all things. A recruit who had shown some disposition to prove an unruly soldier, presented himself at the hospital, complaining of a weakness and pain at the lower part of the left side of the belly; he said it was much aggravated by riding, and, in consequence, begged that he might be excused that part of his duty. His countenance was the picture of health, and, as there was nothing to be seen to corroborate his statement, he got a dose of physic, and was denied his request. In the course of a week he again presented himself. He now complained of both sides of his belly, and rather peremptorily demanded that he should be excused riding for a week. He did not point to the site of the external abdominal rings as the seat of his indescribable feelings, but rather to the front and sides of the hypogastric region. The pain was not aggravated by pressure, and there was still no external evidence, or any collateral proof that tended to enlighten us regarding the nature of his ailment. Mr. —, therefore, said to him, "Oh, I do not wonder that you feel pains on learning to ride; we all did so more or less; but those pains always go off as we improve in our riding: therefore, as you are only one hour a day on horseback, I shall tell the riding master to give you two, and I do not doubt but that by such a course you will the more quickly learn to ride, and therefore get the sooner well." He looked both sour and disheartened, and went away. I thought this was exceedingly well said, and did not doubt of its success. In the course of the following week, however, he presented himself, requesting admission into hospital, in consequence of both testicles being the seat of hernia humoralis. The epididymis in each was somewhat enlarged, but the vas deferens, as it enters the external abdominal ring, on both sides, was much swelled, hard as a piece of wire, and exceedingly painful to the touch. In the course of both inguinal canals he likewise experienced very great pain on pressure. So far his case was now clear enough. He had then no running upon him, but he admitted that for some time previous he had had a very slight gleet discharge. It was, however, very trifling, and he feared to admit it, because he

was unwilling to be taken into hospital. Moreover, he thought the pains he previously felt could have nothing to do with it. This act of concealment on his part was an error, but I am not sure that the greater error did not rest with us. The sequel makes everything very clear. The inflammation was slowly finding its way along the vas deferens from the urethra to the testicle, and was thus giving rise to those pains, feelings of weakness, and indescribable sensations, which he laboured under for some time before the testicles became affected. However anomalous the symptoms of a case may be, the propriety of admitting a man into hospital, and putting him under some treatment, could scarcely be better illustrated than by the case just related. On home service, and in quarters, this is generally manageable; and there can seldom be much excuse for the exercise of any severity in times of peace. In the field the thing must be quite different. No one can tell then what an additional bayonet may not achieve: and on the day when the honour of our country, and the rights and liberties of "wife, children, and friend," are threatened, it behoves us to send to the ranks, or to make available in some shape or another, every one whom we suspect. To use a common, but true phrase, we must trust in God, and do our best.

As a general rule a recruit need not be suspected of malingering. He is too anxious to get trained, and, like the young man whose case has just been related, rather conceals the disease in order to avoid the hospital. His anxiety is to learn his duty, and to become a soldier: it is only when he gets a little older, and begins to reflect upon his prospects, that he thinks of finding his way out of the regiment: and if he had not mixed with the worthless men of the corps, the chances are many, that, to feign a disease, would never have entered into his head. The grand object with the surgeon should be, not to allow one malingerer to escape; and if he feels that he has not done so, he may be the less afraid of being imposed upon in this way.

[To be continued.]

ON THE PATHOLOGICAL CHEMISTRY OF THE URINE AND BLOOD.

By GEORGE PADLEY, Esq.
Liverpool.

1. *On some circumstances influencing the coagulation of albumen.*

A SHORT time since some urine was left me for examination, containing pus. It was filtered, and heat applied to the clear fluid, which was acid, to ascertain the quantity of albumen it contained; but it was boiled without effect. The non-occurrence of coagulation being unusual under such conditions, I added some nitric acid, which immediately caused a precipitate that became flocculent by heat.

It is stated by Dr. Rees (whose researches in this department have deservedly given much authority to his name), that "acid urine never prevents the precipitation of albumen by heat," and that "a specimen shewn to be acid, and not coagulable by heat, may safely be declared free from albumen*."

Here, however, was acid urine containing a considerable quantity of what I could not but consider albumen, yet unaffected by a boiling temperature, and therefore quite at variance with the above statement. On inquiry, the only thing I ascertained was, that some nitric acid had been previously poured into it.

The following are the results of an examination, suggested by the above circumstance, into the influence of this acid upon the coagulability by heat of albuminous urine.

Three drachms of urine, sp. gr. 1013, acid, containing nearly 0·8 per cent. of albumen, the coagulum occupying a quarter of the bulk of the fluid, was unaffected by heat after the addition of one drop of equal parts acid and water†, and remained permanently transparent. More than twelve times this quantity, however, diffused through the fluid, was insufficient to cause any immediate opacity. In three drachms and a half, with the same quantity of acid, there

* Braithwaite's Retrospect, quoted from Med. Gaz. The remark is perhaps applied to urine *naturally* acid, but it is not so stated, and, as will presently be seen, may thus mislead.

† Not quite equal to a quarter of a minim of pure acid.

was no immediate effect by heat, but a slight cloudiness after standing a short time. Opalescence was produced in half an ounce, but no precipitate after standing.

In other words, one part of nitric acid is sufficient completely and permanently to prevent coagulation by heat in about 750 parts of urine, containing a large quantity of albumen;—to prevent any immediate effect, all that is generally waited for, in about 850 parts;—and to interfere materially with a correct estimate being formed in a much larger proportion. The quantity of albumen being small, as it generally is in advanced stages of renal disorganization, 1-1500 or less acid will produce the same effect.

The turbidity produced by heat in such urine is removed by a drop of the acid added to the hot liquid. This does not take place when it is first allowed to cool; but even then heat will permanently restore its transparency. This is due to the re-solution of the albumen, and not to its separation into corrugated flocculi, by which, when there is a denser coagulum, and more acid, the opacity of the fluid is always in some degree lessened. The acid should therefore be used in excess, or not until the fluid has become cold, otherwise that will be ascribed to a deposition of phosphates which is really due to coagulation of albumen. In some urine I lately examined, the former redissolved as the fluid cooled, and was thus sufficiently distinguished from albumen.

These two re-agents, heat and nitric acid, are generally considered not only indispensable in examining urine for albumen, but, when used together, certain in their indications. The acid is thought by some to aid the effect of heat; its tendency is, to a certain extent, however, to oppose it. The one is undoubtedly essential to correct the fallacies of the other; but care should be taken that what is intended to correct is not itself a cause of error.

Dr. Watson states that nitric acid "will detect albumen when the tested urine is alkaline;" this is well known, "and by *restoring its acidity*, will make the albumen discoverable by the test of heat." This, however, is a condition which will as effectually prevent the coagulation by heat as the previous alkalinity; a drop beyond what would

neutralize the alkali being sufficient for such a result. When the urine therefore, is alkaline, the acid should always be employed as the precipitant, and never with the intention of "restoring acidity."

Dr. Christison, speaking of the separation of earthy phosphates, when in excess, by heat, and the mistake liable thereby to occur, says (and this is quoted by Dr. Copland) that it is "a deposition which nitric acid will both *prevent* and *remove*." This acid, however, which will prevent the deposition of earthy phosphates by heat, will equally prevent that of albumen.

In the remarks preceding the extract from Dr. Rees's paper in the *Medical Gazette*, before referred to, it is observed that "he was one of the first to shew that it was necessary for nitric acid *also to be present*," heat alone not being a sufficient proof of the existence of albumen. From what has been stated, it will be seen that it is necessary for nitric acid *to be absent* while applying the test of heat, however necessary its presence may be to correct or corroborate the indications of the latter after it has been applied.

The conclusion to be drawn from the passages quoted is, that by adding nitric acid to the urine, we remove the fallacies and insure the accuracy of heat as a test for albumen. I think it very desirable that an impression shewn by the above remarks to be incorrect, and by the above quotations to be generally entertained, and which I also *know* to have led into error, should be corrected. In several instances I have been told that urine was not albuminous, which, again examined, became turbid and flaky by heat, remaining so after the addition of acid. I have known the dilute acid employed to neutralize alkalinity before applying heat. This is also sometimes used as the precipitant. If the albumen be not abundant, the quantity added would probably be often not sufficient to cause a persistent precipitate, especially if heat were applied, yet quite enough to prevent coagulation by the latter. The absence of albumen would thus be wrongly inferred. The strong acid should therefore always be used.

The quantity of acid necessary to produce the effect above described is so minute, that I have found a little

urine, tested by it, adhering unperceived to the sides of a test tube, sufficient to falsify the result. Thus, a tube in which a portion of albuminous urine had been thus coagulated, was used to test another portion by heat. A little excess of acid had been added, and the tube emptied, the contents being allowed to drop out until none appeared to remain. The result of the latter examination would have been a fallacious one, as no coagulation took place. This is by no means an improbable source of error. A neat and careful analyst will of course always clean his apparatus after one experiment before performing another; but this is not as we see it in the rough testing for clinical purposes, one after another perhaps using the same glass with either test. It is well, therefore, to guard those who are in the habit of making such examinations (probably too often neglected), against a wrong conclusion—so easily avoided—on a subject often so important in diagnosis.

This property of nitric acid may possibly sometimes admit of useful application. Dr. Bird has seen a very highly coloured deposit of pink urate of ammonia, occurring in albuminous urine, mistaken for blood; this kind of deposit, when in abundance, requiring a higher temperature than the ordinary sediments of the urates, to redissolve it. A little nitric acid, by preventing the coagulation of the albumen (the cause of difficulty), might have enabled the re-solution of the deposit by heat to have been recognized, and its character thus determined more readily than by filtering, &c. Sufficient might also probably be added to dissolve any phosphatic deposit, which sometimes occurs in albuminous urine, without coagulating the latter, and thus to distinguish it from the mucus and epithelial scales, which are generally the cause of the opacity. These are, however, merely suggestions.

Although Dr. Prout has discovered this acid existing naturally in the urine, it would, even if free, be probably in a proportion too small to have any influence. I have, however, lately seen it mentioned, on the authority of M. Becquerel, "that acid urine containing albumen will sometimes not coagulate by heat alone for some unknown reason."

Several circumstances, as we have

seen, are liable to render fallacious a negative result of the application of heat. At the time of making the above experiments, I knew of nothing to interfere with the conclusion that there was no albumen present when nitric acid was added in moderate quantity without effect. I have since found, however, that a small proportion of the acid (insufficient to render it turbid), diffused through albuminous urine, and allowed to remain about twenty-four hours, or less, will diminish or quite prevent its opacity upon the further application of the test; although another portion of the same urine, tried at the same time, may become completely turbid by acid, and also by heat, afterwards depositing a small coagulum. The same effect was not produced on diluted serum. What the particular action or change in the urine is on which it depends, I am not prepared to say.

2. *The forms of crystallization of nitrate of urea.*

The evidence of the presence of urea in the blood and other fluids is generally obtained when it has been separated from other principles by the formation of its nitrate; and this is spoken of by the best authors on such subjects—Christison, Turner, Rees, &c.—as forming "pearly scales," "crystalline scales," as "having a peculiarly characteristic appearance," &c., and by Dr. Prout merely as a crystalline compound; but no where have I seen any regular form of crystal described.

I have recently obtained a considerable proportion of urea, as a nitrate, from the blood of two patients suffering from granular disease of the kidneys, a portion occurring as the crystalline scales usually met with and described, but the remainder—and in one specimen the greater part—forming well-defined, transparent, rhomboidal tables; some becoming thicker, so as to form more complete rhomboids. The only delineation I know of is in Dr. Prout's work, after M. Rayer, but it does not give a correct idea of their appearance as they occurred, for example, in the above instances; and neither this, nor the descriptions above quoted, would aid the experimenter in determining the nature of the crystals, when they assume the characters here mentioned, but would rather tend to create uncertainty. The accompanying

outlines represent the forms of some of them (these probably depending on the purity of the solution, and the degree of rapidity in crystallizing), and are of the natural size.



To those who are novices in these investigations they may be useful, though perhaps familiar to the experienced. The former might be perplexed by the appearance of what does not correspond to the descriptions given, and be disposed to doubt having found the substance sought. It is to prepare them for this that I have been induced to notice the subject here; and, as Dr. Prout has thought its representation worth a place in his valuable work, to send what appears to me to be a better defined, and, if I may without presumption say so, a more perfect one.

I may mention, that I subsequently obtained pure urea from the serum raised by a blister from the nape of the neck of one of the patients; and, after death, from fluid effused into the pericardium. The usual results of this poisonous accumulation gradually made their appearance, deferred however, and then relieved for a time, by appropriate treatment. The man became more and more drowsy for some days, and, after several severe convulsive attacks, he died in a state of complete coma.

3. *On the relation between the densities of the urine and serum in morbus Brightii.*

The serum of the blood in this disease is usually found of low specific gravity, and this seems in general to be attributed solely to the loss of albumen, removed from it by the kidneys. Thus, in the *Cyclopædia of Anatomy and Physiology*, it is remarked that the specific gravity of the serum indicates with tolerable accuracy the quantity of albumen it contains; and Dr. Christison

states that a definite ratio exists between the coagulability of the urine and the density of the serum; "the deficiencies of one fluid," in the words of Dr. Watson, "balancing the superfluities of the other." The low density of the serum seemed to me, however, in many instances, not to be sufficiently explained by the condition, exclusively, of the urine, though the mere loss of albumen may. In Bright's disease, the urine, even when passed in small quantity, is likewise of low specific gravity, from deficiency of urea and salts, which, being mere excretions from the blood, are retained in it when disease prevents their elimination by the kidneys. The presence, therefore, of albumen derived from the serum, in the urine, does not compensate, in respect of density, for the absence of urea, &c. retained in the former*. We should thus expect that the abstraction of albumen from the serum would be more than balanced by the retention of urea, if no other cause than the former operated to reduce its density. But this is not the fact. A case is described, for instance, in which the urine did not contain one-third the urea which it does in health; while about one per cent. of albumen supplied its place.

According to Berzelius, the urine in health contains 30 parts of urea in 1000, or 3 per cent., so that in the above case it lost 2 per cent. of urea, besides some salts, and gained but 1 per cent. of albumen, yet from analogy—the disease being in an advanced stage—the serum would probably also have been found of low density. Many similar cases are recorded.

When both serum and urine are thus reduced, the fact must be accounted for in some other way than by this interchange of principles. It probably arises in every instance from that impoverished condition of the blood, consisting especially in its diminution of hæmotosin, and consequent increase of water, in addition to the loss of its albuminous portion, which is well known to occur in this disease, and is of more serious import than if the low specific gravity of the serum depended on the latter circumstance alone. I have not seen this comparison of the two fluids spoken of as indicating the condition

* The idea of the albumen being derived from urea being no longer entertained.

alluded to, and therefore aiding the judgment as to the progress made by the disease in its effects upon the system. One may be so reduced without this state necessarily existing, but the other probably would then be found increased, and this we find in the earlier periods of the disease, the density of each being occasionally higher than in health; but it is probably only in the advanced stages, when the blood has undergone the change mentioned, that *both* are reduced. Possibly urea, or something analogous, may be removed vicariously, or even less may be formed than in health. The urinous odour emitted from the skin of some patients would lead to the former supposition. It was remarkable in one of the patients before alluded to. The urea obtained from the serum of the blister showed how much was circulating in the cutaneous capillaries; yet in this case the serum was only 1020 specific gravity, and the clot formed a loose semi-transparent gelatinous-looking mass.

4. *On the tests of diabetic urine.*

Among other experiments, some months since, with diabetic urine, it was subjected to Trommer's copper test, as was also some healthy urine, for the purpose of comparison. The results were, a red pulverulent precipitate in the one case, and a light-greyish flocculent one in the other. Though the latter was not in the form of black oxide, as mentioned by Dr. Bird, but a light coloured hydrate, yet the contrast was sufficiently striking. In both the supernatant fluid was deepened in colour, but more so in the former. Not long after this I applied the same test to the urine of a man, which, though albuminous, had a specific gravity above 1030, yielded on evaporation a considerable residue of syrupy consistence, and was therefore suspected to be diabetic. The precipitate obtained by Trommer's process in this case was flocculent, but of a red tinge. It thus differed from the specimen of diabetic urine before tried in being flocculent (its hue also was not quite the same as the coppery red of the other), and from the healthy, in being coloured. The conclusion, however, was, from the confidence expressed in the accuracy of the test (*i. e.* the production of a red precipitate), that the

urine contained a small quantity of sugar, and it was so stated, but incorrectly, as I was led to believe from the following circumstance. On again testing some urine from a person in apparent health, a coloured precipitate was obtained. This induced me to try the specific gravity, which was 1031. It formed, without concentration, an abundant crystallization with nitric acid, and heat caused a precipitation of the phosphates. The albuminous urine above noticed in a few days fell in specific gravity to 1013, but now afforded, by the copper test, a nearly colourless precipitate. The inference from these experiments was, that excess of urea was the cause of the error into which reliance upon the indications of the test at first led me. I have within the last few days seen an account of some experiments of Mr. Gairdner*, in which uric acid is spoken of as affecting the results of this test. It might have been so in the instance above mentioned, as a specimen of the urine subsequently obtained, though still containing urea in excess, precipitated, on cooling, a copious pink deposit of lithates—a fact somewhat at variance with Liebig's theory on this subject.

In some of Mr. Gairdner's experiments, common (cane) sugar seems to have been employed. Now this, as mentioned by Mr. Moore, of Birmingham, has a very different reaction from grape sugar, which most nearly resembles that of diabetic urine.

Dr. Bird concludes a favourable notice of a test proposed by the latter gentleman, and suggested by the action of boiling liquor potassæ upon solutions of grape sugar, by stating that "boiling with liquor potassæ has rather a tendency to blanch non-saccharine urine." I have not found this to be the case. Urine of density 1031, crystallizing spontaneously on the addition of nitric acid, was changed by this means from a pale amber to a bright orange colour, from which it would have been concluded, according to the above remark, that it was the urine of a person with incipient diabetes. It contained no sugar, however, although a few times as high as 1035. The colour of urine, specific gravity 1020, was slightly but distinctly, deepened by this process.

* Braithwaite's Retrospect, Vol. 10.

MEDICAL GAZETTE.

FRIDAY, JUNE 6, 1845.

IN a recent number* we reported an interesting case involving the plea of homicidal insanity, lately tried at the Central Criminal Court. We allude to the case of Martha Brixey, a girl of 18, charged with the murder of the infant child of a gentleman in whose service she was living at the time as nurse. This case it appears to us is well deserving of the attention of the profession for two reasons: 1. Because the acquittal of the prisoner on the ground of insanity, under the circumstances, shows that our criminal tribunals are ready to act upon the doctrines regarding homicidal monomania which have been long advocated by writers on this subject, and which have for years been fully carried out on the continent. 2. Because it shows most strongly that the rules for enforcing criminal responsibility in alleged insanity, as recently laid down by a conference of our judges in answer to the queries of the House of Lords, are wholly inapplicable to these cases. Indeed, it would appear that had they been enforced in this instance, they would have undoubtedly led to the execution of a person, concerning the propriety of whose acquittal on the ground of insanity, there cannot we think be a reasonable doubt.

The facts have been so recently reported, that we need not do more than give a short sketch of the evidence. The girl, it appears, had been for some time labouring under disordered menstruation; but her master, and all the other witnesses, agreed in stating, that in her general conduct she had always been extremely kind in every re-

spect. Her conduct was always quiet, harmless, and inoffensive. Her fellow-servants deposed that she was of a very kind disposition, and that the children were very fond of her. A short time before the occurrence, she had displayed some violence of temper and irritability about a dress which had been given to her, and she was about to leave the service in consequence;—but we presume that had she not perpetrated the murder, an incident of this kind would have hardly called for notice, and certainly would have formed no ground for anticipating an attack of homicidal insanity. On the morning of the murder, one witness deposed that she did not look well, and was rather low in spirits. Here, then, we have all that can be adduced as evidence of insanity.

With regard to the mode in which the murder was perpetrated, there appears to have been a mixture of deliberation and impulse. Esquirol divides homicidal monomania into two distinct forms, characterised by one or the other condition; the former creating the greatest difficulty, from the resemblance which the act then bears to the acts perpetrated by a sane criminal. That she had deliberated upon the murder appears probable from a conversation which she had had with her fellow-servant the day before, in which she said, "I need not make myself so very unhappy as I do; one would think that I had committed murder, but I have not done so." She then asked whether she (the fellow-servant) ever knew of a woman being hung; and said she would as soon be hung as transported, or put into a madhouse. The singular power of self-control, which has been observed in some homicidal monomaniacs, was here entirely absent. She procured a large knife from the kitchen, under the pretence of cutting a pencil with it; and when it was suggested to her that a smaller knife would answer

the purpose better, she made an excuse for taking the large one as well, having previously tried the edge of it against her finger and thumb. She then went up stairs, and, having cut the child's throat, she immediately afterwards went down and told her master what she had done.

A competent witness, who saw the prisoner immediately after the perpetration of the act, deposed that her language and manner exhibited a consciousness of what she had done; she showed much anxiety to know what would be done to her, and what would become of her, and inquired of the officer who had charge of her, whether she would be hung or transported.

In this case, therefore, we have no sign of intellectual aberration indicated by outward actions before or after the perpetration of the murder;—some deliberation,—a perfect consciousness of the act, and the knowledge that she had done wrong and committed a crime forbidden by divine and human law, as evinced by her anxious inquiry whether God would forgive her, and what was likely to be her punishment. There was not the slightest evidence that the prisoner was labouring under any delusion; and even admitting the existence of such a delusion, it could only have been of a partial nature.

On what, then, did the proof of insanity rest, and why was this person acquitted? The only answer that can be returned to these questions, is *the nature of the crime, and the manner in which it was perpetrated*; and yet, in the case of Greensmith, tried in 1837, evidence of this kind was rejected by the judge, and the medical witness rebuked for tendering it!

In the prosecution, the answers of the judges on the subject of criminal responsibility were brought forward; and on the authority of these it was

contended that a person who labours under partial delusions and is in other respects insane, notwithstanding that the act is done with a view, under the influence of insane delusion, of redressing or revenging some supposed grievance or injury, is punishable according to the nature of the crime committed, if the individual knew at the time of committing such crime that he was acting contrary to law. On applying this test to the case before us, it is pretty clear that the case would not be comprised by it; and thus, by the acquittal of the accused, we have the practice conflicting with the theory of our criminal jurisprudence. The rules for defining the limits of responsibility in these cases cannot be laid down either medically or legally. This is established not only in the present instance, but by the recent cases of Crouch, Saville, Frost, Dickenson, and others. The theory of the law appears to contemplate only decided proof of intellectual aberration in the accused, —in practice it is compelled to receive proof of what is denominated moral insanity, *i. e.* perversion of the moral feelings, without any distinct evidence of an antecedent or coexisting intellectual disturbance. For this reason it appears to us that the best answer which the judges could have returned to the queries of the House of Lords, would have been the statement put forward by Mr. Clarkson in the defence—*No general rules can be applied to cases of this sort. Each case must be decided by the peculiar facts which accompany it.*

Enough has, we think, been adduced to show that the "consciousness of right and wrong theory" is wholly unfitted to the present state of jurisprudence, and should be at once and for ever abolished. Next to having bad laws, there is nothing worse than having unsound legal dicta; for

under these, the really irresponsible are always exposed to the risk of conviction and capital punishment!

This case will also have another good effect, viz. of rendering it unnecessary for future writers on the medical jurisprudence of insanity to do battle with the theories of a by-gone age. Where the present practice of the law is so clear, it is unnecessary to declaim against the principles involved in decisions made thirty and forty years ago, or, except as a matter of history, to trace the progressive improvements in our criminal jurisprudence in relation to the responsibility of the insane. The doctrine of Friedreich, long received in France and Germany, may now be extended to England*.

One important fact connected with this case, worthy of the attention of the practitioner, is the relation between chlorosis and amenorrhœa and an attack of homicidal insanity, a subject which does not appear to have been sufficiently noticed by medico-legal writers. Attacks of pyromania have been frequently attributed to this cause; but there are, we believe, few instances of murder perpetrated under such circumstances.

FEMALES MORE LIABLE TO INSANITY.

IN our own climate women are more frequently afflicted with insanity than men. Several persons who superintend private mad-houses have assured me, that the number of females brought in annually considerably exceeds that of the males. In a period of forty-six years, there were admitted into Bethlehem hospital, 4832 women, and 4042 men.

A few cases have occurred where the disease being connected with menstruation, and having continued many years, has completely disappeared on the cessation of the uterine discharge.—*Haslam*.

* So hat nun auch die neue Zeit eine alte, sich oft nur in geistlosen Formen bewegende Juristerei zu Grabe getragen, und dafür das wahre Dogma geboren, das Gesetzgebung und Rechtspflege ohne Anthropologie und Psychologie nur zu elender Barbarei führen, und dass dem Gesetzgeber, dem Richter, er mag sich auf dem Felde der Criminal—oder Civilrechtspflege bewegen, dem Gerichtsarzte und dem Defensor, genauere psychologische Kenntnisse durchaus uner-

Rebivus.

The General Nature and Treatment of Tumors. By GEORGE MACILWAIN. 8vo. pp. 219. London: Churchill. 1845.

It is certainly something to have the privilege of reading a work which is the repository of even a single new idea; and yet, after all, it is no light task to pursue this promised idea with all the weariness of "hope long deferred," through some sixty or eighty pages in which we meet with only faint glimmerings of the anticipated light, and encounter heavy chapters devoted to the proof that all former ideas upon the subject were mere *ignes fatui*, and all their followers deluded imbeciles. It is an additional grievance to find, through some fourscore pages more, that the idea is stated and re-stated in every form excepting a perfectly satisfactory and tangible one, and that it is illustrated, or obscured, at every turn, by long discursive episodes upon things in general, by unsatisfactory statements of faint proofs, by details of long cases—not—in illustration, and by assurances that the author is more anxious that others should determine, in their own practice, the truth of his theory than that they should be satisfied by the statements which he adduces.

The work of Mr. Macilwain does contain one prevailing and leading idea—we think we might add, only one—that is strictly germane to the subject. At the expense of our time and patience, we have become possessed of this idea, and acquaint our readers that we have obtained it only by manfully, and with a constancy worthy of a better cause, braving, for their sakes, the laborious course of inquiry of which we have just attempted to give a faint conception.

In justice, however, to the author, we will at once admit that we do not wish to make it appear that this idea of his is a bad one, so far as it goes; we only object to the manner in which it is conveyed (in that ponderous vehicle the book which lies before us)—a manner which

lässlich sind, wenn sie ihre hohe und für die Menschheit so wichtige Aufgabe mit Ernst und Wahrheit lösen wollen.—*System. Handb. der ger Psychologie*, 1.

renders it questionable whether the boon to humanity which it may possibly afford by benefiting his patients, is not, in a great measure, cancelled by the misery he inflicts while enforcing it upon his professional readers.

The author's view appears to be simply this—that nearly all morbid depositions, and new growths forming tumors, occurring in the human body, are consequent either upon the entrance into the system of improper matters—in food or otherwise—which, not being duly assimilated, give rise to morbid products in certain portions of the body, already most disposed, by accidental circumstances, to undergo such change; or upon diseased or defective action in some important part or organ giving rise to morbid derangement in some other part or organ, this latter being, not unfrequently, one possessing a correlation of functions with the first. The disease, he considers, is generally placed in a structure or organ less important than that in which the primary disturbing influence has occurred. From these premises he argues that our treatment should be directed, first, to the prevention of the entrance into the system of any noxious materials, whether by diet or from other sources; and next, to the discovery and correction of disordered action in certain organs, which, although they may have hitherto given no marked indication of disease, may really be in a condition to excite the constitutional derangement which has produced and maintained the tumor. The author conceives that by attention to certain rules (chiefly of a dietetic nature) laid down in this work, tumors, even of a truly malignant kind, may be made to undergo absorption, providing always that the principal viscera are freed from functional disease, and remain (as is sometimes found to be the case) entirely exempt from organic lesion.

It is not our wish to carp at these opinions, even although the evidence which the author has adduced of their sufficiency to lead to the cure of malignant disease is by no means satisfactory. The pathological conclusions, and the plan of treatment, may not be, in their details, altogether new, but the author deserves credit for rendering them in some measure definite and applicable; and practitioners will probably incur no danger, and may produce

some good, by carrying them out under certain restrictions. Still, we cannot excuse the author for making these the nuclei of a tedious volume, in which, attracted by the hope of learning a new method of treating malignant disease, the reader is compelled to wade through an infinity of unnecessary discussions, interspersed with hackneyed illustrations, frequent egotistical allusions expressed and implied, and comments, of by no means a pleasant or conciliatory character, upon the opinions and expressions of others. Had the views been offered in a brief paper, they might have been regarded according to their merits; but, buried as they are in this tome, they can prove of but comparatively little profit either to the reader or the author.

We shall now endeavour to trace out the degree of success the author has derived from applying his views to treatment. At page 180 he says, "That a practice founded upon the views of which he has endeavoured to give a sketch, and principles easily deducible from them, is capable of indefinitely diminishing the number of operations for tumor, his own experience has abundantly convinced him." And again, he writes, "I now began really to try to influence the absorption of malignant tumors, and I believe that I have done it in several instances. I should say as many as ten in twelve, at least." (p. 194.) It might be judged from this vague mode of stating the fact, that in all the cases of malignant disease which have come under his care the author had succeeded in performing a cure in an average of ten cases out of every twelve; but we must do him the justice to say that he never appears to wish to impart any unfair colouring to his statements, and that it is probably not intended that the above construction should be given to the sentence, as he afterwards (p. 208) speaks of "stating the changes which those tumors which *appeared to have*" (the italics are the author's own) "the characters of true carcinoma, exhibited in their progress to absorption, of which he has seen not less than ten or twelve examples." The only cases of malignant disease which the author details, in illustration of his success, are the three following.

The first (p. 194) is that of a woman, æt. 34, whose disease he describes as a

true specimen of carcinoma (of the breast). The patient also suffered from great derangement of the general health. Under a dietetic plan, combined with measures to improve the functions of the viscera generally, and of the skin, liver, and uterus more especially, the "case went on until the tumor had become decidedly loose—that is, more moveable, and the suffering from it very trivial; it was now and then a little uncomfortable, but she was generally easy" (p. 196). Thus far only had the benefit from the system pursued gone, when a departure from the rules of diet prescribed, threw the patient, in a few days, "into a state of terrible suffering," which was relieved by a return to the former plan, but without permanent benefit, as "she died in great agony." The detail of the second case is prefaced by a singular remark. The author observes, "I shall avoid every particularity in its description, because I have not the slightest objection to any one doubting its nature. I would rather lead them to work at the matter themselves; that is the only way to educe similar results, and, what will alone insure continued investigation, similar convictions" (p. 199). It is, however, stated that the patient was a lady, about forty-five years of age, with a "tumor of the breast which had all the history and characters of true carcinoma;" it is also mentioned that "its connections were loose." In a few weeks, under the influence of treatment, the exact nature of which is not stated, certain changes appeared in the tumor; and, in a few months, it entirely disappeared. About a year after this, she again visited the author with a small deposition in the same breast; this was attributed to her having taken to her former diet; but, the treatment being resumed, was followed by the same success. The third case was that of a lady thirty-four years of age, who "had a very hard tumor in the centre and occupying about one-third of the upper lip. It had a very firm and well-defined boundary, was of a circular form, and, though deeply embedded in the substance of the part, was very moveable. The lower surface of the tumor was denuded of its integuments, presenting an excoriated rather than an ulcerated surface. She suffered considerable pain occasionally, and the denuded surface was exquisitely sensi-

tive" (p. 201). The patient was considered to have the general aspect of malignant disease, and appeared much out of health. At first the author perfectly "concurred in the advice given by Mr. Kingdon, (whose patient she was) that as soon as her health was somewhat improved to allow him to remove it." However, upon endeavouring to correct the functions of the liver, skin, and uterus, regulating the diet, and preventing the tumor from being irritated, health was restored, and the morbid growth disappeared by absorption. Mr. Kingdon conceived this tumor to be of a malignant nature. These are all the cases which the author has recorded as evidencing the effects of his plan of treatment in the removal of malignant disease. The first of them goes for very little; its details do not, of course, convey the smallest evidence that the character of the malignant tumor was in any way influenced by the treatment; but merely that the surrounding hardness was removed, and that the pain diminished,—effects which have often before been produced in similar cases by other means. The second case will afford little conviction, because the author has refrained from stating the grounds upon which he considered the tumor of the breast to be carcinomatous; and we know that almost every surgeon has succeeded in procuring the absorption of mammary tumors of rather long standing and of considerable size, by ordinary local and general treatment. The third case is of rather more importance, but it is not convincing. The author and another surgeon considered the enlargement to be malignant, but then it was situated in a very unusual spot for malignant tumors—the central part of the upper lip; it was moveable, which malignant tumors of the lip of that size seldom are, and it appeared to be of rapid growth. It may not have been malignant at all, and, if it was not, then the whole attempt of Mr. Macilwain to prove that he possesses the means of curing malignant disease (so far as the facts contained in this work go) falls entirely to the ground. Even allowing that readers are convinced that the swelling was malignant, their conviction of the efficacy of the author's therapeutic measures must rest entirely upon the evidence afforded by a single

case, for the others, most assuredly, convey no proof whatever.

As the author was determined to write a book upon this subject, his pages might have been far more profitably occupied by minute details of the eight or ten other cases of "tumors which appeared to have the characters of true carcinoma," in which he believes he has succeeded in effecting a cure, than by inapposite remarks upon pulmonary refrigeration, medical literature, medical corporations, and lecturers on surgery;—but we have invariably noticed that those who profess to have discovered cures for diseases hitherto considered incurable, are always profuse in their arguments, but often extremely chary of their facts.

We seldom like to remark upon the style of medical writings, because, provided the subject is valuable, medical men are not always expected to have either the power or the leisure to express their written opinions with the terseness and elegance of professed literary persons; but, as the author appears to be rather severe upon the expressions of others (p. 7), we may quote one or two instances (from a multitude of a very similar character which occur in the book) to prove that this specimen of his writings, does not altogether deserve a place among the most classical of our medical works. Take the following, for instance:—"The original cause of no tumor can possibly reside in itself" (p. 22). "He was directed to speak as little as possible, which was the only local application" (p. 101). "With large districts of skin exposed" (p. 148). "I then advised him to pursue a particular plan of diet, which chiefly consisted of endeavours to give his stomach exceedingly little to do at a time, and to spread it over as large a surface as we could by previous careful comminution" (p. 93). Now, in this last sentence, we have confusion thrice confounded, for whether it is "the plan of diet which chiefly consisted of endeavours"—the "exceedingly little to do"—the stomach, or an unknown something of which no direct mention is made, which was to be spread over as large a surface as possible,—it would be hazardous to attempt to determine except by conjecture! In the following sentence also it is difficult to decide whether the phraseology or physiology be the more

singular. "We not only observe that extremely important and bulky organs are almost wholly employed in carrying out charcoal from the body, but organs whose functions are otherwise specially directed all eject also an abundance of this material" (p. 112); and again "that every organ being more or less engaged in carrying out charcoal, we ought to get rid of an enormous quantity" (p. 113):—undoubtedly we should, if all this took place. This doctrine appears to us to be so questionable, that rather than venture to announce it in the above manner, we would even allow ourselves to be led into perpetrating the assertion, so much abhorred by the author, that a tumor has been known to "disappear *spontaneously*" (p. 7). In conclusion, we must observe that we have not derived that satisfaction from the perusal of this work which we had been led to anticipate.

Hospital Reports.

WESTMINSTER HOSPITAL.

Cases treated in the Westminster Hospital,
by BENJAMIN PHILLIPS, F.R.S. Assistant-Surgeon.

Diseased testicle.—Extirpation.

THOMAS WARNER, æt. 26, a coachman, was admitted into St. Matthew's ward, Feb. 19th, with diseased testicle.

The history of the case was as follows:—Two years ago, while riding without a saddle, the testicle was jolted upon the withers of the horse. The injury occasioned a good deal of pain and faintness at the time, soon followed by swelling, and leeches were applied to relieve it. Most of the pain, and much of the swelling, gradually subsided, but enough remained to induce his master to request Mr. White to see him. He found still some pain, and the body of the testicle seemed about double its natural size. Antiphlogistics, counter-irritants, and alteratives, were successively employed, Mr. White seeing him from time to time. After a while, a steady though gradual enlargement of the tumor was observed, which nothing controlled. There was some pain in the small of the back, but the spermatic cord continued healthy.

On his admission into the hospital, his appearance indicated ill health, but whether from the condition of the testicle or from causes independent of that, was less evident. There was some emaciation, and great

pallor of the surface; but there was no clear evidence, beyond a little irritability of the bowels, that either the cerebral, the thoracic, or abdominal organs, were in a morbid condition. The tongue was tolerably clean, and the pulse moderate in frequency, though deficient in power.

On further investigation into the cause of his pallor, there was no sufficient reason for thinking it was owing to the disorder of the testicle, for the pain was not considerable, and the disease did not appear to be malignant; but it was admitted, that although not accustomed to get drunk, his occupation, that of driving his master to public-houses for orders, subjected him to the temptation of a glass—it might be beer, wine, or spirits—at every place of call, until, in the course of the day, it frequently happened that from ten to twenty glasses of different liquors were drank.

The tumor of the serotum was larger than a large clenched fist, and there was some obscurity about the diagnosis. Its surface was smooth and elastic, its form was pear-like, and the cord was soft and apparently healthy.

Feb. 24th.—A consultation was held on the case, and it was determined to proceed to operation, but as there was some difference of opinion as to the nature of the tumor, it was arranged that the operation should be commenced by an exploratory puncture, and that the further steps should be governed by the result.

Mr. Phillips passed a grooved needle into the serotum, and a brownish serous fluid escaped. A small trocar was then passed, and between three and four ounces of similar fluid came away. The bulk of the tumor was not much diminished, and a certain feeling of elasticity was preserved. An incision was now made along the tumor, extending from a little above the abdominal ring to the bottom of the serotum; but although the incision was freely made, the cavity of the tunica vaginalis was not exposed. Before proceeding further, a puncture was made at a very elastic point, but nothing escaped. The incision being continued at that point, a cavity was exposed which contained nearly four ounces of somewhat discoloured coagulum, and which seemed to be situated under the tunica albuginea; and along this portion of the tumor the cavity of the tunica vaginalis was obliterated, and the substance of the testicle was much condensed. Taking into account the dense induration and hypertrophy of the testicle, the long standing of the disease, and the other circumstances already alluded to, it was decided to proceed with the extirpation of the organ, which was accomplished without difficulty. To guard against the fancied risk of retraction of the

cord, a tenaculum was passed through it, the section was made, and a single small artery tied. The parts were simply laid together, and the patient put to bed. In the evening, the upper part of the wound was secured by sutures; the lower part was left to itself.

To have Liq. Opii Sed. ℥xx. if sleepless or in pain.

23d.—Had slept well without the opium. The wound was in a satisfactory state. At the most depending part there was a point about the size of half-a-crown, which appeared like ecchymosis.

To have a poultice laid upon the point, and to have, at bed-time, Ex. Col. C. gr. iv. Ex. Hyoscyami, gr. j.

24th.—Bowels not relieved. Tongue clean; pulse quiet. The point on the serotum looks to-day more like a slough, but it is by no means clear.

To have Ol. Ricini, ʒss. Tinct. Sennæ Co. ʒi. 4tis horis, until the bowels are relieved; then to have 4 oz. porter every three hours, unless any counter-indication occur.

25th.—Has had little sleep. The point on the serotum is clearly a slough. Pulse quick: tongue pretty clean.

Sol. Morphine Mecon. ℥x. h. s.

26th.—Has had a good night, but is low. Tongue drier. Pulse small. A slight blush around the wound. Tendency to diarrhœa. No abdominal tenderness.

To have Fish, and 4 oz. of Port Wine.

27th.—Bowels still relaxed. Tongue drier, but pale. Pulse weak. No epigastric or abdominal tenderness. No sickness. Blush about the wound extending. Slough beginning to be detached.

To have Sp. Ammon. A. ʒss. Pulv. Kino Comp. ijss. Conf. Arom. ʒss. Inf. Caryoph. ʒjss. ter die.

28th.—Diarrhœa unabated. Some nausea. Tongue a little brown, and reddish at the edges. No tenderness on pressure. Blush about the wound extending.

To have Acid. Hydrocyan. ℥iv. Potass. Carb. gr. vj. 6tis horis. Rice Milk, and 4 oz. of Brandy, instead of Port Wine.

March 1st.—More signs of gastric irritation. Pulse 82. Tongue getting redder, and slightly glazed. No tenderness in the epigastric or abdominal regions on pressure. Diarrhœa somewhat checked. Blush about wound much abated. Slough detached.

To have a mustard plaster laid on the epigastrium. To continue other means.

2d.—More sickness. Tongue more

glazed. Pulse quicker, 90; no tenderness on pressure.

Acting upon the evidence furnished by the tongue, rather than upon any other sign, it was determined to treat it as a case of gastro-enteric inflammation. It was not deemed safe to bleed.

To take Hydr. Chloridi, gr. j. Opii, gr. ss. 6tis horis.

The gastric disease did not abate; the emaciation increased rapidly, and on the 8th he died.

No opportunity of making a postmortem examination was afforded.

REMARKS.—The matter of interest in this case was its comparative obscurity. The impression produced on some persons was, that it was hydrocele; but it was not diaphanous, and therefore it was probably hæmatocele. My own opinion all along was, that whatever disease there might be elsewhere, that the condition of the testicle itself was the most formidable feature in the case. It turned out that there were about four ounces of dark serum in the tunica vaginalis; that there was a cavity either in the substance of the tunica albuginea, or between it and the testicle, containing about four ounces of blood, darkish coloured, but semi-transparent, and of the consistency of jelly, not unlike the pulp of a ripe red gooseberry; that there was great consolidation of the proper structure of the testicle, so great, indeed, as to destroy its natural texture; and that there were two masses of unsoftened tubercle, of the size of a horse bean. The question when the blood was extravasated is not easily solved; because, in the course of a few weeks after the accident, the tumor would seem to have been too small to have contained so large a coagulum; and if it did not occur at the time of the accident, when and how did it happen?—for there was no breaking down or softening of surrounding parts. Then, again, the quantity was large, for the part in which it was found.

Another curious point was the slough: it was seen the morning after the operation extending up to the raphé. Was it an evidence of general want of power, or was it that the parts between the incision and the raphé had their supply of blood cut off by the section of the external pudic branches? Then why was it confined to a point not exceeding half-a-crown in size, and afterwards thrown off? It is true, that, between the scrotum and the testicle near that point, the cellular tissue was very much indurated, but I do not know that that accounts for the circumstance.

The occurrence of gastro-enteritis is not a very uncommon feature in such cases. Without the operation, it might not have

occurred, but the powers of life were tried beyond their power of resistance, and the weakest organs were the first to suffer. For years, as a brewer's coachman, he had been accustomed to drive his master on his daily round of calls, and at every house he stopped, he took a glass of something, so that in the course of a day he frequently took from fifteen to twenty glasses of wine, brandy, gin, beer:—the mucous membrane of the digestive system was therefore ready to go wrong from comparatively slight causes; and once wrong, the powers of life had not the energy necessary to right itself.

Strangulated Hernia—Operation.

A. G., æt. 36, was admitted into Northumberland ward, with a hernial tumor, which he could not reduce. The history of the case is as follows:—For some years the tumor existed, but it was reduced, and protrusion was prevented by a truss. During the last six months, however, he has been five times in the hospital, with symptoms of strangulation. In every former case, by means of the warm bath, and ice applied to the tumor, it has been reduced, though in one instance it resisted so long that the operation was decided upon.

The patient is a very powerful man, in robust health. The same measures which had succeeded on former occasions failed on this, although steadily used up to the fourth day. At that time the abdomen was tense, but there was not much tenderness; the tongue was whitish; sickness was constant, but the matter thrown up was merely bilious; the pulse was quick; the countenance good. All means having been tried without effect to procure stools, and the sickness having become distressing, it was determined, after consultation, to proceed to operation. Mr. White performed it. A large incision was made along the tumor, and the different structures were cut through down to the sac, which was dense, and as thick as the tunica albuginea. It was opened, and about four ounces of dark-coloured serum escaped. The gut, of which there was five or six inches in the sac, was extremely turgid and rough. The stricture was relieved so as to allow of the easy passage of the finger by the side of the gut into the abdominal cavity. The gut, however, could not be returned, and the ring was still further enlarged more than once, and much patient and careful manipulation employed before the reduction was accomplished.

No medicines to be administered to-night.

April 3d.—Has had no stool; tongue somewhat more coated than last night; belly rather tense, but no sickness.

To have an enema of Ol. Olivæ, ʒij.; Gruel Oj.

4th.—Bowels were relieved; he is in all respects better.

5th.—There is a blush around the wound; tongue rather more coated.

To have Hyd. Chlor. gr. ijss.; Ext. Col. C. gr. iij. h. n.

6th.—In all respects going on favourably; bowels relieved; tongue less coated.

7th.—Wound less threatening; beginning to discharge. From this time all went on well, and he was discharged cured, May 4th.

REMARKS.—It is a curious circumstance that two cases of strangulated hernia, so exactly similar, and at the same time so unfrequent in their occurrence, should be in the same ward at the same time.

The present patient had been admitted into the hospital five times in the last four months, with symptoms of strangulated hernia. He was a powerful man, in the prime of life, with nothing peculiar in the tumor; he had means to purchase a proper truss, and went to good makers; he did not use any violent exertion in his business, and yet once a fortnight the intestine descended. On two former occasions two days passed before reduction was accomplished, and then it seemed to yield to the use of ice.

On the present occasion we expected it to yield as before, but we were disappointed. As in the former case, it was the non-occurrence of stools, and the constant sickness, which determined the operation. Although four days had elapsed since the descent of the intestine, there was very little abdominal tenderness, the pulse was not much accelerated, and the countenance afforded no indication of peritoneal mischief.

The sac was extremely thick, almost tendinous in its character; it contained full four ounces of light coloured serum; the intestine was greatly gorged with blood, and had a solid rugous flesh-like feel. The stricture was freely incised, so that the finger could be passed by the side of the intestine, but very great difficulty was experienced, as in the former case, in returning the gut. Indeed, Mr. White, with his great experience, had never known an instance of the same amount and kind of difficulty as was experienced in the return of the intestine in this and the former case. In both cases, too, there was the same absence of pressing symptoms, although, from the state of the gut, there could be no doubt that the operation was delayed as long as was consistent with the patient's safety.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Tuesday, May 27, 1845.

DR. GEORGE BURROWS IN THE CHAIR.

Case of Intus-susception, in which the intus-suscepted portion of bowel sloughed away, and was voided by the Rectum.—Recovery of the patient. By S. J. JEAFFRESON, M.B. and L.M. Cantab.; Physician to the Chelsea, Belgrave, and Brompton Dispensary.

THE case was that of a young man, æt. 17, to whom the author was called on the 26th May, 1844. He was labouring under general febrile symptoms; there was an anxious expression of countenance; the abdomen not tender on pressure, but becoming tympanitic. Nothing could be retained on the stomach; the matters vomited had a grass-green appearance. There was painful tenesmus, but no evacuations. Calomel and opium, purgatives of senna, croton-oil, &c. with turpentine clysters, were used up to the 28th, without success. On that day, the author considered that decided symptoms of inflammation of the bowel and peritoneum had set in. The belly was generally tender, especially in the left hypochondrium, where a distinct hard tumefaction was observed. Leeches, fomentations, &c. were used in addition to the other means, but no evacuations took place till the 31st, when there were very copious and offensive discharges from the bowels, and the vomiting ceased. From this date the patient gradually recovered. Copious evacuations took place, charged with gelatinous-looking mucus, and on one occasion a small quantity of blood.

On the 8th June, there was discharged from the bowels what the author supposed to be either a portion of the small intestine, or a cast of it (of coagulable lymph); it was about $2\frac{1}{2}$ or 3 inches in length, and of a tubular form; smelt horribly putrid, and one or two minute points presented the appearance of sphacelus. After this, with some slight interruption, the patient recovered.

The substance voided was examined under the microscope by Mr. Toynbee, who stated that he found cellular tissue, traces of blood-vessels and nerves, and epithelium. Mr. Dalrymple, who also examined it, thought that involuntary muscular fibre might also be detected, but could not speak positively, from the preparation having been placed in spirits of wine for some time.

The author draws attention to one point in the treatment, viz. the abstinence from any active depletion on the 28th, when

symptoms of inflammation had decidedly set in. At this period, he observes, a free evacuation of blood would probably have reduced the inflammatory action, and relieved the immediate sufferings of the patient; but it might also have masked the symptoms, and checked the reparative processes of adhesive inflammation, on which the recovery of the patient depended.

DR. WEBSTER was of opinion with the author of the paper, that cases of recovery after the sloughing away of a portion of the intestinal tube were very rare. He himself, however, had met with a remarkable instance of the kind (in consultation with Dr. Webster of Dulwich) in which twenty-five inches of intestine came away, and the patient recovered. The preparation of the case was in University College Museum.

DR. C. J. B. WILLIAMS could not agree that cases like that detailed in the paper were remarkably uncommon, although they might be rare in the experience of any single individual. Similar cases were recorded in the British and Foreign journals. In tropical climates it was by no means uncommon for even a foot or more of intestine to come away in severe cases of dysentery. It would seem almost as if this were the mode established by nature to effect a cure. He referred to some cases published in a late number of the Transactions of the Medical Society of Bombay, in which as much as two or three feet of intestine were thrown off, and the patient recovered.

DR. BURROWS suggested that any surgeon who had practised in the tropics might give some valuable information on the subject.

MR. FITZMAURICE had practised many years in Ceylon, where severe sloughing dysentery was very common among the native soldiery. Europeans generally escaped this formidable disease. It was no uncommon occurrence for six, eight, or even eighteen inches of intestine to slough away, and yet recovery take place. In the Museum at Woolwich are many preparations illustrative of this fact.

DR. WEBSTER had confined his observations in regard to the rarity of this affection to this country; he knew it was comparatively frequent in tropical climates.

DR. GREGORY referred to a discussion which had taken place in the Society some short time since, on cases of tubular formations expelled from the bowels. The preparation of the present case appeared to resemble those formations, and he should be glad to know in what particulars it differed from them.

DR. BURROWS observed that Dr. Jeaffreson had of course depended on the microscopical examination of the preparation as made by Mr. Toynbee. That examination

detected the presence of epithelium cells, vessels, and involuntary muscular fibres.

On a Systolic Murmur in the Pulmonary Artery, and its Application to Diagnosis.

By EDWARD LATHAM ORMEROD, Scholar of Caius College, Cambridge. [Communicated by GEORGE BURROWS, M.D.]

THE general object of this paper was to show the existence of a murmur in the pulmonary artery in certain cases, and to draw some inferences as to the nature of such cases. A murmur was presumed to have its seat in this artery when it could be traced from the left edge of the sternum in a line from the third intercostal space, or a little higher, towards the middle of the left clavicle for about 2 or 2½ inches. To prevent any collusion from alteration of the size or situation of the heart, or confusion of sounds, cases of recent disease only were employed, and of these only such as allowed the murmur in the pulmonary artery to be accurately defined at one time or other.

There were two classes of these; those, namely, in which some or all of the murmurs had disappeared during the progress of the case, and those where no change had occurred so long as the patients continued under observation. The different observations made of these cases were registered in a tabular form, which the nature of the thing did not allow being read to the Society. The numerical analysis of the cases, as far as the murmurs were concerned, will not allow of abridgment, but it was shown that the murmur in the pulmonary artery was one of the earliest to develop itself, and the last to disappear.

The cases were next considered as to the nature of the disease during which the murmur appeared. They seemed generally divisible into two classes, namely, into anæmia, with its kindred maladies, and acute rheumatism. The former class were passed lightly over to allow more time for the consideration of the latter, on which, indeed, the practical interest of the paper rests.

It appears that a murmur in the pulmonary artery may, in an enormous majority of cases, be considered independent of organic disease; and further, that it is possible that the cause producing a murmur in the pulmonary artery may be identical with that producing a murmur in the aorta. It is generally admitted, as far as concerns adults, that murmurs are producible in the direct ratio of the attenuation of the blood, and such attenuation is known to attend acute rheumatism, depletion, and the use of mercury, as well as chlorosis. So there is at least a possible cause of a murmur in operation in these cases. All this, however, is to be viewed with great suspicion, when we remember the frequency with which

the valves of the heart really are affected in acute rheumatism, and consider that there may be an anæmic murmur in the pulmonary artery at the same time as an organic one in the aorta.

A general probability is rarely, if ever, applicable to an individual acute case, so that the recognition of this murmur cannot help us much under such circumstances: but when the acute stage is past, we may find in it a means of discrimination between the general and local effects of disease, the curable and the incurable. The diagnosis between functional and organic murmurs of the heart, so far as the auscultatory signs are concerned, rests chiefly on the variable or fixed situation of those murmurs. The value of this sign turns on its allowing us a more extended field of observation, and for a lengthened period. The acknowledged difficulty of the subject renders us willing to accept the assistance of a sign which is offered, not in disparagement of what we already employ, but in aid of them.

Dr. C. J. B. WILLIAMS remarked that it was hardly fair to sit in judgment on the paper just read until something more than the abstract was before them, and time could be given for a careful consideration of the cases and tables. It appeared that the author assumed, as a fundamental truth, a certain mode of diagnosis between pulmonary and aortic valvular murmurs. This mode of diagnosis had chiefly originated with him, Dr. Williams, and he wished to shew how far extended experience had shown it to be correct, and how far it led him to dissent from the conclusions drawn by the author. If a murmur with the first sound be heard at mid-sternum, and along the upper part of the sternum and also in the arteries of the neck, it undoubtedly must be an obstructive aortic murmur, no matter whether loudest at the left margin of the sternum or at the right; for in different cases it may be heard in each situation according to variable circumstances in the position of the heart, the density of the overlapping lungs, and other matters. But because aortic murmurs often have these completely distinct characters, it did not follow that they should always have them, or that a murmur heard at mid-sternum, and not in the arteries of the neck, must be a pulmonic murmur. When an aortic murmur was weak, it might be heard at the mid-sternum, yet not be loud enough to reach the arteries of the neck, but when made louder by any thing exciting the actions of the heart, then it was heard in the neck, and shewed its aortic origin. This was commonly the case in anemia, in which the loose ill-filled state of the arteries made them bad conductors of sound, and this he suspected would apply to most of the cases de-

scribed by Mr. Ormerod as those of pulmonary murmurs: that they are to be heard over the valve, and in a line of two and a half inches upwards, and to the left, he, Dr. W. could find neither anatomical nor clinical reason for assenting to. He did not, however, deny the possibility of diagnosing pulmonary murmurs, but it must be on other grounds, which he would specify. If a murmur were heard at the mid-sternum, and not below the left breast, or at the top of the sternum, or in the neck, where, nevertheless, the natural double sound of the heart was still heard, that murmur might be judged to be pulmonary. Such a sign he had met with but rarely in cases of heart disease—not perhaps in more than six cases—and this corresponded with the infrequency of pulmonic valvular lesions as found after death. But he had heard it in connection with lung disease, sometimes with a bellows sound, diffused at the root of the lung. In all common cases mid-sternum murmurs had their seat in the aortic valves, and unless Mr. Ormerod could bring further evidence that his were not of this description, he (Dr. W.) would not admit even the grounds of his argument.

Dr. COPLAND had been glad to hear the remarks just made by Dr. Williams, because, some years since, he (Dr. C.) had differed in opinion with him in respect to the value of the situation of murmur in the diagnosis of disease of the heart. The remarks of Dr. Williams bore out his (Dr. C.'s) observations in his Dictionary, under the article "Heart."

Dr. BURROWS observed, that Mr. Ormerod's observations referred chiefly to murmur from functional causes, such as the state of the blood, and not to organic disease. Although structural disease of the pulmonic valves was very rare, functional causes were more common, and might cause murmurs in the pulmonary valves.

Dr. COPLAND observed, that the difficulty of determining the exact seat of the murmur in these cases arose from the heart being liable to be displaced from various causes.

Dr. WILLIAMS said, that the only two common causes of what were called functional murmurs, were a thin state of the blood, and inflammatory irritation of the orifice of the heart. Each of these would operate more on the aortic than on the pulmonary orifice. Thinness of blood would take effect at both orifices, but most at that orifice through which the gush of blood was most forcible, and that was the aortic. Inflammatory irritation would take most effect at the aortic opening, not only for the same reason, but also because inflammation there was so much more common than in the pulmonic orifice.

Dr. THEOPHILUS THOMPSON considered that some of the arguments in the paper were liable to a source of fallacy; inasmuch as aortic murmurs might be sometimes so peculiar as to lead to the supposition of their originating in the pulmonary artery. In support of this, he referred to the case of a young woman whom he had occasionally seen during the last three or four months, and in whose chest a murmur was audible between the base of the heart and the clavicle. It was not heard over the carotids or right side of the sternum, but was most distinct in the second intercostal space an inch or more to the left of the sternum. It was thought at first to depend on some cause interfering with the arch of the aorta, but other symptoms contradicted this opinion, and the murmur soon after disappeared, being suspended by the sound of the passing respiration occasioned by a large imperfectly filled cavity in the lungs. After death the heart was found situated higher up than usual. It was healthy, as were the arteries, in every particular. There was a cavity near the apex of the left lung, and considerable deposit of lymph on the pleura, especially where that membrane was in contact with the pericardium. This case illustrated the difficulty of determining with precision whether a murmur, from whatever cause occasioned, originated in the aorta or in the pulmonary artery.

Mr. ORMEROD said, that in his cases the murmurs were certainly not in the aorta. If not in the pulmonary artery, where were they? The situation of the pulmonary artery allowed its murmurs to be heard as clearly as did that of the aorta; that such murmur could be heard was proved in the only two cases of disease of the pulmonary valves with which he was acquainted; in these cases, a correct diagnosis had been formed by following the rules laid down by Dr. Hope. One of these preparations was in St. Bartholomew's Museum, the other in that of the University of Cambridge.

Dr. WILLIAMS considered that Mr. Ormerod had not answered the objections he had made to the seat of the murmurs in the cases.

Mr. ORMEROD remarked, that the cases only could be judged of by a careful examination of the recorded facts. He believed all sources of fallacy had been avoided. It had been found in all the cases, that a murmur could be heard in the situation described, and the position of the apex and signoid valves had been carefully ascertained.

Dr. KINGSTON said, that in determining on the exact locality of a murmur in the chest, it was necessary to take into consideration the history of the case, as well as the locality and character of the murmur. Characteristic differences existed between affec-

tions of the right and left side of the heart. Thus, the previous occurrence of rheumatic inflammation favoured the idea of disease of the left side, the previous occurrence of chronic disease of the lungs made it probable that the murmur depended on dilatation of the heart's right orifice, produced by obstruction to the discharge of their blood into the lungs. In forming our diagnosis, we must also take into account the condition of the pulse, the carotids, and the jugular.

Dr. BURROWS would remind the Society that Mr. Ormerod did not attempt to lay down any rule with regard to the diagnosis of diseases of the right side of the heart. He (Dr. B.) had been rather surprised that Dr. Williams had found a difficulty in deciding on the presence of a murmur at the orifice of the pulmonary artery. This might be somewhat difficult in the more advanced stages of disease, but in recent cases, like those detailed in the paper, it was sufficiently easy. He believed that in these cases it had been shown that the murmur was in the pulmonary artery. He had found, in cases of rheumatic fever, a murmur at the orifice of the pulmonary artery not previously described. He thought the paper a valuable one.

Dr. TAYLOR considered that Dr. Williams had scarcely done justice, in respect to the seat of the murmur, to one of the circumstances mentioned in the paper as having occurred in several of the cases detailed. It was stated that a murmur was heard from the left side of the sternum over the base of the heart to the extent of two and a half or three inches, in a line down from that point, to the middle of the left clavicle. Now, if this murmur were in the aorta, the fact of its being heard so far along the arch of the vessel rendered it probable that it would be loud enough to be heard at the same time in other arteries of the neck. If it were seated in the pulmonary artery, when we remembered the direction of that vessel, and its deep course in the chest beneath the arch of the aorta, we should, perhaps, see reason to think that a murmur which could be heard in this vessel so far to the left of the sternum must have been so loud, that if it had originated in the aortic valves it must necessarily have been transmitted into the vessels of the neck at the same time. He quite agreed, however, with Dr. Williams, in opinion, that the circumstance of a murmur being heard at the middle of the sternum, without at the same time being heard in the neck, did not *necessarily* prove that it was not seated in the aortic valves. He offered no opinion on the diagnosis of the cases detailed, which required to be carefully examined. He might observe, that in the course of some years he had never yet met with a murmur which was proved to have its seat

either in the valves of the pulmonary artery, or in the tricuspid valve. He had seen disease of these valves after death, which might have given rise to such a murmur, but the heart had not been examined during life.

Medical Intelligence.

LEEDS MEMORIAL.

To the Right Honourable Sir James Graham, Baronet, Secretary of State for the Home Department.

Memorial of a Public Meeting of the legally qualified Practitioners of Medicine residing in the Borough of Leeds,

Sheweth,

That, whilst your Memorialists regret that you should have found it expedient to recommend the grant of a Charter of Incorporation to the General Practitioners, they nevertheless regard the Bill (as amended by the Committee), for regulating the Profession of Physic and Surgery, as a measure of vast importance to the future well-being of the profession, and earnestly hope you will persevere in your endeavours to obtain for it the sanction of the legislature during the present session of parliament.

That the Provisions of the Bill, which your Memorialists regard with the greatest interest, are—the establishment of the Council of Health—the institution of one common portal for the entrance of all future members of the Medical Profession; the adoption of a more advanced age for their admission; the requirement that all persons who shall hereafter enter the Profession of Physic and Surgery shall have been engaged at least five years in the study of Medicine; and the Registration of all Medical Practitioners.

That they regard those Provisions of such importance, that they are unwilling to occupy your attention by referring to some details of the Bill which they hope to see modified in its progress through the Committee.

That your Memorialists again most respectfully desire to tender to you the expression of their gratitude for the attention which you have devoted to the interests of the Medical Profession.

Dated second of June, one thousand eight hundred and forty-five.

JOSEPH PRINCE GARLICK, *Chairman.*
GEORGE BULMER, *Secretary.*

PNEUMATIC ENEMA APPARATUS.

We are desirous of calling the attention of our readers to a newly invented Enema Apparatus, made by Philp and Wicker, of

St. James's Street. We have had an opportunity of inspecting this instrument, and to those who are in the habit of employing an apparatus of this kind, it will be found a great improvement on the old instrument. It consists of a condensing air-syringe, enclosed within a cylindrical vessel, into which the enema is put, the syringe being unscrewed and removed for that purpose. At the lower part is the tube, commanded by a stop-cock. On raising the piston and re turning it, the valves are so arranged that a quantity of air is forced into the vessel; and, if the stop-cock below be open, an equal quantity of liquid is thrown out. Each stroke of the piston being equal to an ounce of liquid, the exact quantity of enema employed is at once determined. The air may be condensed in the vessel to any degree before the apparatus is brought to the bedside of the patient; and the opening of the stop-cock ensures a continuous flow of the liquid, the force being entirely under the command of the operator. No liquid can at any time escape from the containing vessel, or enter into the syringe: it is the elasticity of the condensed air which is the acting power, and not the mechanical descent of the piston. Owing to this, no air can ever be thrown up with the liquid. The instrument can be easily cleaned, and appears not likely to get out of order. There is no reason why a principle of this kind should not be applied to the stomach-pump.

Correspondence.

VISION THROUGH A PIN-HOLE.

To the Editor of the Medical Gazette.

SIR,

DR. JAGO, in his ingenious communication on "Points in the Physiology and Diseases of the Eye" (*MED. GAZ.*, Vol. xxxvi. p. 62), says, "Physical writers on optics, as far as I have been enabled to refer, do not notice magnifying by a pin-hole at all." May not the reason be, that they do not believe any real magnification of an object to be produced by looking through a pin-hole? Henle and Dr. Jago are of opinion that there is; but what is the proof?

The author of the article "Microscope," in the Penny Cyclopædia, says—"Take any minute object, a very small insect, for instance, held on a pin, or gummed to a slip of glass; then present it to a strong light, and look at it through the finest needle-hole in a blackened card placed about an inch before it. The insect will appear quite distinct, and about ten times larger than its natural size. Then suddenly withdraw the card, without disturbing the object, which

will instantly become indistinct and nearly invisible. The reason is, that the naked eye cannot see at so small a distance as one inch. But the card with the hole having enabled the eye to approach within an inch, and to see distinctly at that distance, is thus proved to be as decidedly a magnifying instrument as any lens or combination of lenses."

The last sentence of the paragraph might perhaps lead one to suppose the author to have adopted the view held by Henle and Dr. Jago, that there is a real magnification effected by the pin-hole; but on looking into the previous paragraph we find that this is not the case, but that he attributes the improvement in vision produced by placing the object in a focus of a simple microscope, as well as that which is effected by looking through a pin-hole, to the same cause; viz. the nearness of the object to the eye. "The glasses," says he, "applied to the eye during the approach of ten inches to one inch, would have done nothing more than had been previously done by the eye itself during the approach of fifty feet to one foot. In both cases the magnifying is effected really by the approach, the lenses merely rendering the latter periods of the approach compatible with distinct vision."

The very same view of vision through a simple microscope and through a pin-hole is to be found in Smith's "Optics," Mackenzie's "Physiology of Vision," and most optical authors, the magnifying effect being always attributed merely to the diminished distance at which the object is viewed.

"A minute object," says Smith, "seen distinctly through a small glass by the eye put close to it, appears so much greater than it would do to the naked eye, placed at the least distance from whence it appears sufficiently distinct, as this latter distance is greater than the former; for, having put your eye close to the glass, in order to see as much of the object as possible at one view, remove the object to and fro till it appears most distinctly. Then, conceiving the glass to be removed, and a thin plate, with a pin-hole in it, to be put in its place, the object will appear distinct, and as large as before, when seen through the glass, only not so bright."—*Complete System of Optics*, p. 37.

"If we bring a pin-hole in a card before the eye," says Mackenzie, "a small object held near the eye appears much clearer, because the hole, by permitting only the central or least diverging rays of each pencil to pass, diminishes the magnitude of the circles of dissipation on the retina, and thus ensures a distinct impression. The image on the retina is not enlarged; but, however small the real distance of the object, it seems removed, when viewed in this manner, to the

distance of seven or eight inches, or to be brought within the limits of distinct vision. This affords the only explanation why an object appears magnified, and the means by which we can ascertain the degree in which it appears magnified, not only on being viewed through a pin-hole, but when seen through a single microscope. Thus, if the object is really half an inch from the eye, and appears as if it were seven inches distant, its diameter will seem enlarged in the same proportion as its distance, that is, fourteen times."—*Physiology of Vision*, p. 285.

In opposition to the general opinion, Henle and Dr. Jago maintain that there is a real magnification of the image on the retina of objects seen through a pin-hole, beyond what the approximation of the object to the eye would produce. In common, perhaps, with some of your other readers, I should feel obliged to Dr. Jago if he would state the grounds for such doctrine.—I am, sir,

Your obedient servant,

A MEDICAL STUDENT.

Belfast, May 23, 1845.

Selections from Journals.

MEDICAL JURISPRUDENCE.

ON THE DETERMINATION OF THE PERIOD OF INTERMENT OF EXHUMED BONES. BY DR. SCHUBERT, OF DRAMBURG.

ON the 27th of November, 1843, I was requested to examine a human rib which had been dug up in a cellar, and to give an opinion whether it had been buried for a longer period than twenty years. The question arose in relation to a crime which it was supposed had been committed some time before. The rib, which was found with other bones in a somewhat damp soil of sand and chalk, had belonged to an individual about twenty-one years old. According to Wagner (*Jahresber über die pract. Unterrichts, Austalt u. s. w. S. 31*), the body of an adult, buried in a common coffin, is, with the exception of the skull and thigh-bones, and sometimes the ossa humeri, entirely destroyed in a period of thirty years. The same author states that putrefaction takes place most rapidly in a sandy soil. The rib given to me for examination could hardly have been buried for twenty years. The old house, on the site of which the cellar was made, had stood for upwards of a century; and within the last thirty years had been inhabited by a man still living. While considering the difficulty of the question, for the solution of which I found but little assistance in the writings of Giuntz, Most, Burdach, Orfila, and Lesueur, on the exhumation of the dead, a second well-preserved

rib, evidently belonging to a very old woman, was discovered in the same spot; and shortly afterwards another, belonging to a child about two or three years old. The vertebrae of this child were also found in good condition. According to Wagner, it was impossible that the bones of so young a child could have been preserved in the ground for a period of twenty years. Subsequently eight more ribs were dug up, and some old people then remembered that in the building of two neighbouring houses, many years before, five other ribs had been found. Those which were now disinterred were found lying in one row, the bodies being with the face towards the east; and I felt satisfied, on attentively examining the locality, that they must have been deposited there before the building of the ancient house already referred to. The place had probably been formerly used as a grave-yard. From the chronicle of Dramburg, it was certain that this must have been at least as far back as the beginning of the seventeenth century; and therefore this exhumed rib must have been lying *two hundred years* in the ground! — *Casper's Wochenschrift*, Jan. 1845.

[REMARKS.—This extract shows that it is of some importance, in a forensic view, to determine the age, sex, and, as far as possible, the probable period of interment of exhumed bones. The determination of the identity of bones is not attended with much difficulty. Most medical men could distinguish ribs according to age, and probably according to sex. The ribs of animals could also be easily distinguished from those of man; but strange mistakes arise on this subject among non-professional persons. If the osseous relics of the saints in Spain and Italy were closely examined, we believe that some would be found to have more ribs and vertebrae than are commonly assigned to the human subject; and we recollect seeing in Italy, among some sealed up relics of this description, a very suspicious-looking rib which had probably belonged to a sheep! There is a private museum in this country, near an ancient Roman castrum, where we saw the leg-bone apparently of a dog, labelled as the bone of an ancient Roman! An anatomist would soon detect errors of this description. It is, however, more difficult to assign a period for the entire destruction of the skeleton, or its different parts. Wagner's statement, of its decomposition in thirty years, is opposed to the most common observation. We were once present at the opening of the grave of an individual whose body had been interred thirty-four years before. A very perfect skeleton of the deceased, entirely disarticulated, was found stretched out in the position in which the body had lain—at the bottom of the grave, which was of sand and chalk. Decompo-

sition had only gone on in the vertebrae and base of the skull. The lower jaw was so hard that it required a sharp blow of a hammer to break it. We have also seen the os humeri of a female well preserved, whose body must have been buried many centuries. In short, it is impossible to assign a period for the decomposition of bone. Where we meet with several bones belong to persons of different ages and different sexes, the probability is, not that a murder has been committed (the common suspicion) but that they have been placed there in the regular course of interment. In christian countries, and under christian burial, the skeleton will commonly be found lying east and west; the feet being to the east.—ED. GAZ.]

THERAPEUTICS.

CASE OF HEMIPLEGIA—EXCESSIVE DOSES OF STRYCHNIA—RECOVERY.

A YOUNG woman, 29 years of age, exposed during her early youth to the greatest misery, living in a damp house, and reduced almost to a skeleton, gradually lost the power of motion and sensation in the left arm and leg; in which, at the same time, she experienced dull pains, influenced by the changes of the weather. After remaining in this state thirteen months, she became a hospital patient under M. Ballotta. Good nourishment, wine, the use of ferruginous preparations, and of stimulating friction along the spine and affected limbs, restored these to their natural colour. The paralysis, however, continuing, she was ordered to take, in pills, the sixteenth of a grain of strychnine a day, increased successively, at intervals of four days, first to one-eighth, then one-half, and at length one grain. Some obscure involuntary movements were then noticed in the limbs, and a sensation of warmth was felt. M. Ballotta then raised the dose to two grains a day. At the end of four days, the medicine having been well borne, was increased to three grains a day; and this dose was continued for six days. Fornication then appeared in the limbs, the temperature of the skin was raised and covered with sweat. The limbs were affected by tetanic convulsions. At length the power of voluntary motion was restored, and the dose was diminished according to the same scale by which it had been increased. At the end of two months the woman had taken seventy grains of strychnia; and then left the hospital with the perfect use of her limbs.—*Gazette Medicale*, Mai 1845.

[REMARKS.—Admitting the strychnia here used to have been pure, this case furnishes an extraordinary example of the effect of habit in reducing the power of that medicine. Perhaps, also, something may be set down to the diseased condition of the ner-

vous system. Dr. Christison mentions an instance where the dose of strychnia used medicinally, in the case of a man aged 46, was gradually increased to a grain and a half. But the first dose caused anxiety and excitability, in three hours stupor and loss of speech, and at length violent tetanic convulsions, which proved fatal in less than four hours. Signor Ballotta's patient was more fortunate!—*ED. GAZ.*]

NEW MEDICAL BOOKS, ENGLISH AND FOREIGN,—For May.

[Printed in London, unless otherwise stated.]

Contributions to the Medical History and Treatment of Sexual Diseases. By J. Hey Robertson, M.D. 8vo. 4s. cloth.—The Physiology of Digestion considered with relation to the Principles of Dietetics. By A. Combe, M.D. 5th edition, revised and enlarged, 12mo. 2s. 6d. sewed.—Pulmonary Consumption successfully treated with Naphtha: with Cases from other medical men in support of that Treatment; and an Appendix, shewing the utility of puncturing Tuberculous Cavities, as an adjuvant in the cure of Phthisis. By J. Hastings, M.D. 2d edition, revised and enlarged, 8vo. 6s.—The Physiological Anatomy and Physiology of Man. By R. B. Todd, M.D.; and Wm. Bowman, F.R.S. (2 vols.) Vol. 1, 8vo. with woodcuts, 15s. cloth.—Seven Lectures on Somnambulism. Translated from the German of Dr. A. Wienholt: with a Preface, Introduction, Notes, and an Appendix, by J. C. Colquhoun, Esq. Advocate. 12mo. Edinburgh, 4s. boards.—On the Nature, Causes, and Treatment of Acute Hydrocephalus, or Water Brain-Fever. By T. Smith, A.M. M.D. Post 8vo. 5s. 6d. cloth.—A Physiological Essay on the Thymus Gland. By J. Simon, F.R.S. 4to. 21s. cloth.—Dr. Latham's Clinical Lectures on Diseases of the Heart. 8vo.—Chelius's Surgery. Translated by J. F. South. Part Second.—Dr. Badham on Insect Life.—Dr. Budd's Report on Anatomy and Physiology.—Twiss's Tests of a Thriving Population.—Some Observations on Organic Alterations of the Heart; and particularly on the beneficial employment of Iron in the Treatment of such cases. By S. Scott Alison, M.D. Fcp. 8vo. 2s. 6d.—On Cataract, and its appropriate Treatment by the Operation adapted for each peculiar case. By C. G. Guthrie. 8vo. 4s.—Practical Notes on Insanity. By J. B. Steward, M.D. Post 8vo. 4s.—The Philosophy of Female Health; being an Enquiry into its Connection with, and dependence upon, the due performance of the Uterine Functions: with Observations on the Nature, Causes, and Treatment of Female Disorders in general. By S. Mason, M.D. 8vo. 3s. 6d.—An Essay on Marriage; being a Microscopic Investigation into its Physiological and Physical Relations: with Observations on the Nature, Causes, and Treatment of Spermatorrhœa, and the various Disorders of the Procreative System in Men. By R. Dawson, M.D. 8vo. 3s. 6d.

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Correspondenzblatt, medicinisches, des württemberg. Aerztlichen Vereins für 1845. 40 Nos. 4to. Stuttgart, 13s. 6d.—Dieffenbach, Operative Chirurgie. Vol. 1, 8vo. Leipsic, 24s—Kreyssig, die Krankheiten des Herzens. 8vo. Berlin. 8s.—Noack and Trinks, Handbuch der homöopathischen Heilmittellehre. Pt. 1 to 10, 8vo. Leipsic, 30s.—Zeitschrift für Geburtkunde. Herausg. von Busch, d'Outrepont, Ritgen u. von Siebold. Vol. 17, 8vo. Berlin, 11s.—Annalen der Staatsarzneikunde. Herausg. von Schneider, Schürmeyer, Hergt. 10^{ter} Jahrgang, 8vo. Freiburg, 16s.—Central-Archiv für die gesammte Veterinär-Medicin. Herausgegeben von Kreutzer. 1^{er} Jahrgang, 8vo. Augsburg, 11s.—Vierordt, Physiologie des Athmens. 8vo. Carlsruhe, 7s.—Wörterbuch. Encyclopædisches, der medicinischen Wissenschaften. Herausg. von Busch, Dieffenbach, Müller u. Andern. 33^{er} Band, 8vo. Berlin, 17s. 6d.—Lessing, Erkenntniss und Heilung der Geschwüre. 3d Edition. 4to. Berlin, 4s.—Viszanik, Leistungen und Statistik der Irrenheil, Anstalt zu Wien. 8vo. Vienna, 4s. 6d.—Zeitschrift für Phrenologie. Herausg. von Struve und Hirschfeld. Vol. 3, Carlsruhe, 8s.—Düntzer, F., die Entbindung verstorbener Schwangeren in geburtshilflicher und forensischer Beziehung. 8vo. Cologne.—Goullon, naturphilosophische Ideen, ein Versuch die medicin auf das Grundrincip der Mathematik zurückzuführen. 1^{er} Heft, 8vo. Jena.—Lietzan, F. O., Lehrbuch der speciellen Therapie. Pt. 1. 8vo. Berlin.—Weitenweber, W. R., die medicinischen Anstalten Prags, nach ihrem gegenwärtigen zustande geschiedet. 16 Bd. Prag.—Annalen für die gesammte Heilkunde. Herausgeg. von Holscher und Mübry. 5 Jahrgg. 8vo. Hannover, 16s.—Codex Medicamentarius. 2d edition, 8vo. Hamburg, 11s. 6d.—Fuchs, C. F., über das Emphysem der Lunge. 8vo. Leipsic, 6s.—Gluge, G., Atlas der Pathologischen Anatomie. Parts 1–8, fol. Jena, £3. 7s.—Fwerson, Th. J., Enchiridion der Geburtkunde. 8vo. Berlin, 5s.—Vetter, A., Handbuch der Heilquellenlehre. 2d edition, 2 vols. 8vo. Berlin, 32s.—Zeitschrift für die gesammte Medizin. Herausg. von Oppenheim. 10 Jahrgg. 8vo. Hamburg, 32s.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

THURSDAY, May 8th.—John Alfred Graham.—William Borrowes Buller, Haddenham, near Ely, Cambridgeshire.—John Hurd, Bristol.—Charles Beddingfield Wood, Blakenham, Suffolk.—James Northcote Vinen.—Valentine Hutchinson, Newcastle-on-Tyne.—John Keurick Lewis, Wrexham, North Wales.—John Hayball Paul, King William Street, London.—Charles Sturges Jones, Milton Keynes, Newport Pagnel.—Edward Schaw Protheroe, Dolewilliam, Carmarthensh.—John William Mountjoy.—William Thornicraft Hardern, Macclesfield, Cheshire.

LONDON MEDICAL GAZETTE.

Lectures.

LECTURE

Delivered at Guy's Hospital,

By BRANSBY B. COOPER, F.R.S.

Professor of Surgery, &c.

Fracture of the Spine.

GENTLEMEN,—It is my intention to say a few words to you to-day about two cases now in the hospital: the first is that of

J—H—, of dark complexion and spare habit, æt. 35, a bricklayer by trade, who was admitted under my care at half-past 12, on May 21st, 1845, into Accident Ward No. 15, having fractured his spine. He has lived temperately; is married, and has four children. On the day of his admission, he fell backwards off a scaffold to the ground, a distance of fourteen feet. He was picked up senseless, and conveyed home, and from thence brought to the hospital. When admitted, the surface of the body was pale, but the extremities warm. The whole of the body below the umbilicus was completely paralyzed, and no reflex movements were produced by tickling or pricking the soles of his feet. On examining his spine, the sixth dorsal vertebra was found projecting, and slight pain was experienced upon pressure. He breathed with difficulty, and complained of a shooting pain through his chest. In the afternoon, Mr. Coek and Mr. Hilton made extension and counter-extension, and pushed the projecting spinous process of the displaced vertebra back into its place. Soon after this he felt easier.

22d.—Has dozed a little during the night; his water was drawn off this morning. There has been no increase of pain.

24th.—Pain in back worse, otherwise much the same; has had no alvine evacuation yet. He was ordered six ounces of port wine per diem, and an opiate every night.

25th.—Had an injection of house-medicine administered.

26th.—Has passed his feces involuntarily. Complains of more pain to-day; perspires freely above the paralyzed part; urine acid.

27th.—Complains of an excruciating pain shooting through the chest in the direction of the diaphragm, of a numb sensation in the right leg, and also of a pain shooting from the middle of the fore part of the right fore-arm up to the axilla. Countenance suffused. Skin hot, and covered with a copious perspiration above the paralyzed part. Lower extremities warm and dry. Sleeps well. Tongue furred on either side; pulse 60, small and weak; urine neutral.

28th.—1 P.M.—Pulse 84, almost imperceptible at the wrist; perspiration still very copious. Expresses himself as feeling easier, and is now enjoying some beef-tea. Bladder washed out with warm water; urine beginning to be ammoniacal.

29th, half-past 12.—Has been free from pain all night, and slept well for seven hours. The least motion of his right arm causes very great pain; says his left hand feels numb; skin moist above paralyzed parts, but not now covered with perspiration; temperature of axilla 101° F.; of perineum 98° F.; pulse much the same. Urine drawn off, and bladder washed out; urine loaded with mucus, ammoniacal, and upon cooling a pellicle forms on the surface.

30th.—Says that he feels easier. His urine dribbles away. On washing out his bladder this morning, a quantity of bloody mucus came away. Urine bloody and ammoniacal, restoring litmus-paper reddened by acetic acid.

REMARKS.—Now, with regard to the paralysis in this patient, it is complete: but this is not always the case: for sometimes it happens that there is loss of motion, but sensation remains, and that sometimes to a morbid degree of sensitiveness; in other cases, the reverse occurs, viz. loss of sensation, but not of motion. This, of course, depends upon whether the anterior or posterior columns of the spinal chord are most injured. The spinal chord has a function residing in and peculiar to it, for if a portion be cut off from the brain it will still perform this function, viz. of exciting muscular contraction by irritating the skin; but the limb acted upon is as likely to be thrown in one direction as the other, for having no connection with the brain. It is not under the control of the individual; and Dr. M. Hall says, that if no reflex action, in a paralyzed part, takes place, the spinal chord is bruised, or otherwise injured, below where it is cut off from connexion with the brain, and therefore the prognosis is more unfavourable. Such is the case in this patient. With regard to finding out the exact vertebra broken, you are not always able to tell by examining the spine. The method which I always adopt is this: place each hand widely spread out over each side of the chest; you will feel the ribs above the paralyzed part moved naturally by the intercostal muscles, those below only move according as they are acted on by the descent of the abdominal viscera: in this case the sixth rib appeared to be the last acted on by the intercostal muscles. I confess I think it is a dangerous practice to make extension to attempt to replace the broken vertebra, for you are liable to tear through the spinal chord, and add to the mischief; besides, it

does not necessarily occur in fracture that the paralysis depends on pressure from bone; it may be from blood, or perhaps serum. With regard to the prognosis in this case, it is unfavourable; patients very rarely recover where there is complete paralysis, distended abdomen, suffused countenance, and partial priapism. The danger depends, as to dissolution, and its period, on the proximity of the injury to the brain; you all know that if it is above the fourth or fifth cervical vertebra, that is, above the origin of the phrenic nerve, immediate death is the consequence. I have known a patient having fractured the sixth or seventh cervical vertebra, live six to ten days, breathing solely by the diaphragm.

Now, the first object in the treatment of disease is to prevent symptoms; and secondly, to relieve them by attention to diet, by pharmaceutical means, and, what I wish to draw your attention to, by mechanical means—by surgery. Here, we are sustaining the powers of life by wine and nourishment, and relieving the patient by mechanical means, viz., drawing off his urine, and washing out his bladder. The catheter, in these cases, should always be introduced with the utmost delicacy, for as the patient cannot feel so as to tell you when you are going wrong, you may do much mischief. The principal cause of death, in these cases, is owing to the decomposition of the urine (for the vital functions are not much interfered with); the urine decomposes, causing inflammation of the bladder, which secretes a large quantity of unhealthy mucus, and that also decomposes, increasing the irritation. I do not, however, think we are right in saying that the vital functions are not much interfered with, for look what a large secreting surface—the skin—is deprived of its function; and the effect this has upon the constitution is well known. In the case of burns, if more than one-fifth of the surface of the body is deprived of cuticle, the result is fatal; and we do not know what effect the stoppage of secretion from so large a surface may produce on that of the lungs and kidneys, and thus hasten the fatal termination.

Punctured Wound of the Abdomen.

The next case is that of W— G—, a strong healthy young man, æt. 25, a gardener, who was admitted into Accident Ward on May 23, 1845, for a punctured wound of the abdomen. On the day of his admission, he was pushing open a door with the handle of a gardening-knife (the point of the blade being towards his belly); the door being shut, he suddenly thrust himself against the point. It passed through his clothes, and pierced his abdomen close to the left side of the umbilicus, causing a

wound about three quarters of an inch long. It did not bleed much. According to his description, about three inches of omentum protruded, which the surgeon who attended him, failing to return by manual operation, pushed back with a bougie; he then brought the edges of the wound together with plaster, placed a pad of lint over it, and bandaged up the abdomen. When admitted, he only complained of a slight smarting in the wound; otherwise he was very well. The dressing was not removed, but he was ordered to keep quiet in bed, and to be put on low diet.

May 26th.—He has not experienced any pain, or a single bad symptom. The wound was dressed to-day, and found entirely united by the adhesive process. Bowels not opened since his admission.

To take half an ounce of castor oil.

27th. — 12. — Bowels acted on four times by castor oil. Feels in very good health, but was ordered to keep quiet in bed, and upon low diet, for a few days longer.

30th.—Has got up to-day for the first time.

And to-day, 31st, we have just now seen him enjoying his dinner.

Now I have to make some remarks about returning the omentum in cases of its protrusion; in this instance, a concentrated force was employed in order to effect its reduction, but I think some little precaution is necessary in handling so delicate a tissue as a serous membrane. If it has protruded through an opening too small for it to be returned, the usual method is to enlarge the wound sufficiently to allow of its being replaced; but, if it has been so long exposed to external agents as to be altered in its character, and be unfit to be returned into the abdomen, it should be allowed to remain to slough away, or, perhaps, in order to avoid the inconveniences attendant upon a large slough, it may be cut off, and any vessels that may bleed tied, but do not push the ligatures in that case into the abdomen. It might be a question whether any means for the prevention of symptoms were to be adopted in apparently so simple a case; if so, what should be the means? Some may say bleed, but, in my opinion, you only disturb the natural functions by abstraction of blood, and render the patient irritable, and therefore more prone to inflammation. In this case, perfect quietude, and regulation of diet, were the means adopted, and they have proved sufficient. Purging is certainly wrong; for, by increasing the peristaltic motion of the bowels, you interrupt nature in her process of cure, by uniting the omentum to the cut edges of the wound of the peritoneum lining the abdominal walls. This

patient, you observe, was four days without a motion, and even then I ordered only a small dose of castor oil, but it proved sufficient. I fear he is taking liberties with himself, in taking so hearty a dinner to-day, as we have just seen him; for not having been accustomed to animal food for the last week, it is likely to cause reaction, and inflammation may ensue; as I have seen in fractures of the skull, where all has been going on well for some time, and the patient, thinking himself safe, commits some indiscretion, eats some indigestible substance, perhaps, when violent cerebral symptoms have supervened, and have ultimately proved fatal, although the patient, the day before his indiscretion, was considered convalescent.

Removal of a Steatomatous Tumor.

I am now going, gentlemen, to remove a tumor from a woman's shoulder. It is a patient in Martha's ward, and the tumor is a steatoma. Now, the definition of a tumor is "a circumscribed swelling, produced by disease, and differing in its nature and consistence from the surrounding tissues." This is the usual definition of a tumor, but it is not a good one. For instance, a steatoma does not differ from the parts from which it is produced, neither does an exostosis: these are mere hypertrophies. A tumor may therefore be a circumscribed swelling either resulting from disease, or hypertrophy, in the first instance, differing from the surrounding tissues, and, in the second, similar to the structure from whence it arises.

The steatoma was then removed before the class, by the dresser in attendance.

Lithotomy.

On Tuesday, gentlemen, I have two stone cases to operate on, and therefore I may as well say a few words about the operation, in order that you may know what I am about, when I am performing them. Now, there are four steps in the operation, as I perform it; viz. open the perineum, open the pelvis, open the bladder, and take out the stone.

Well, the first thing you do when the patient is laid on the table, is to sound him, and be sure that you feel the stone before you operate. Having ascertained the position of the stone, he is then to be tied up in the usual manner; and it is as well to tell the patient to practice the position, in order that he may become somewhat accustomed to one so unnatural; then pass the straight staff, and give it to an assistant to hold. Then, having examined the perineum, and ascertained the point of junction of the raphe of the perineum with that of the scrotum, place the tip of the forefinger of your left hand upon it, and commence your incision about one finger's-breadth to the left of

it, carrying your knife downwards and outwards to a point midway between the margin of the anus and left tuberosity of the ischium. By this incision you lay open the perineum; next pass your finger into the wound, and feel for the staff in the membranous portion of the urethra, and keeping the bulb out of the way, place the point of the knife in the groove of the staff, and make your second incision through the deep perineal fascia, in the same direction, and to the same extent, as the first. You have now completed the second step, and opened the pelvis: I know my anatomical friends will cavil at this, and say that I have not opened the pelvis; but there is only a slight fascia intervening.

Next, commence your third step in the same place in which you did the second, by again placing the point of the knife in the groove of the staff; and, taking the handle of the latter, in your left hand, from the assistant who has been holding it, depress it, till it is nearly parallel with the handle of the knife. Then push the knife along the groove in the staff, through the prostate, into the bladder, which you will know to have entered, by the resistance offered to its passage ceasing. This is a difficult part of the operation; for if you let the knife slip out of the groove, between the bladder and rectum, much mischief must accrue. You should have the groove of the staff turned a little to the left, in order that your incision through the prostate may correspond with the other incision. Next pass your left forefinger into the bladder, and the staff being withdrawn, feel for the stone. In order that you may not make a larger incision through the prostate gland than is necessary, your lithotomy knife should be of the same breadth as your forefinger, so that it may make an opening just big enough to admit it; and trust to enlarging the opening of the prostate by lacerating it with your finger:—lacerating is an ugly word, gentlemen, but it is a safe one. You have now finished the third step, viz. opened the bladder. All that you have hitherto done is what every good surgeon ought to do without difficulty; but the rest is beyond his control; I mean the fourth step—removing the stone. I have seen the very best lithotomists fail in seizing it, and the patient has been removed to bed with the stone still in his bladder. When you have your finger on the stone, and you introduce the lithotomy forceps along it into the bladder, with the blades of course shut, keep them so, until you have felt the stone with them. Then open them, and, seizing the stone, gently and gradually withdraw it. You should hold the forceps with their flat surfaces looking upwards and downwards, in order that you may be able to open them sufficiently, and also to protect the soft

parts from injury in the abstracting of the stone.

They should also be of a good length : you may ask, are not the common forceps sufficiently long to reach to the fundus of the bladder? Yes, so they are, but when the ends of the blades are at the fundus, those of the handles are at the external wound, so that you cannot open the blades wide enough perhaps to admit the stone. Therefore it is better to have them long, so that the hinge may be in the perineum ; then you will be able to open the handles. These, gentlemen, are the steps of the operation, and I hope now you will be able to follow me, so as to comprehend their precise and ultimate objects.

CLINICAL LECTURE

ON

CASES OF PNEUMONIA*,

Delivered at St. Bartholomew's Hospital,

By DR. GEORGE BURROWS.

THE following case, alluded to in the remarks on Case I., offers a further illustration of Pneumonia accompanied with nervous irritation.

Case of Delirium Tremens supervening at an early stage of Pneumonia.

W. L., a stout man, aged 40, admitted February 17, 1844 : countenance rather anxious ; respirations 36 per minute ; ears of a livid hue ; lips red and dry ; tongue moist ; a thin white fur on the dorsum, with elevated papillæ ; pulse 112, small and compressible ; skin hot and dry. He complains of a pain in the head, and giddiness, pains in his back and limbs ; feels very cold, and frequently shivers ; has slight cough, without expectoration, and has some pain beneath the right breast on deep inspiration. Has thirst and loss of appetite, and passes very disturbed nights, being light-headed, and talking in his sleep. Upon auscultation of the right lung posteriorly, there were heard abundant minute crepitations, together with bronchial breathing and well-marked bronchophony, extending from the inferior angle of the scapula to the base of the lung ; resonance on percussion much impaired. In the upper part of this lung, and throughout the left, clear exaggerated vesicular murmur was audible.

He is a London Dock labourer, of temperate habits (according to his own statement, which proved to be untrue) ; was quite well until two days ago, when, on getting up in the morning, he was seized

with giddiness and pain in the head, felt very faint, and was obliged to go to bed again. He was very thirsty, and shivered frequently. The cough and pain in the chest came on last night. He has been under no treatment. He was ordered—

C. C. infra scap. dextram ad ʒvii . ; Hyd. Chlor. gr. ij. ; Ant. Pot. Tart. gr. $\frac{1}{2}$; P. Opii, gr. $\frac{1}{4}$ in pil. 6ta q. horâ.

In this case of pneumonia, many circumstances, such as the recentness of the attack, the absence of all previous treatment, and the robust frame of the patient, might have tempted me to prescribe a venesection, had not the state of the nervous system appeared to forbid any large loss of blood.

On the following day I was unable to visit the hospital, and the patient was left in charge of the clinical clerk.

18th.—The cupping relieved the pain in the chest ; he passed an uneasy night, talking in his sleep ; his cough was very troublesome. Countenance flushed, expression anxious ; respirations 40. Tongue furred on the dorsum, red and dry at the tip ; pulse 120, small, somewhat sharp ; skin hot and moist ; bowels open ; sputa very scanty, consisting of tawny viscid mucus. Auscultatory signs remain about the same.

V. S. ad ʒvii . ; Repet. Pilul.

After six ounces of blood had been taken, he felt sick and faint ; the pulse became softer and more compressible : two ounces more were taken, when the feeling of faintness increased, and the arm was tied up. He felt relieved in his chest, and could take in a deep inspiration without pain ; he perspired freely. When seen at 8 p.m. (about six hours after the venesection), his countenance was flushed, and his manner excited ; his eyes bright and restless ; the pupils rather dilated, but acting readily under the influence of light. Tongue inclined to dry ; pulse 112, soft ; skin warm and perspiring. He seems irritable, and mutters to himself, but is quite sensible when spoken to ; he is slightly deaf. The coagulum of the blood removed is slightly cupped, but not buffed.

19th.—He was furiously delirious all night, raving and attempting to throw himself out of the window ; he was obliged to be strapped down in bed ; towards morning he had some quiet sleep. To-day his manner is excited ; countenance anxious ; eyes bright and restless. Tongue moist, with a thick fur on the dorsum, red, and inclined to dry at the tip ; pulse 108, full, soft ; skin moist. He is sensible when spoken to ; answers quickly ; says he has no pain ; he mutters to himself, and rambles. Ordered—

Tinct. Opii, $\mathfrak{M}$ xxx. statim. sumend. ; Empl. Canth. lateri dextro ; Hyd. Chlor. gr. ij. cum Pulv. Opii gr. $\frac{1}{4}$ 6ta

* These cases are in continuation of those reported at page 208.

quâque horâ. To have four ounces of wine, and two pounds of beef for beef-tea.

Half-past 8, P.M.—Has had no sleep, and is very excited; skin profusely perspiring. Pulse 112, full, very soft. He was ordered to take immediately Tinct. Opii $\mathfrak{m}$ xxx., and twenty more if sleep was not procured in four hours.

20th.—He had some sound sleep towards morning, but is still excited, and much in the same condition as yesterday. Ordered—

Vini Rubri $\mathfrak{z}$ vj., Pt. Pilul.; Sp. Ammon. co. $\mathfrak{z}$ ss. ex Aq. Mentli. pip. $\mathfrak{z}$ j. 4tâ quâque horâ.

From this date the case resolved itself into one of confirmed delirium tremens; the man was furiously delirious for several days and nights, and it was necessary to keep him strapped down in bed. The continued free use of stimuli, with large doses of opium, was of necessity employed, and no plan of treatment could be directed to the disease going on in the lungs. During this period it was impracticable to ascertain the condition of the lungs by auscultation, and it was only on the 25th that he was sufficiently calmed to allow of being raised up in bed, and auscultated posteriorly. On this day not any respiratory murmur could be heard in the right lung, which was perfectly dull upon percussion. On the left side, a loud rough pleural friction sound was heard over the left scapular region, with a few small crepitations towards the lower part of the lung, where was impaired resonance upon percussion. He was again excited and delirious during the two following days, but on the 29th he had some good sleep, and became quiet and perfectly rational. Upon auscultating him on the 9th of March, air was heard entering the right lung freely, as low as to the middle of the scapular region; below this it was accompanied with small crepitations: there was good respiratory murmur through the left lung, accompanied by a few crepitations at the very bottom. He was allowed animal food, wine and porter, without medicine, from this date to the 30th of March, when he was discharged cured; good respiratory murmur, without morbid sound, being audible throughout both lungs.

REMARKS.—The effects of the abstraction of blood upon this man were very striking. The loss of $\mathfrak{z}$ vj., taken by venesection in the upright posture, caused sickness, faintness, and profuse perspiration. The report of his condition a few hours after the bleeding shows how seriously the nervous system resented this shock, and for several days the man's life was in great peril. I could cite from my own case-books other equally remarkable cases of a similar kind. Indeed,

I have seen patients brought into the hospital with all the symptoms of furious delirium tremens, and when the nervous symptoms have subsided, I have found the patients were suffering from pneumonia, for which they had been largely bled prior to admission.

When symptoms of nervous excitement, or cerebral-oppression, occur in the course of pneumonia, they are always of very unfavourable import. Pneumonia will sometimes set in with oppressive headache, which occasions the patient so much distress that attention may be quite withdrawn from the pulmonary disease until it has made serious advances. It is well known how often an insidious pneumonia goes on in typhus fever, and is overlooked in consequence of the more striking symptoms of cerebral disturbance. Nervous excitement, or actual delirium, may, however, come on in the course of pneumonia, and they are always alarming symptoms. There are two conditions which are likely to excite such symptoms; first, where the disease is over-treated, as in the case just related, and secondly, where pneumonia has run on to its third stage, viz. grey softening, or purulent infiltration. The disorganization of the pulmonary tissue is often indicated by the occurrence of delirium.

Case of Pleuropneumonia grafted on chronic disease of the lungs.

Thomas Kingston, aged 41, admitted April 17, 1845. A strongly-built man, with a dark sallow complexion. Countenance distressed; respiration hurried. Complaints of severe pain in the left side of his chest, which is increased on inspiration, coughing, or other movements; has frequent paroxysms of coughing, which cause much distress; expectorates, scantily, sputa consisting of tawny rather viscid mucus. He has headache, loss of appetite, great thirst, and passes restless nights. Tongue moist, much furred; skin cool; pulse 108, full, jerking, but compressible; bowels constipated. Upon auscultation, in the left lung posteriorly, there are some small crepitations detected in the scapular region, but below this there is total absence of all respiratory sounds, with very marked dullness upon percussion. Anteriorly there is also complete absence of respiratory sounds beneath the level of the left mamma, with tympanitic resonance in the cardiac and left axillary regions. In the right lung respiratory murmur is generally rather deficient: with this exception, nothing peculiar is detected. The heart's sounds and impulse are very indistinct. The chest appears generally much rounded, especially on the left side.

He states that he is employed in an iron-

foundry, that his general health is good, and that he has not suffered from habitual dyspnoea. He has had frequent attacks of acute rheumatism, during some of which he suffered pain in the left side, and had leeches applied over the cardiac region. Five days ago, after exposure to wet and cold, he was awake in the morning with severe pain in the left side, accompanied with cough, and succeeded by headache, pain in the limbs, and feeling of general debility. Ordered—

C. C. infra scap. sinistram ad $\bar{5}x$.; Hyd. Chlor. gr. ij.; Ant. Pot. Tart. gr. $\frac{1}{8}$; Pulv. Opii, gr. $\frac{1}{2}$, 4ta quaque hora; Ol. Ricini, $\bar{5}ss$. statim.

18th.—The cupping relieved the pain for a while, but it again returned, though less severely. Pulse 102, of the same character. Bowels freely moved. Other symptoms remain unaltered. Upon ausculting the left lung in front, respiratory murmur is audible lower down; towards the axilla a slight pleural friction sound is heard; the sounds of the heart are more audible, and its impulse can be perceived more distinctly. Ordered—

C. C. axillæ sinistræ ad $\bar{5}x$.; Pt. Pilul. 4ta quaque hora.

Most complete relief was afforded by this cupping, the pain in the side being removed. In the note of the 19th, it was observed that there was less manifest fulness about the præcordium.

From this date, the man progressively improved; there was no return of pain; the crepitations disappeared from the left lung; the respiratory murmur became audible lower down, but was still very deficient towards the base, with impaired resonance upon percussion; the tympanitic resonance in front became less marked, and the sounds and impulse of the heart were more clearly perceptible in the cardiac region.

He was discharged from the hospital on the 5th May, convalescent, at his own particular request. Upon ausculting his lungs on that day, there was found deficient respiratory murmur at the base of the left lung, with impaired resonance on percussion; in front, the respiratory murmur was feeble, and the resonance on percussion still loud over the lower half of the lung. The sounds and impulse of the heart natural.

REMARKS.—The foregoing case is instructive, inasmuch as it points out how the ordinary physical signs of pleurisy and pneumonia will be modified by pre-existing structural changes in the lungs. The history of this man assured us that his constitution had suffered severely from hard living, and exposure to frequent vicissitudes of climate. He had also been the subject of repeated attacks

of rheumatic fever, in some of which there was reason to believe he might have suffered from pneumonia. But, the point of peculiar interest in the auscultatory phenomena, was the state of the lower part of the left side of thorax at the time of his admission, and for a few days subsequently. The physical signs left me in doubt, whether, in addition to the pleuro-pneumonia of the left side, I had to contend with the complication of exaggerated emphysema of that lung, or with the presence of air in the pleura. The man had been accustomed to occupations requiring great bodily exertion for many years, and had suffered no habitual dyspnoea. These facts militated against the supposition of emphysema; on the other hand, the presence of air in the cavity of the pleura is so uncommon an occurrence, excepting where the pleura pulmonalis has been punctured from without, or has ulcerated from within the lung, that I could hardly bring my mind to the conclusion that air had been secreted into the cavity of the pleura. However, in the progress of the case, the convexity of the left side diminished, the heart's sounds and impulse became perceptible in the proper præcordium, and a feeble respiratory murmur was heard in the left axilla and hypochondrium. But even this change in the physical signs did not resolve my doubts; either of the two suppositions would explain the altered state of the chest. The emphysema might have gradually diminished, or the pneumo-thorax disappeared by the absorption of the air. Although the constitution rallied, and all pectoral symptoms disappeared, still there remained the unequivocal signs of old disease at the base of both lungs.

Case of Pneumonia and Endocarditis occurring in rheumatic fever.

Allan Avery, aged 13, a healthy-looking lad, admitted March 27, 1845, complaining of severe rheumatic pains in most of his large joints: both ankles are red and swelled; there is effusion into the left knee-joint; his breathing is hurried; he has frequent cough, and expectorates a scanty, clear, rather adhesive mucus; he has some pain in the right side on coughing. This is his first attack of rheumatism; it commenced with shivering four days ago. Upon auscultation, there is an absence of clear respiratory murmur over the lower half of the right lung posteriorly, the breathing being coarse and bronchial, together with bronchophony and impaired resonance on percussion: respiratory murmur is clear towards the upper part of the lung, and exaggerated throughout the left lung. There is a faint murmur accompanying the systole of the heart at the base, none at the apex; the second sound clear. Ordered—

C. C. infr. scap. dextr. ad ζ iv.; Hydr. Chlor. gr. iij.; Pulv. Ipec. Co. gr. v. hac nocte; Tinct. Colch. η x.; Magn. Carb. gr. x.; Ex. Aq. Pimentæ ζ j. ter die.

During the next four days the rheumatic pains and swelling diminished, and his cough became less troublesome. Upon ausculting his right lung on the 1st of April, it was found more permeable to air, except at the lowest part, where there was great deficiency of respiratory murmur, with dulness on percussion; there was also some crepitation, bronchial breathing, and bronchophony remaining. The systolic murmur remained at the base of the heart; there was also a short one audible at the apex. He was ordered—

Hirudines vj. infra-mam. sinistram; Hydr. Chlor. gr. ij. nocte; Haust. Sennæ Co. mane. Pt. Haust Colchici.

On the 7th the rheumatic pains had subsided; he had very slight cough, with scanty frothy expectoration. In the right lung the respiratory murmur was almost as clear and abundant as on the opposite side, and was unaccompanied with morbid sound. The systolic murmurs were much less distinct.

From this date he progressively improved, and when ausculted on the 25th of April (the day of his discharge from the hospital), there was clear respiratory murmur audible to the base of the right lung, with good natural resonance on percussion. A faint systolic murmur remained at the base and apex of the heart, but only audible when the heart's action was increased.

Case of Pneumonia, Endocarditis, and Pericarditis, occurring in rheumatic fever.

Sarah Emmett, aged 13, admitted April 22, 1845. A healthy-looking servant girl, of full florid complexion, having more the appearance of a girl of twenty than of thirteen. She has rheumatic inflammation of several of the large joints: this is her first attack of rheumatism, and is of a month's duration altogether, but the symptoms have been especially severe within the last three days. She has slight cough, and some pain in the chest.

Auscultation.—There is a loud harsh systolic murmur at the base of the heart, most audible at the junction of the third costal cartilage of the left side with the sternum, where it has the character of a dry rubbing sound, but it is not accompanied by a diastolic murmur; there is a loud systolic murmur at the apex also; the heart's impulse is forcible; slight increase of dulness on percussion over the præcordium. Ordered—

V. S. ad ζ xij; Hirudines viij. sterno. Hydr. Chlor. gr. viij.; Pulv. Opii gr. j. statim. Haust. Sennæ Co. cras.

No faintness was produced by the bleeding; the blood was buffed and cupped.

23d.—The rheumatic pains are diminished, but she complains of more pain in the chest. Upon auscultation, there is a loud harsh systolic murmur over the whole præcordial region, most audible at the base; at the junction of the third costal cartilage with the sternum it has a rustling character, but in no part can a double sound be detected. The murmur is only faintly continued up the aorta: there is extended dulness upon percussion in the præcordial region.

C. C. ad ζ vij. intra scap. sinistr. et spin. dorsi. Hydr. Chlor. gr. viij.; Pulv. Opii gr. j. statim. Haust. Sennæ Co. cras.

The cupping afforded relief, and she slept well afterwards. During the following days the rheumatic pains diminished; she took nightly doses of calomel and Dover's powder, with colchicum during the day. The systolic murmur at the base remained of a rustling crackling character, but did not assume more decidedly the characters of a pericardial friction sound. On the 26th, she complained of pain beneath the sternum in taking a deep breath, and had some cough, with mucous expectoration, slightly tinged with blood. She was ordered a blister over the sternum. On the 27th, upon ausculting the lungs posteriorly, it was noticed that air entered the left lung by short, catching, muffled inspirations, and was accompanied by a few large crepitations. The cough and pain in the chest continued more or less during the next four days, but the rheumatic pains diminished. On the 2d of May, she complained of more severe pain in the chest, principally beneath the left breast, and towards the left side: her respirations were hurried. Upon ausculting the left lung posteriorly, there was found deficiency of respiratory murmur over the lower half, the breathing being bronchial; there were a few small crepitations about the middle of the scapular region; resonance on percussion was impaired over the lower half of the lung. The heart's sounds were indistinct at the base; there was extended dulness on percussion over the præcordial region. Ordered—

Emplast. Canth. lateri sinistro.

The pain was relieved by the blister, and she has since in all respects steadily improved.

REMARKS.—The last two cases will draw your attention to a form of pneumonia which is frequently overlooked, but which adds most seriously to the dangers of rheumatic fever, and which often greatly protracts the convalescence in that disorder. Rheumatic pneumonia is characterised by

some peculiarities, to which I will now briefly allude. It is seldom ushered in by much thoracic pain, dyspnoea, or cough; and still more rarely is it accompanied with the sputa so characteristic of genuine inflammation of the pulmonary parenchyma. The pains endured by the rheumatic patient in his great joints distract his attention from pulmonary distress, if there be any; and his helpless state aggravated to one of great torture by movements of the body in bed, almost prohibits the employment of auscultation. Hence, the disease often proceeds for some days without being detected, just as a similar complication in typhus fever is frequently overlooked: the cardiac murmurs, however, remaining.

Fortunately for the patient, the same remedies which are usually employed to control the rheumatic fever, and concomitant endocarditis, or pericarditis, are equally appropriate to arrest the progress of the pneumonia.

Original Communications.

MICROSCOPICAL PATHOLOGY.

ON THE DEPOSITS IN ALBUMINOUS URINE.

By DR. H. BENCE JONES.

IN Dr. Simon's *Beitrag*, p. 105, published in 1843, the following passage occurs:—

"Urine in Bright's disease. About a year and a half ago, Herr. Geh. R. Schönlein directed my attention to a peculiar sediment which occurs in some cases of albuminous urine; and, as would appear, more especially in those cases in which there is Bright's disease. The microscope shows that the sediment is quite peculiar, and altogether different from the ordinary sediments. To the unassisted eye it appears as a slight mucous precipitate, which is however distinguishable from a sediment consisting of mucus from the bladder. When the urine is carefully poured off, and the sediment is placed under the object glass of the microscope, the following different appearances may be recognised.

1. Mucous globules of the ordinary size; partly granulated; partly clearer; nuclei very distinct.
2. Laminar epithelium from the mucous membrane of the bladder.
3. Blood globules.
4. Round dark globules filled with

granular substance, in diameter varying from $\frac{1}{1000}$ of an inch to $\frac{1}{111}$ of inch. These globules were very similar to those which Gluge has described as inflammatory globules.

5. Tubes, or amorphous matter adhering in the form of tubes, similar to coagulated albumen. These tubes for the most part have an actual covering, and are cylindrical; as may be easily seen by causing them to revolve in the urine. Sometimes the covering is wanting, and then an amorphous slightly granular matter adhering like a cylinder is seen. The true cylinders are sometimes quite full, sometimes empty, and containing only a small quantity of granular substance. The cylinders which are full contain sometimes a light, at other times a darker granular matter, which consists of small nuclei, among which cells and globules similar to mucous globules appeared to exist; but I was not able at all times to convince myself of their presence. The breadth of the cylinders varied. The broadest I estimate at $\frac{1}{500}$ of an inch, the smaller ones at $\frac{1}{1000}$ of an inch.

"Having had these cylinders thus brought to my notice, I carefully examined the urine in cases of albuminous urine, in which, at the same time, pain in the region of the kidney led me to conclude that there was disease of that organ; and also in other cases in which it was presumed that there was degeneration of the kidney, I have found these cylinders and globular masses. There can be no doubt that this peculiar form of matter comes from the kidney, and probably arises from the epithelial lining of the canals of Bellini being altered by disease. Whether they are to be found only in Bright's disease, or whether they occur in other diseases, can only be determined by further experience. So far as I have seen, they always appear in conjunction with albumen, but blood globules are not invariably present at the same time. In one case, in which there was ascites and anasarca, and the urine was only secreted in small quantity, I twice made a chemical analysis. The first time there were only 12 oz. passed in twenty-four hours. The urine was dark brown, and contained no blood, but so much albumen, that after boiling in a test tube, the tube might be inverted without the coagulated fluid escaping.

The urine was acid, and contained many of the above mentioned cylinders and globules. The specific gravity = 1014. After some days the quantity secreted was less, the specific gravity greater, and the reaction continued acid. In both specimens uric acid was present in about the healthy quantity. The urea was found to be diminished. Some days after, the albumen was less, but rhombic tables of yellow uric acid were precipitated. I consider that the presence of these peculiar forms of matter in albuminous urine in Bright's disease is of sufficient importance for me to direct the attention of physicians to it."

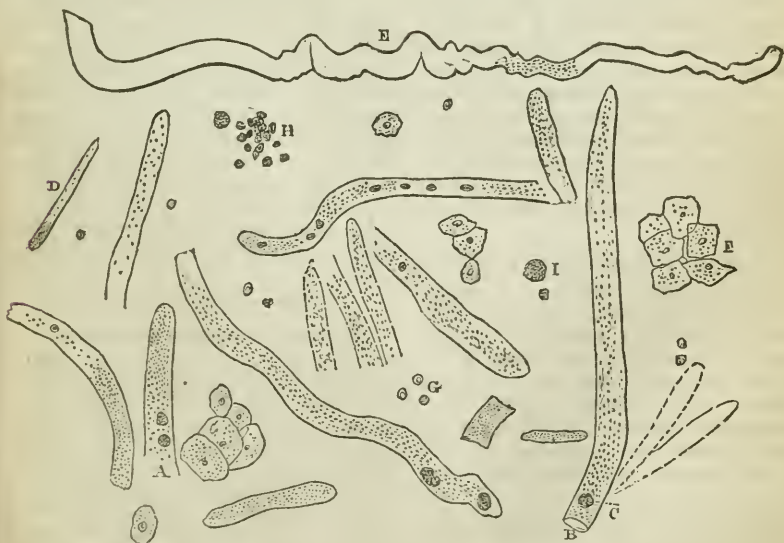
At page 111 of the same volume, Dr. Simon mentions a case of very doubtful scarlatina, in which the cylinders occurred in a boy of 6 years old. On the 16th day the patient died of hydrocephalus, but the body was not examined.

Dr. Scherer, at p. 37, of his Researches, published in 1843, gives the case of J. Jordan, shoemaker. Dropsy of two years' standing. Urine coagulated strongly. Specific gravity, 1025. The specific gravity fell to between 1014 and 1015. After having been in the hospital nearly a month, during

which he had become gradually worse, the following note of his urine is made four days before his death.

"The urine is thick, and by boiling perfectly coagulated. The specific gravity = 1010. The secretion slightly acid. It contained 9.0 parts of albumen in 1000 urine, and 2.4 parts of urea. Of the earthy phosphate scarcely a trace. Uric acid = 0.4. The urine on standing gives a flaky precipitate, which under the microscope appears as an aggregation of nuclei. Besides this, there are mucous globules, and a peculiar kind of tubular cylinders of about $\frac{1}{100}$ to $\frac{1}{80}$ of inch broad. These appear in their interior to be filled with the small nuclei. They have exactly the appearance as though they were false membranes, like those in cramp, which had been thrown out from the urinary canals of the kidney." Four days after, on examination, Bright's disease was found. In a note, Dr. Scherer adds, "According to a verbal communication from Professor Henle, the same appearance has been often observed by him in Bright's disease."

A short time previous to my meeting with these passages, I also observed the same cylinders in Bright's disease. Since 1843, I have not found one case



A, 1-1000th of inch broad.
1-160th " long.
B, 1-1500th " broad.
C, 1-3000th " broad.
D, 1-6000th " broad.

E, 1-47th of inch long.
F, Laminar epithelium.
G, Blood globules.
H, Mucous globules.
I & C, Granular globules.

Of this disease in which the microscope failed to show these bodies, though, in different patients, the quantity present has varied exceedingly. Recent cases, in which I have thought the kidney was in the second of Dr. Bright's stages, have hitherto presented the largest number of these cylinders*. By measurement I find the diameter of the urinary ducts varies as much as that of these bodies does.

It has occurred to me to find this microscopic appearance in five cases in which no dropsy whatever was or had been present; albumen was however always coincident, though it sometimes required some care to detect it. I have never yet met with the cylinders without the urine being albuminous. In a medical man who considered himself in perfect health, I found these cylinders with very slightly albuminous urine, and much oxalate of lime. This last occurs so frequently in indigestion, and in scrofulous children, without producing the microscopic appearances here alluded to, that I cannot consider it probable that irritation caused by oxalate of lime urine leads to the effusion of fibrin and albumen from the parietes of the urinary ducts. Nor can I agree with my friend, Dr. Scherer, that these cylinders are analogous to the fibrinous coagula in croup, and that they result from inflammation of the ducts. It seems to me more probable that congestion causes the effusion of the liquor sanguinis into the urinary ducts; that thus fibrin, as well as albumen, are effused together; and that the fibrin coagulating in the ducts produces the cylinders, and the granular matter within them.

In support of this view, it may be mentioned, 1. that in Bright's disease there is usually a tendency to an excess of fibrin in the blood, and 2d, that in the state of health, when only the ordinary quantity of fibrin exists in the liquor sanguinis, the serous effusions always contain some spontaneously coagulable matter. Mr. Hewson, in his *Experimental Inquiries*, Part II, p. 103, says:—"If, soon after killing

an animal in health, the abdomen, thorax, or pericardium be opened, and if a little of the fluid that moistens these cavities be collected, which (even in cases where the quantity is very small) may be done by gently scraping the surface of these cavities with a wet teaspoon, and if the fluid thus collected be suffered to rest exposed to the air, it will jelly as the coagulable lymph of the blood does. This is an experiment which I have made on a considerable number of animals; viz., on bullocks, dogs, geese, and rabbits, and the result of all the experiments was the same." I have lately been informed that recent experiments at Alfort confirm Mr. Hewson's results. The comparative insolubility of the cylinders in acetic acid, which I have also observed, may be the consequence of the oxidation of the fibrin. That they are protein compounds is easily shown.

The objection to this view is, that it gives no satisfactory account of the granular globules which in some cases are almost altogether wanting, whilst in others I have seen multitudes of granular globules, but very few cylindrical bodies.

The appearance of these cylinders in the urine appears to me to indicate, therefore, effusion of liquor sanguinis from the capillary vessels of the kidney, and this will be the consequence of congestion of the secreting structure. Further experience may show that simple congestion alone, without granular disease, is indicated by these cylinders, but, at present, from their invariable appearance in Bright's disease, I should, when I met with them in the urine, always suspect that granular degeneration of the kidney was taking place.

OPIUM NOT POISONOUS TO RABBITS.

At a late meeting of the Academy of Sciences, M. Lafargue, of Saint Emilion, communicated to the Academy a curious fact which he recently observed. The indigenous poppy is so far from being poisonous to rabbits, that they may, on the contrary, be fed on it. He has fed several rabbits for a considerable time on various parts of the poppy, as the leaves, stems, flowers, capsules, roots, &c. with perfect impunity.—*Dublin Medical Press.*

* The accompanying drawing was made from a patient of Dr. Seymour's, admitted into St. George's, May 24, 1841, *æt.* 47, porter. Says he was quite well in October, able then to work as well as ever. In November began to feel unable to work, and swelling of the legs began. Dec. 7th, gave up work; about 21st, face began to swell. Urine coagulated strongly. Specific gravity 1015.

PRACTICAL OBSERVATIONS

ON THE

VARIOUS FORMS OF DYSPEPSIA.

BY ROBERT DICK, M.D.

Author of a Treatise on the "Derangements, Primary and Reflex, of the Organs of Digestion, with an Addition," "Treatise on Diet," &c.

[Continued from p. 146.]

AMONG the symptoms which, in chronic indigestion, are manifested elsewhere than in the digestive organs themselves, may be remarked first, muscular languor, and a greater than natural sensibility to changes of temperature. The muscular debility is of two sorts: the former of which consists usually of sudden but brief fits of faintness, which occur sometimes during the day, but more commonly in the evening; frequently after tea has been taken, and the patient has gone out, and is in the act of taking exercise, or else is engaged at home in close mental labour. This faintness is sometimes described as very overwhelming, and often produces very gloomy anticipations in the patient's mind. The latter consists in permanent languor, permanent indisposition to bodily or mental exertion, and by a rapid exhaustion and disproportionate depression on even the slightest physical effort or moral excitement.

There is also very often preternatural sensibility to changes of temperature, principally to cold. According to Dr. Philip, the patient at first *feels* cold readily, and at length his temperature actually sinks. Unquestionably patients often complain of cold feet, hands, nose, of chilly sensations along the spine, and even of coldness of the stomach. Not uncommonly, in certain persons, the fits of indigestion are characterised by alternations resembling the cold and hot stages of fever. Before noon, there may be chilliness; in the afternoon and evening, dry heat; towards morning, when the patient sleeps soundest, he perspires, and often awakes bathed in sweat. In permanent indigestion, the patient is generally cold, though there are exceptions to this; but a slight increase of temperature heats and annoys him.

The urinary secretion evinces for the most part marked and persistent derangement in permanent indigestion. An undue proportion of urea, and of

the urates of soda and ammonia, are the principal and most usual aberrations from the normal states of the urine. It is sometimes turbid, from the superabundance of the phosphates, or from the presence of albumen, which last substance begins to shew itself when the liver is chronically engaged in the dyspeptic derangement. Dr. Paris supposes this excess to indicate a failure in the excreting action of the skin, by which a proportion of this acid should pass. The average quantity of urine in permanent indigestion may not differ greatly from the natural, but it is more irregularly secreted, and easily susceptible, from trivial causes, of augmentation or diminution. I may here, in passing, observe, that a chemical investigation of the urine, in dyspepsia, is always proper, in order to facilitate our inferences as to its origin and nature; and for the purpose of therapeutic indication, more especially as to the particular diet employed by the patient, how far it may have caused or kept up the derangement, and how far a change on this point is likely to aid in cure. At the same time, it is necessary to observe, that as there are cases of renal disease without any notable change in the alvine discharges, so some of the severest cases of dyspepsia are *unaccompanied* with derangement of the urinary secretion.

I have stated, in a former publication, that the "heart and the circulation are almost always more or less affected in indigestion." I would here recal, almost in its full extent, that allegation. In cases of simple dyspepsia, without any inflammatory action in the liver or gastro-duodenal mucous membrane, and where the heart itself is free from structural disease, the pulse is really very rarely affected, as regards volume, rhythm, or frequency. Dr. Philip attaches great importance to what he calls a "tightness" of the pulse. "If," he says, "the pressure is gradually lessened till it comes to nothing, it often happens that a tightness of pulse is felt before the pulse wholly vanishes under the finger." "This," he adds, "is in no degree the case with the pulse of a healthy person, nor even of those labouring under the first stage;" and he considers it as an indication that the disease has passed from mere functional into inflammatory lesion.

This alleged peculiarity of the pulse has not been observed by Copland and Johnson, nor by myself; and other writers make no allusion to it. A pulse smaller and more circumscribed than natural doubtless is sometimes observable; for debility is usually present, and assimilation moreover being imperfect, and purgatives being often used in some excess, the circulating fluid is diminished, and therefore the vessels, accommodating themselves to the reduced volume of blood, give a contracted pulsation. But we conceive that inflammatory action may have no share in the production of this effect. While, however, the pulse is rarely notably affected in dyspepsia, it is undeniable that patients occasionally complain of a general uneasiness about the region of the heart, which augments, diminishes, or disappears, according to the issue of our treatment of the stomach and bowels. And it is still more unquestionable, that affections of the heart are very remarkably influenced by the state of the digestive organs.

Dyspeptic derangements affect the lungs mechanically and directly, or circuitously and functionally, as, for example, by sympathetic disturbance of the pneumo-gastric nerve. Distension of the stomach and bowels by flatus, and a loaded state of the colon, cause occasionally fits of breathlessness, mimicking asthma; for thus the thoracic dimensions are narrowed, the play of the diaphragm and the resilient dilatation of the lungs impeded. And from this condition of frequent flatulence of the stomach and bowels, no common degree of inconvenience and suffering is caused to those subject to it.

Headache is at once one of the most ordinary and troublesome effects of indigestion. In permanent dyspepsia, pain is often complained of by some; others perpetually suffer from a kind of confusion in the head, which hinders them from being, as it were, masters of their own thoughts. The headache of permanent indigestion is less partial in place than that of occasional, and without being so acute, is more oppressive. While it usually never entirely departs, it suffers full aggravation after meals. I am accustomed to consider the rapidity and severity with which headache and other secondary affections take

place or suffer aggravation after meals, as in some measure an index of the stage of the dyspeptic derangement, and of the length of treatment which may probably be required.

Besides the secondary affections now alluded to, there are many of an anomalous kind. There can be little doubt that many cases of chorea, tic douloureux, epilepsy, and paralysis of the extremities, are owing to irritation of the stomach and bowels. Of the second and last of the diseases named, I have had not a few cases under my own observation. The convulsions of children are notoriously owing to the source referred to. The affections of vision and of hearing, so frequent with dyspeptics, are to be accounted for from the fact, that no class of organs, nor any single principal organ, can be long the seat of disturbance or irritation, without remote organs manifesting debility or irregularity of action. Numbness, or morbid sensibility of various parts, is complained of, principally by women; and I have frequently noticed, in chronic cases, a great tenderness at the lower part of the neck, and in the track of the pneumo-gastric and phrenic nerves. Dr. Todd refers to a feeling of heat, at the point of the tongue, as a symptom in one form of dyspepsia. I have met with one or two cases where a feeling of extreme cold, in the same part, was complained of, while there was not, as in cholera, any real coldness of the tongue; a thermometer proving the contrary.

The moral and intellectual effects of chronic indigestion are next to be noticed. The mutual influence of the mental operations and moral emotions on the one hand, and certain conditions of the digestive organs on the other, is indisputable. Two cases will give an epitomised view (if such a phrase may be permitted) of that influence, which chronic disease manifests *merely in a more gradual manner*. First, as to the influence of the mind on the digestive organs. "A Cambridge student," Dr. Paris informs us, "called upon a friend, and observed a glass of sherry on his table, which he immediately swallowed. The gentleman in whose apartment this occurred immediately determined to play a hoax on his visitor, and turning towards him the label of a half-pint bottle of antimonial wine (an emetic), declared

he had swallowed a portion of its contents. The student left the room, and vomited instantly." Next, as to the influence which particular states of the digestive tube exercise on the mental manifestations: Pinel mentions the case of a young man, who, twice seized with mania, was as often cured instantaneously, on evacuating a large mass of worms.

It very often happens, though by no means always, that hypochondriasis is allied with indigestion; for though hypochondriasis seldom, perhaps never, presents itself without *some* derangement of the digestive organs, the latter exists not uncommonly without the former. I may, however, remark in passing, that hypochondriasis is *not* indigestion, nor, notwithstanding the import of its name, is it hepatic disorder merely, since hypochondriasis *essentially* includes an affection of the cerebral organs, which is *not* the case with either stomachic or biliary derangement. Now I would further remark, that in *every* case of dyspepsia, in which moral and intellectual symptoms *are* present, I would say that hypochondriasis was implicated with indigestion, and that the cerebral organ *must* obviously and necessarily be more or less affected. No reasoning appears to be needed to prove so self-evident a proposition. It happens, then, that in a considerable proportion of dyspeptic cases, complaints are made to us by the patients of the dimness and feebleness of their ideas; of their inability to think so closely, clearly, and continuously as formerly; of their indisposition to study or business; of their general mental incapacity. We hear such complaints from students, clergymen, lawyers, artists, schoolmasters, merchants, and merchants' clerks; and, indeed, I could narrate cases where considerably grave errors in pecuniary calculations and speculations, and injudicious proceedings of various kinds, were attributable to the temporary obscurity or hallucination which dyspepsia, complicated with hypochondriasis, had produced. And occasionally the harassment of society and business, accompanied with the patient's consciousness, real or supposed, of his inaptitude for them, becomes such, that he gradually drops out of them partly or wholly. This is often an unwise and unhappy step,

since active habits have their advantages as well as disadvantages in this disease; and retirement from the patient's usual pursuits more frequently aggravates than alleviates his ailments, unless that retirement be to some agreeable scene and society, such as a pleasant watering-place; or unless it be occupied in travel, and cheerful and improving intellectual and moral occupation.

Now it is a fact of great practical importance both to the physician and the patient, that it is under the pernicious influence of the moral despondency, irritability, and the humiliating consciousness of intellectual enfeeblement referred to above, that destructive and sometimes fatal recourse is had to intoxicating liquors, opiates, sedatives, purgatives, &c. The depression of spirits, with a morbid craving for relief, leads especially to the abuse of purgatives, which afford temporary ease, but generally at the expense of subsequently augmented wretchedness of mind and debility of body.

Ere concluding this enumeration of the symptoms, direct and indirect, of indigestion—of those manifested along the intestinal tube, and those in distant parts and organs—it is necessary to remark and impress deeply on our minds, that all the affections giving rise to these symptoms may, from being functional, become, if unchecked, structural; nay, that this is the natural and invariable progress of all lesion. "The headache," observes Dr. Wilson Philip, "occurring from disordered stomach, may become, at length, a *disease of the head itself*; and there is no organ, we have reason to believe, in which disease may not arise in the same way." To the accuracy of this statement, so far as it applies to dyspeptic disease, experience and observation lead me emphatically to subscribe.

Having now given a rapid sketch of the symptoms of indigestion, both those manifested in the digestive organs themselves, and in other organs, I now proceed to the subject of treatment.

It is not my intention, in the further prosecution of this inquiry, to attempt anxiously methodical arrangement, which, indeed, is the less important considering the occasional mode of appearance of these papers. I shall devote part, or the whole of the remainder, of

the present paper, to the subject of CONSTIPATION and the management of the bowels.

There is one form of derangement of the bowels, to wit, constipation, which often precedes—long precedes—derangement of the stomach, duodenum, and liver,—so long, indeed, as to make it apparent that they have no immediate relation, and that the former does not cause the latter. The form of constipation to which I allude occurs principally in the young of both sexes, from the fourteenth to the twenty or twenty-second year. It rather indicates vigour than atony, and implies active assimilation and absorption along the intestinal canal. The costiveness is owing to the consequent dryness and solidification of the excrement, and to the thorough extraction from the aliment of the sapid and nutritive principles, so that its excrementary residue is reduced to the smallest possible volume. This form of costiveness is compatible with the highest health and vigour of the digestive organs, and generally disappears at that period of life when less exercise begins to be taken, and when, consequently, the fluids of the body are less exhausted in perspiration, &c., and when, accordingly, absorption takes place less actively in the bowels, and the intestinal tube becomes again more plentifully lubricated with mucus. The constipation which *succeeds* indigestion is of a nature altogether different from this. But as the *constipation of youth* does sometimes, from neglect and injudicious treatment, lay the seeds of future disorder, a few observations on its management may be here properly made.

In all cases relief should, in the outset, be attempted by *injections*; at first simple, that is, consisting of tepid water; then medicated, that is, of water having soap or salts, common or Epsom, castor or olive oil, infusion of senna, with tincture of assafœtida added to it. Gruel, with oil of turpentine, forms an excellent injection in cases of colicky constipation. An enema, then, formed as now directed, and of considerable volume, should be thrown up every morning after breakfast. After a time, and when the habit of evacuation is established, a smaller enema, and a simple one (supposing it to have been necessary to commence treatment with

a medicated one), will be found sufficient. As the dryness of the intestinal contents, arising from active absorption, is the sole derangement, and as this is confined to the colon, the artificial assistance of an enema is all that is usually required.

The advantage of endeavouring the cure of this form of constipation by injections, is, that as no other part of the intestinal tube than the colon is at fault, so to no other part is the remedy addressed. Besides that, the giving of aperients by the mouth, for a simple disease affecting the opposite extremity of the intestinal tube, is a circuitous measure; the practice is, moreover, fraught with inconveniences and risks. In order to lubricate the lower bowel, to which the disorder is confined, the secretions of the whole of the upper part of the intestinal tubes, that is, of the stomach, duodenum, and small intestines, are, by the method now referred to, artificially augmented, and these parts and organs are thus insidiously accustomed not to act efficiently unless from the stimulus of purgatives. This habit, thoughtlessly formed by young persons, may ensnare them into dependence upon medicine for the remainder of their lives, and lay the foundation of irregularity and debility, both of the stomach and intestines. Young women are particularly apt to fall into this dependence on medicine, from their aversion to consult a physician about this complaint, and that it should be known they use the means above pointed out for its removal. Women on the continent, less subject to such delicacy, very generally employ enemata.

If, however, some *aperient* by the mouth be indispensable, it should be selected from those medicines, which, leaving the upper parts of the digestive tube unaffected, begin to operate only when they reach the lower bowel, the seat of affection. Aloes, galbanum, sulphur, myrrh, pills of hard soap, are among these. Olive and castor oil are next best.

The *diet* of young persons* prone to this form of constipation, should, in a good measure, be pultaceous and herbaceous. By the adoption of such diet, the object will be attained,

* 'Λι γυραι διαται πασι τοις πυρεταινοις ξυμφορουσι' μαλιστα δε παιδιοις, &c.—*Hippocrates' Aphorisms.*

or, at least, less medicine will be rendered necessary. An injection will have the same good effect, namely, that of lessening in whole, or, in part, the need for laxatives by the mouth: they ought, in every case, to be employed.

I will not conceal that the use of enemata is not wholly unattended with inconvenience and hazard. I have met with cases in which it certainly seemed to have caused an unpleasant relaxation of the rectum, leading to a passive protrusion of the bowel, approaching to prolapsus. None of those cases, however, amounted to complete prolapsus: the intestine only becoming everted at stool, or when the bowels were disordered, or full of flatulence, and being easily returned. And, moreover, in the cases to which I allude, there had been indiscretion in the use of the enema. It had been used too hot; too strongly medicated, and in too small a quantity: so that, affecting the rectum only, and that violently, it had produced tenesmus, without evacuation. On the other hand, I have known persons who have employed the instrument for long periods, not only without ill effects, but with the most material benefit.

But there are other forms of constipation which *succeed* to indigestion, and are caused by it. These come insidiously on, and have, at first, many intervals of remission dependent on the rallying vigour of the digestive organs; according as the adoption of a better system of diet, perhaps, or relaxation from business, or the taking of more exercise, or the advantage of pure air, produces a transient abatement or disappearance of the primary affection. But, as the dyspeptic derangement increases, and becomes complicated, so does the intestinal.

This is partly owing to the gradual extensions down to the lower parts of the canal, of the same causes which are productive of indigestion in its upper: as hyperæmia, muscular or nervous atony, irritability, morbid sensibility: and, partly, to the failing vigour of the organs at the superior part of the abdominal cavity, by which is permitted the transmission downward of crude and ill-digested, and, consequently irritating matters; as well as to the morbid influence which the vitiated secretions (formed in the stomach, duodenum, liver, and pancreas), exert on the

mucous membrane of the inferior bowels.

As in persistent indigestion, the organ in the upper portions of the intestinal tube act by fits—as, for example, the liver seems occasionally to continue several days in a constipated condition, during which, however, bile is formed in the viscus, but not discharged, until, at length, stimulated by the accumulation, there is suddenly poured forth a torrent of concentrated bile—so the bowels, sluggish during the late torpor of the liver, are suddenly excited to action by the descent of this exasperating flood, and urged into acrid and tormenting diarrhœa. Thus constipation and looseness alternate. The evacuations are either, in the intervals, too scanty, producing no comfortable sensation of relief, or they are lax, and probably morbid in appearance.

Medicine is now constantly required by the patient, and is accordingly constantly employed by him; but possibly after his own judgment. He, therefore, falls into numerous and grave mistakes as to the selection of medicines, and the times and circumstances in which they should be taken. By such self-treatment, as destructive as quackery, irreparable damage is done by patients to themselves, and easily remediable derangements converted into permanent disease, and enfeebling effects produced on the constitution which no subsequent art may be able to repair.

The liver is the organ the deranged states of which are most conspicuously influential in affecting the function and regularity of the bowels. We have reason to believe that, in general, when that organ secretes justly as regards quantity and quality, the part of the intestinal tube inferior to it is kept in regular action. The chyle seems to be formed duly, and duly absorbed; the excrementitious matter to be fairly separated and precipitated; the peristaltic movement to be sufficiently lively and constant, until the fecal mass is expelled; the excrement to have no more than its natural fœtor, and to present that appearance and consistency which we call normal. But, when the biliary secretion is diminished or altered, various ill effects follow. There is flatus; great fœtor of stools; dryness of skin; thirst, quickness of pulse; sleeplessness, or dis-

agreeable dreams. The tongue is dry, frothy, white. In such a case it is, that a few grains of blue pill, taken at night, produce those almost marvellous effects ascribed to them by Mr. Abernethy, and which, owing to the quiet nights and sound sleep they procure, make patients imagine they are taking a narcotic. There can be no doubt that a deficiency of the bile causes an irritable state of the mucous membrane, giving rise to flatulence, dryness of skin, heat, and nocturnal sleeplessness, which mercury removes. Colchicum has, to a considerable extent, the same effect.

In the treatment of bowel derangement, consequent on dyspepsia, we may draw useful hints from the nature of the stomacic affection. The medicines designed to act on the intestines are to be combined with those required for the stomach. For example, aloes, as a purgative, may be variously combined, as follows. Thus, constipation, with nervous irritability, and morbid excitability, requires aloes, with hyoscyamus and ipecacuan. Constipation, with indolent liver, and deficient biliary secretion, requires aloes, with Plummer's, or blue pill, or calomel and ipecacuan. Constipation, with muscular and nervous atony, and with anæmia, requires aloes, with quinine and iron. Thus the purgative may remain the same, constipation being present; the medicines conjoined with the purgative being varied. Other purgatives, as rhubarb, scammony, colocynth, sulphur, soap, magnesia, may of course be substituted.

In almost every case of chronic and functional derangement of the bowels resulting from indigestion, and requiring purgatives, some sedative or anodyne should be conjoined to the laxative. The best medicines for this purpose are extract of hop, lettuce, or hyoscyamus. In rarer cases, the hydrochlorate of morphia.

It may be proper to observe, that, with a view to the regulation of the bowels, in some cases in which their derangement obviously depends on an irritable or constipated state of the liver, it may be necessary to cup, leech, or blister, on or under the right hypochondrium, and to leech at the anus.

When the bowels are irritable, irregular, and the stools scanty, but frequent and teasing, the plan to be fol-

lowed is this. Means should be taken, by the exhibition of a slow laxative at bed-time, guarded by one of the laxatives above mentioned, to procure a stool next morning after breakfast. This object should, if necessary, be insured by the then administration of an emollient enema. Immediately after the stool has been obtained, or, at least, after two fair evacuations have followed, the bowels should be peremptorily quieted for the day by an anodyne; the usual mild laxative being repeated at night. By thus securing the repose of the bowels, after they have been emptied at a fixed hour, we take the most effectual means of restoring their vigour and their regularity. The best anodyne for tranquillizing the bowels during the day is the chalk mixture, with a few drops, if necessary, of a solution of the hydrochlorate of morphia. The compound ipecacuan powder will answer the same end, given either in one sufficient dose, or in repeated small ones.

In such states of derangement of the bowels, and proceeding from indigestion, the diet which suits the primary affection will be generally found to suit the secondary or intestinal one. If there be vascular turgescence of the gastro-intestinal mucous membrane, the acidulous and herbaceous diet required for the stomach will best suit the bowels. If constipation co-exist with, and result from, an indigestion characterised by muscular and nervous atony of the stomach, we may be assured that the piquant and stimulant diet which suits the latter will be adopted for the former; and, in like manner, the dietetic and medicinal regimen required by the morbid states of the liver will equally answer against the constipation depending on and resulting from these states.

As the bowels are restored to their just action, the patient sometimes gets thinner.* Whether owing to a faulty

* This, I may remark, is an observation of Dr Philip, which I can confirm. I may take this opportunity of stating, that, while these papers embody the results of considerable reading as well as of professional observation, I have refrained, and intend to refrain, from citing, for every item I may owe to others, the book or the author to whom I may be so indebted. Even with the most candid wish to do justice to others, and with a memory of the most retentive kind, few men, without great and needless trouble, are prepared to assign the exact source of much of their information. Nor is there much use in a minute and servile record of opinions perhaps ex-

chyle, to an indiscriminate action of the lacteal, or to a sluggishness in the lymphatic absorbents, it may be difficult to determine; but, probably, in consequence of all of these causes, it happens that the corporeal bulk of many dyspeptics is not significant of health, is not muscular bulk, but is due to the mixed operation of vascular turgescence, adipose deposition, and even slight œdematous infiltration. As the various functions of the system become active and vigorous—as nutrition begins to be effected from a healthier chyle—as lymphatic absorption is stimulated by a gentle aperient drain on the intestinal canal, and by the removal of the bound state of its secreting surface, it results that the patient loses bulk, but not, properly speaking, flesh. The diminution of his size is not owing to a reduction of the muscular, but rather of the adipose tissue, and, it may be, to the removal of an incipient degree of anasarca, of serous puffiness of the interstitial interspaces of all the tissues: not to add that the subsiding volume of the tumid liver, and the removal of abdominal plethora generally, may make the patient both feel and appear as if he were losing flesh. The febrile state of the system being also removed by the relaxing or alterative measures addressed to the intestinal tube, the skin loses its dryness and heat, and transpiration being re-established on it, the system is further disburdened of redundant molecules and fluids, which adds to the suspicion of emaciation.

But all this change is healthful. The patient, even when sensible that he is lighter in weight, and thinner than he lately was, feels at the same time stronger, more agile, more ready to undergo bodily or mental labour, more successful in such, and less fatigued by it. His spirits are better; his ideas more vivid; he ceases to give way to perspiration on every slight exertion; his skin becomes purer; his sleep sounder and more refreshing; and, after a time, he begins to recover what he

ploded and obsolete. "If a traveller," observes Locke, "gets a knowledge of the right way, it is no matter whether he knows the infinite windings, byeways and turnings, where others have been misled. . . . I think it an idle and useless thing to make it one's business to study what have been other men's sentiments in things, where reason is only to be judge, on purpose to be furnished with them, and to be able to cite them on all occasions."—*Lord King's Life of Locke.*

may have lost in bulk, until he arrives at his constitutional standard; and now it is the muscular, and not the adipose tissue, that is augmented in volume.

12, Bentinck Street, Manchester Square.

[To be continued.]

ON THE ARCHED TOURNIQUET IN THE TREATMENT OF WOUNDS OF THE BRACHIAL ARTERY.

BY WILLIAM CRAIG, Esq.

As an illustration of the use to which an arched tourniquet, such as that described by Dr. Oke*, may be applied, I beg leave to request the insertion of the following case in the *Medical Gazette*.

On the 10th August, 1838, P. Roney, aged 40, of spare habit and sallow complexion, whilst being bled on the previous day, had the brachial artery punctured at the bend of the arm. When he presented himself, the puncture in the skin was cicatrised. At the puncture there was a pulsating tumor, about the size of a pigeon's egg, which had the attendant bruissement of an aneurismal varix.

On deliberating what mode of treatment to adopt, I resolved to attempt the cure by compression. The ligature could have been easily applied in this case, as the vessel, from the small quantity of cellular substance, was very superficial. The operation, at best, is a clumsy remedy, and any other efficient means is certainly to be preferred.

Keeping the operation out of view, then, the indication was to arrest the current through the puncture in the artery for such a length of time as to permit the edges of the wound to be kept in contact till adhesion had taken place.

Compression over the tumor, and the necessary bandaging of the forearm and hand, were perseveringly used for a number of days, without lessening the size of the tumor or altering the bruissement. I observed that by pressing the artery with the finger in its course, about the middle of the inside of the arm, pulsation in the tumor and at the wrist was quite suspended, and the patient could bear the neces-

* *Prov. Med. Journal*, Nov. 1843.

sary amount of pressure without inconvenience. It was obvious, then, that my object would be accomplished by any thing which could be substituted for the finger. With this view I made a quadrangle with four small pieces of wood, sufficiently large to encircle the arm; also a piece of wood $2\frac{1}{2}$ inches broad, and long enough to reach from the shoulder to the elbow. This was laid on the outer aspect of the arm. One side of the quadrangle was fixed to the wood thus placed, at a point opposite to that where compression was to be made on the vessel. A pad was placed over the artery a little below where the superior profunda is given off, care being taken not to involve the nerve in the compression. The pad was pressed firmly there by means of a rude sort of screw passing from the side of the quadrangle opposite, to the one fixed to the wood placed along the arm.

The patient was put to bed, and placed in the recumbent position, and the arm raised in a perpendicular direction, and supported there by being suspended to the bed-post, and the pad made to press with such force as to suspend pulsation both in the tumor and at the wrist. The pressure was unremittingly maintained during 24 or 30 hours, at the end of which time the pulsation and bruissement had completely subsided. The arm was kept raised for some days afterwards, with a pad over the tumor, and all excitement and stimulation avoided.

For a considerable time after this treatment the patient complained of pain at the bend of the arm, arising evidently from the severe compression over the tumor before the application of the apparatus. However, this went gradually off.

It may be proper to remark, that the object aimed at by raising the arm was, that the blood thus acting against its own gravity, and consequently with less force, would require less pressure to stop the arterial current.

One peculiarity of this application is, the provision for preventing any compression of the limb except that which is indispensable over the artery. When the arched tourniquet is applied, there will be a corresponding degree of pressure at the point opposite that on which compression is made on the artery, and consequent compression of

the textures between it and the bone, which must, by using it in such a case, add to the suffering of the patient. The piece of wood placed along the arm on its outer side, extending from the shoulder to the elbow, causes the counter-pressure to be diffused over a large surface of the arm, thereby rendering it nearly imperceptible to the patient.

I am not aware that this plan of treatment has ever before been adopted in such accidents. Plenck invented an instrument for making pressure on the wound at the bend of the arm, without pressing upon the whole circumference of the limb.

If the same success follow the adoption of this mode of treatment in future as has resulted in this case, it will certainly go far to supersede the necessity of applying the ligature.

Ayr, May 8, 1845.

ON THE USE OF LIQUOR POTASSÆ IN SOME PUSTULAR DISEASES OF THE SKIN.

By HENRY GEORGE, Esq.

A SHORT time ago I was sent for to a child about five years old, who had passed several lithic acid calculi. He was pallid, of remarkably fair complexion, and of a highly nervous irritable temperament. He was, and had been for nearly three months, the subject of favus, at least if groups of foul incrustations upon the scalp, of a brimstone colour, with numerous depressions, are characteristics of that disease. My attention was directed solely to the functional error of the kidneys; the eruptive malady I regarded somewhat despairingly. The child had been improperly fed; I purged it moderately with jalap and rhubarb, and ordered the following medicine, restricting his diet to what was reasonable.

℞ Liq. Potassæ, ℥℥xxx.; Tr. Hyoscyam.
℥℥xl.; Tr. Card. comp. ℥ss.; Syr.
Aurant. ℥ss.; Aq. Cinnam. ℥ivss.
Fiat Mist. Coch. magn. ter die capiat.

In the course of a fortnight the child's general appearance was much improved. No calculus had been passed. In about a month from this time the boy appeared in perfect health, docile, florid, and all the functions of the body apparently restored. His mother at

this time pointed out to me the improved condition of the scalp. Several incrustated patches were removed, leaving a healthy skin with the hair growing. In about another fortnight the scalp was perfectly healthy, and the child in every respect perfectly well. In the course of time two other cases of favus followed. Believing that the liquor potassæ must have had considerable influence on the favourable issue in the former case, I adopted the same plan of treatment; and in less than a month, the disease was perfectly subdued.

In other forms of pustular diseases of the skin I have found this invaluable medicine equally useful: without exaggeration, I may say that many cases of the crusta lactea have yielded to this remedy in two or three weeks, some of the cases, too, being of long standing. In regard to local applications, I believe the decoction of bark, as a lotion, to be one of the best that can be selected.

22, Lower Phillimore Place,
Kensington.

CASE OF MELANCHOLIA PUER- PERALIS ATTONITA.

By W. E. IMAGE, F.R.C.S.

Surgeon to the Suffolk General Hospital.

On Monday morning, 3 A.M. April 25, 1845, I attended a lady, aged 23, in her first confinement. She was taken in labour thirty hours before the child was born. Every stage of the labour was natural; she continued perfectly well until Friday, the 25th, all the secretions being healthy, and in natural quantities; pulse 80, and weak.

On Friday, at noon, she was suddenly seized with what appeared to the attendants to be an hysterical paroxysm. I visited her at 4 P.M. I found her pulse 130, very feeble; skin moist, not unusually hot; head rather hot; no suffusion of the eyes, but, on the contrary, deadly paleness; pupils respondent to light. She had not had any shivering, nor any pain. The attack was sudden: it appeared that, after reading a letter, her mind became bewildered, and her thoughts indistinct and hurried: her countenance was so peculiar in its expression that I am unable to portray it in words. It was

expressive, quick, sullen, peculiar, but yet without intelligence. She seemed conscious of persons. There was general stiffness of the limbs; not the slightest pain in the body from pressure; body quite soft. A consultation was held. The case was considered to be one of nervous shock, and treated by ammonia, camphor and morphia in effervescence with citric acid: ice to the head, and general support.

On the following day the head was cool; pulse very small and feeble; no particular heat of surface; mammary secretion and lochial discharge none; the limbs were quite cataleptic. The bowels were relieved by medicine.

Opiate enemata given, medicines continued, and Ung. Hyd. Fort. to be rubbed into the thighs every six hours.

Sunday morning she appeared better. Mind more conscious; limbs less rigid. She appeared to improve until the Tuesday morning, when, after a good and tranquil sleep, she awoke with a return of every symptom redoubled in violence. Her limbs were quite tetanic; muscles of the face quite fixed; could scarcely swallow, and soon not at all; the face appeared shrunk and deadly pale, but not cold; pulse 160. She was supported by broth and opiate enemata, but sank on Friday morning, a week after the seizure, and the 13th day after her confinement. These are the main features of the case; and I shall offer only a few words in remark. The fatal letter alluded to was given to her by her husband on Friday morning, communicating to her that his affairs were in a ruined condition, and that legal proceedings were already taken against him. My poor patient was of a most delicate frame of mind; gentle, religious, confiding: the news appeared to strike to the very centre of life; her mind was quite unable to endure the shock—she died.

I have been induced to offer this unsuccessful case to my professional brethren, as I find one almost parallel detailed in the 25th Vol. page 302, of your journal. I have been concise in detail, and request that it may be placed on record by the side of that referred to, under the head of Melancholia Puerperalis Attonita.

ON THE
CRIMINAL RESPONSIBILITY OF
THE INSANE.

By THOMAS MAYO, M.D. F.R.S.
Physician to the Infirmary of St. Marylebone.
[RECORD OF CASES, continued from p. 152.]

THE extent to which the understanding of persons partially insane may be made instrumental to their self-management, by supplying motives and fears, is not at present appreciated. The following brief outline of a case which came within my cognizance two years ago illustrates this subject:—

A gentleman of fortune was admitted two years ago into the establishment of an eminent physician, under good certificates. After a short stay, he somewhat rapidly obtained a considerable increase of rationality and self-control, and then urgently demanded his liberation. In the course of a searching inquiry into the grounds on which his enlargement or further detention might be justified, it became very obvious both to the proprietor of the establishment and to myself, whose opinion was demanded on the subject, that both on this occasion, and probably on a former one, this gentleman had heightened and given prominence to certain eccentricities of a morbid kind, which he knew would afford a colourable ground for this kind of confinement. His object had in both instances been to escape the punishment of certain misdemeanors, of which he had been guilty, by a temporary sojourn at a lunatic asylum, in a character to which he certainly had claims. These misdemeanors had been of a gross kind. In the former instance he appeared to have set his own house on fire, with a view to obtain from an insurance office the sum insured. In the other case, he had made himself obnoxious to the police authorities of St. Omer, by indecently exposing his person. In both instances, I have observed, that he had well-marked claims to being considered monomaniacal; in the latter he was seen by Dr. Monro, who agreed with us in that opinion. His resumption, however, of self-control and coherency was so complete, that it soon became unfit to restrain him in the asylum. He was set at liberty. He ought in truth to have been transferred to a prison. I regret that the claims of medical confidence, and my

unwillingness to afford a clue to the discovery of this case, prevent my mentioning the name of the establishment and of its excellent proprietor.

Macnaughten, the murderer of Mr. Drummond, expressed in a conversation between him and the visitors sent to report upon his case, which one of them, Mr. Maclure, reported afterwards at the Harveian Society,—that he should not have liked to have been hanged for his attempt on Mr. Drummond's life, but that he felt sure *the Duke of Wellington would not hang him*. His prospects of eventual impunity would have been considerably brightened, had he foreknown that Chief-Justice Tindal would not even allow his trial to proceed to a conclusion.

While courts of judicature are shewing a very laudable anxiety to protect the persons of the partially insane from unreasonable coercion, it is equally incumbent on these courts to protect the public from the consequences of that liberty of action which is thus secured to the partially insane. Their liabilities ought to be commensurate with their privileges.

In the recent trial of Martha Brixey, for the murder of an infant, at Greenwich, in which a verdict of homicidal mania was very properly returned, Mr. Clarkson contended, notwithstanding the general solution given by the Judges to the questions propounded to them by the House of Peers on the subject of mania, that "no general rule could be applied to cases of this sort; that each case must be dependent on the peculiar facts which surround it." I believe that Mr. Clarkson is quite right:—but if so, how can a common jury, thus left at sea, be competent to try, with safety to the public or the prisoner, these important cases? An adversaria of their conflicting verdicts would in truth be a valuable compilation. The homicidal mania of Nicholson, the murderer of the Bonars, and of Bellingham, the murderer of Mr. Percival, were both fully as capable of proof as that of* Miss Broadrick, the murderess of Mr. Errington, and of Macnaughten, the murderer of Mr. Drummond. The first pair were hanged; the latter pair received into a lunatic asylum!

* See Annual Register of 1795. See also Remarks, by T. Mayo, M.D. MED. GAZ. Vol. xxxiii. p. 333.

[To be continued.]

MEDICAL GAZETTE.

FRIDAY, JUNE 13, 1845.

THERE certainly appears to be a singular fatality about Sir James Graham's attempts to effect a reform of the medical profession. The obnoxious provisions of the first bill, evidently so constructed as to benefit one particular class, and degrade the other classes of professional men, met with the fate which all acquainted with the subject had anticipated at its first appearance. The cause of this may be assigned to the fact, that the bill embodied the opinions of a few individuals, who could not be practically acquainted with the wants of the profession, and were therefore entirely incapable of applying a remedy. It was hardly to be supposed that a measure, embodying the views of a few isolated persons, however eminent, would give satisfaction to all; and so strongly was this felt by the Home Minister, that the bill was introduced at a late period of the session into Parliament, not with a view of its being passed, but of its being placed in the hands of the profession for consideration and discussion. We think that the mistake here made,—*i. e.* of obtaining the views of the various classes of the profession by laying before them a document so partially constructed,—has tended to excite a strong feeling against all attempts to legislate from the same quarter. The proceedings of the introducer of the Bill have been narrowly watched;—although professing the most friendly and impartial feelings, he has had the misfortune to place himself at once in the position of an enemy; hence it is, that his subsequent attempts at medical legislation have been treated with a degree of suspicion, which they have hardly merited;—for, after all, much

of the apparent injustice may have been due to want of information on the subject, and not to a desire to degrade and injure any particular body of men. The second Bill was better than the first, and the third is, in some respects better than the second. Although in the latter there are some obnoxious provisions, yet surely the proper way to remove them is by proving that they are likely to operate unjustly, and not by heaping abuse on an individual, who, being a non-professional man, must be acquitted of all personal interest in the matter. If Sir James Graham's measures have savoured throughout of partiality to particular classes, to physicians and surgeons, let it be remembered that it is among them he has been chiefly thrown, and from them only he has doubtless received those hints respecting the reorganization of our profession, which appear to the mass partial and one-sided. There may have been an error in judgment here, but it was one into which every legislator was likely to fall.

The great points in any measure of this kind, should be, 1. to secure an equal and good education for all men entering the profession; 2. To give an equal right to practise in any part of the empire, to all who have received this education, and who, under an *equal* examination, have been found fit and competent. 3. To secure to the profession, by law, those privileges which it is advisable they should possess, not merely for maintaining its respectability, but for the good of the public. These appear to us to be the principal provisions which any measure of medical reform, to prove satisfactory, should embrace: while all admit their value and importance, the greatest difference of opinion has arisen respecting the manner in which these provisions should be carried out, and the measure appears likely to be abandoned from a want of unanimity respecting

the details. With regard to the first point, we think it must be admitted that the Bill is satisfactory:—*i. e.* that in future, there will be a good and equal education for all who enter the profession. The compulsory apprenticeship will be abolished, and will probably be replaced by a residence of one or two years with a practitioner, before lectures and hospital practice are attended. In all cases *five years* must be devoted to professional studies: it has been objected, that these may commence earlier with the general practitioner than with the surgeon or physician, the one being able to take out a license at twenty-two, the others only at twenty-six; but this appears to us to be a somewhat capitious objection. A general practitioner is not bound by the act to commence his studies at seventeen, and to take out a diploma at twenty-two; he may, if he please, begin at the age of twenty-one, and go up for his examination, like the physician or surgeon, at twenty-six. If he chooses to commence earlier, that can be no fault of the bill, which leaves him the option; and if there be any degradation in a provision of this kind, he brings it entirely upon himself. We apprehend that had the age for the examination of general practitioners been fixed so high as that laid down for physicians and surgeons, there would have been a loud outcry against such a provision, both on the part of the public and the profession. As it is, the rule will operate favourably to the College of General Practitioners, for there can be no doubt that, for one who is examined by the Colleges of Physicians and Surgeons at twenty-six, at least twenty will be examined as general practitioners at the age of twenty-two. The assurance that there will be one uniform standard of education, under the control of the Council of Health, in which not only all classes of the profession, but also the Universities and Colleges of England, Scot-

land, and Ireland, will be equally represented, should allay that suspicion which had been justifiably excited by some of the clauses of the second bill. We are induced to take this as a *bonâ fide* assurance that there will be no partiality shown to the schools of either of the three countries.

With regard to the second point in the measure, that is, equality of examination, there is greater difficulty. We endeavoured to show, on a former occasion, that it was unfair to apply an initiatory examination, whether medical or not, to English candidates only; and we hope to see this objection removed. The fact of teachers being examiners of their own pupils, is certainly an obstacle which it is not so easy to overcome. If the teachers of every large hospital school in London were, under the powers of a charter, to have the privilege of determining the fitness of their own pupils for practitioners, it is easy to conceive what abuses would arise;—and it is also easy to imagine, how eloquently and universally such a system would be denounced as derogatory to the profession: yet the bill suffers this principle to continue in operation with respect to Scotland, and the only remedy proposed is that of appointing assessors. We must admit, however, that it is more easy to point out the objection than to suggest a remedy under the circumstances.

In relation to the third great feature of medical reform, that is, securing certain privileges to the profession,—in our judgment the present measure falls far short of what it ought to accomplish. Unlicensed practice is not sufficiently checked. It is true that the quack cannot recover charges for medicine and medical attendance; but how can this be regarded as the denial of an important privilege, when the registered physician and surgeon are placed by the act in precisely the same position? The power of prosecuting

all except registered practitioners is continued to the Apothecaries' Society; but the value of this concession may be appreciated, when we consider that from the difficulty and expense attending such prosecutions, the power is likely to continue in abeyance. Even where the action is successful, the amount of penalty (in the shape of law expenses), is sixteen times greater upon the Society than that leviable on the defendant under the act*! The chemists and druggists have, it appears to us very unnecessarily, objected to the new bill, on account of the introduction of this clause (the 36th.) Prosecutions are not likely to be instituted where three hundred pounds are to be spent for the recovery of twenty; and they may therefore consider themselves, with all other unlicensed practitioners of medicine, as quite secure from the interference of the Apothecaries' Society. The Home Secretary must have been well aware that the privilege which he thus made a merit of conceding, was of little value; for, in introducing the former bills, he had made this fact the strong ground for the abolition of all restrictions on the practice of medicine.

We believe, from the disposition manifested by the House of Commons, that there is not at present the slightest prospect of any measure being carried which imposes a penalty by summary process on unlicensed practitioners. There is, we are sorry to say, too great a disposition, in the present day, not merely in the public, but even in some members of our profession, to encourage quackery. They allege that it cannot be put down, and this is considered to justify the legislature in not making any fair attempt to suppress it.

* "Six actions for penalties, which were tried within a comparatively recent period, were conducted at an average expense to the Society of £320 each! It should be stated, that in one of these actions (viz. that of the Society v. Greenhalgh), there were two trials."—*Statement of the Society*, p. 31. 1844.

To call the 36th clause a penal clause against quackery is preposterous, since it falls much more heavily on the prosecutor than the prosecuted.

The general practitioners are obviously divided about this measure; and it is difficult to decide at present whether the majority are for or against it. It gives them a College, and it will give them power; for there can be no doubt that the large majority of those who may hereafter enter the profession will become fellows of this College. If not represented in the Preliminary Board of Examiners, they may content themselves with the reflection that they are represented in the Council of Health, which exercises a control over this Board. Men must find their way into the profession, and under this act a far greater number of general practitioners are likely to be created than physicians or surgeons; hence the Preliminary Board must give their license to candidates for examination rather according to the wants of the public than according to their own particular views. With these considerations, and with the known admission of the Home Secretary, that all hope of reconciliation with the College of Surgeons is at an end, it seems surprising that the battle should now turn upon what we may call the small items of the bill—*e. g.* questions of title and precedence.

We do not wish to undervalue the utility of a good system of registration; and if some correspondents who have addressed us on this subject had read the remarks which we have already made*, they would have seen that we are advocates of an open, and not of a restricted system of registration. A general practitioner, who is a member of the College of Surgeons, should be allowed to register as such, and as "surgeon," without losing any of his

* Vol. xxxv. p. 870.

privileges; and any practitioner possessing a regular diploma of a physician, should also be allowed the advantage of a double registration, with the privilege of calling himself "physician" at his option. To deny this is to deprive either of a right already acquired, and it is not credible, whatever may be done prospectively, that such an act of injustice will be perpetrated by the legislature.

WE print in another page (p. 299) a document which we presume must be considered as the ultimatum of the Council of the Royal College of Surgeons in England, with respect to the New Medical Reform Bill. It is a document of some importance at the present moment, and clearly shows:—

1. That the College is disposed to give every opposition to the new bill in its amended form; and 2nd, that there is no hope of compromise or conciliation. Some of the conclusions to which the Council have come, are such as we had anticipated. Thus, they object that English surgeons only, are required to undergo a double examination; and they intimate that but few will seek the diploma of the College, as all who submit to the *second* examination by the College of Surgeons, must enter into the "higher grade" of Fellows. Such, undoubtedly, will be the evil effects of the measure with the College of Surgeons; but have they not brought the evil upon themselves? They have used the power of their new charter in such a way as to give just cause of offence to a large body of their members. Granted that the title of Fellow "was intended to designate the highest professional qualifications of physician or surgeon," it cannot be said that the Council have acted on this principle in their selection of Fellows, or we should not have had the discontent which now prevails. The opposition of the College, com-

bined with that of a large body of practitioners, and of the chemists and druggists, will probably lead to a result which we believe has been for some time anticipated, namely, the withdrawal of the Physic and Surgery Bill.

Reviews.

Modern Cookery, in all its Branches: reduced to a System of Easy Practice, for the use of Private Families. By ELIZA ACTON. 2d Edition. London: 1845. Longman and Co.

WE have always had a taste for cookery; we like things well done, everywhere and at all times; we more especially like our meat well dressed: good meat first, good cooking second. How often have we to thank God for his providence in sending excellent meat, and to ban the devil for sending execrable cooks! Under certain circumstances, indeed, we are not sure that the cook is not the more important particular. What delicious messes do these Frenchmen send up out of a most indifferent raw material! and how commonly do our English slatterns spoil the most picturesque beef, the loveliest mutton in the world; delivering over to us, on our tables, mere *caput mortuum*s of things which, until they put their accursed hands to them, teemed with excellence! Providence, with our love of letters and of learned leisure, afflicted us with an indifferent stomach; our digestion is not strong; therefore are we the more dependent on the cook, whom our experience enables us to proclaim a more effectual aid to digestion than all the physic that either the east or west supplies. We have a sincere respect for our cook; we cherish and make much of her, and consult her upon the chemistry of the kitchen as we should Mr. Faraday on a point of inorganic analysis, or Sir John Herschel on a problem in physical astronomy. And wherefore not? Some pretend to despise cookery, and even presume to hold him cheap who thinks it worthy of his serious consideration. We, for our own part, have always declined any converse with parties guilty of holding such discreditable sentiments. Would the monsters eat their meat raw? Surely

they would not. The question, therefore, is one of kind or degree: shall we be content to have our food ill cooked, or shall we strive to have it well cooked? That is the question; and, in our apprehension, there can be but one way of answering it.

Man is emphatically "a cooking animal." No other creature dresses its food; yet many animals relish well-dressed and even highly-seasoned viands. Our old friend Pincher, a wiry-haired terrier of the Scotch breed, and a great pet, turned with disgust from a ration from the dogs'-meat man; but he smacked his lips at a hash with a rich gravy, containing plenty of Harvey and a touch of Chili-vinegar. The stoat, it is said, will store his meat till it is somewhat high; man does as much with his venison, his woodcock, his grouse, &c.; but your weasel does not cover his haunch with "a nice crust to preserve the fat;" nor does he roast it before "a sound clear fire from three hours and a half to four hours and a half, according to the weight." (Acton, p. 273). Your fountmart likes a partridge or a hare, and diets on him as often as possible; but he eats both *au naturel*—the bird without bread-sauce, the lion without stuffing or currant-jelly. The only food that Providence seems ever to have intended man to eat raw is fruit. We excuse the cook in regard to the cooling grape, the refreshing orange, the luscious pear, and the like. But man's industry and ingenuity have even come to the aid of organizing nature here; they have, in some sort, done the cook's part whilst the fruit was still hanging on the tree—nay, even before it was in the blossom: for what has nature presented us with in the shape of apples? Crabs! Yet Nature's crab have we turned into the Newtown pippin, and the nonpareil. And what has she given us by way of pears? Knobs of wood, that might make tops to walking-sticks, but that not even Papin's digester could convert into palatable or wholesome food; yet out of these wooden bullets have we won the Williams, the Bon Louis, the Marie Louise, the Chaumontel, &c. And so of others. And, more than all this, hath not the skill, the cookery of man, out of a cluster of sour berries, like peas, produced, first racemes that weigh pounds, and drop sugared nectar, and next, and greater triumph than

all, converted this sweet juice into generous wine—wine that rejoices the hearts of gods and men! But we seem to forget Mistress Acton,—though this is not so; we merely preface for a brief season, that we may introduce her more worthily to our friends.

And who that has watched the recovery of man, or woman, or innocent child, from a sore sickness, has not felt the want of the little niceties which only the kitchen, worthily presided over by some high priestess, can supply? And how shall we be prepared rightly to direct the priestess in her ministrations if we have not some skill in the humanities of the kitchen? We have saved life oftener than once by our small science in this way; and had we had Mrs. Acton twenty years ago, we now fancy that sundry souls which have bid us adieu might have been kept for some little time longer in the land of the living.

Mistress Acton writes well, to the point, and like a woman of sterling sense; her preface ought to be printed on a broadside, and taught to all the young ladies at all the boarding-schools, and all the day-schools, whether boarding or not, in England.

"The proper and wholesome preparation of our daily food," she says, "though it may hold, in the estimation of the world, but a very humble place among the useful arts of life, can scarcely be considered an altogether unimportant one, involving so entirely, as it does, both health and comfort.

"England is, beyond most other countries, rich in the varied and abundant produce of its soil, or of its commerce, which, in turn, supply to it all that the necessities or the luxury of its people can demand; yet, until within very recent years, its cookery has remained far inferior to that of nations much less advanced in civilization; and foreigners have been called in to furnish to the tables of our aristocracy, and of the wealthier orders of the community, those refinements of the art which were not to be obtained from native talent.

"Our improvement was for a long time opposed by our own strong and stubborn prejudices against innovation in general, and against the innovations of strangers in particular; but these, of late, have fast given way before the more rational and liberal spirit of the times: happily for ourselves, we have

ceased to be too bigoted, or too proud, to profit by the superior information and experience of others upon any subject of utility. The present age is one of rapid and universally progressing knowledge; and nothing which is really calculated to advance either the great or the *small* interests of society is now regarded as too homely or too insignificant for notice. The details of domestic economy, in particular, are no longer sneered at as beneath the attention of the educated and accomplished; and the truly refined, intelligent, and high-minded women of England have ceased, in these days of comparative good sense, to consider their acquaintance with such details as inconsistent with their dignity, or injurious to their attractions:—and who can direct their households with the same taste, the same judgment, and the same watchful care for the comfort of others as themselves? Who, indeed, can guard *all* the interests of home as they can? And surely a woman does not preside less pleasingly in her own immediate circle, nor do the honours of her table, or of her drawing-room, with less grace and propriety, for having given some portion of the day to the examination and control of her domestic affairs; it is rare, too, we should suppose, for a husband to be otherwise than grateful to his wife for the exertion of a surveillance which, if steadily and judiciously maintained, will affect his expenditure beyond all that a careless calculator would imagine possible.”

There is no question of it; and the language, with the single exception of the French word, is even as good as the matter. Nor would the feelings of the husband be limited to gratitude for due administration of household affairs in reference to the exchequer. The attentions of a kind wife to her husband's tastes and likings in the matter of his daily food are always well taken. The meal that bears testimony to the good housewife's thoughts of us in our absence, and whilst engaged in the jostle of the world, has ever a flavour of its own, and becomes the occasion every day of renewing the bond of affection that was writ down long years ago. It is not the mere meat; we can satisfy the cravings of nature at the chop-house or the club; it may not be the perfect success of the thing at-

tempted: it is the purpose that wins our hearts. One of the beautiful pictures left us by antiquity is that of the Roman housewife preparing for her husband's return at evening, getting ready the hot water (for tea, of course), against that great event in the day's occurrences.

But the fact is older than either Horace or Virgil, if John Milton can be trusted.

“And Eve within, due at her hour, prepared
For dinner savoury fruits, of taste to please
True appetite, and not disrelish thirst
Of nectareous draughts between.”

And then, when she sees that she is to have company, she proceeds to add to the entertainment already provided for her husband:

“With despatchful looks in haste
She turns, on hospitable thoughts intent,
What choice to choose for delicacy best,
What order so contrived as not to mix
Tastes, not well joined, inelegant, but bring
Taste after taste upheld in kindliest change.

Fruit of all kinds
She gathers, tribute large, and on the board
Heaps with unsparing hand; for drink the grape
She crushes, inoffensive must, and meaths
From many a berry and from sweet kernels
pressed,
She tempers dulcet creams.”

And let it not be forgotten that the divine bard himself, whom we quote, was by no means indifferent to his diet, and the way it was served. “God have mercy, Betty, (speaking to his wife, Elizabeth Milton, for soe hee usually called her) I see thou wilt performe according to thy promise in providing mee such dishes as I think fitt whilst I live, and when I dye thou knowest that I have left thee all.”*

We shall not pretend to follow our excellent authoress through her book; nor shall we even pretend to quote from amongst the receipts, which we think particularly good; we can but condescend on generals here, and therefore turn we to the Introductions to the several divisions or sections into which the subject of culinary chemistry naturally divides itself. The first treats of *Soups*; and see with what admirable preliminary observations Miss Acton presents this interesting topic to her readers.

“The art of preparing good, wholesome, palatable soups, *without great expense*, which is so well understood in France, and in other countries where they form part of the daily food of all classes of the people, has hitherto been

* Milton's Nuncupative will.

very much neglected in England ; it is one, therefore, to which we would particularly direct the attention of the cook.

"The spices and other condiments used to give flavour to soups and gravies should be so nicely proportioned that none predominate nor overpower the rest ; and this delicate *blending of savours* is perhaps the most difficult part of a cook's task : it is an art, moreover, not easily acquired, except by long experience, unless great attention be combined with some natural refinement of the palate.

"A zealous servant will take all possible pains, on her first entrance into a family, to ascertain the particular tastes of the individuals she serves ; and will be guided entirely by them in the preparation of her dishes, however much they may be opposed to her own ideas, or to her previous practice.

"Exceeding cleanliness, both in her personal habits and appearance, and in every department of her work, is so essential in a cook, that no degree of skill, nor any other good qualities which she may possess, can ever atone for the want of it. The very idea of a *dirty cook* is so revolting, that few people will be induced to tolerate the reality ; and we would therefore most strongly urge all employed in the culinary department of a household, who may be anxious for their own success in life, or solicitous to obtain the respect and approbation of their employers, to strive to the utmost against any tendency to slovenliness of which they may be conscious, or which may be pointed out to them by others.

"*A few directions to the cook.*—In whatever vessel soup is boiled, see that it be perfectly clean, and let the inside of the cover and the rim be equally so. Wash the meat, and prepare the vegetables with great nicety before they are laid into it ; and be careful to keep it always closely shut when it is on the fire. Never, on any account, set the soup by in it, but strain it off at once into a clean pan, and fill the stock-pot immediately with water : pursue the same plan with all stews, pans and saucepans directly they are emptied.

"Skim the soup thoroughly when it first begins to boil," &c.

This is the very essence, according to our notion, of good cookery. Principles are everything ; and Miss Ac-

ton's moral principles are not less worthy of commendation than her scientific principles.

We must quote further from the introduction to Chapter IV., which treats of Sauces, as involving other principles.

"The difference between good and bad cookery can scarcely be more strikingly shown than in the manner in which sauces are prepared and served. If well made, appropriate to the dishes they accompany, and sent to table with them as hot as possible, they not only give a heightened relish to a dinner, but they prove that both skill and taste have been exerted in its arrangements. When coarsely or carelessly prepared, on the contrary, as they too often are, they greatly discredit the cook, and are anything but acceptable to the eaters."

The directions as to boiling, roasting, stewing, broiling, frying, &c., are each more worthy of commendation than the other, and made canons by any she, and tastfully applied, are competent to constitute her an accomplished cook. We feel that in simple justice to Miss Acton we must quote her perfect principles of broiling.

"Broiling is the best possible mode of cooking and of preserving the flavour of several kinds of fish, amongst which we may specify mackerel and whittings ; it is also incomparably superior to frying for steaks and cutlets, especially of beef and mutton ; and it is far better adapted, also, to the preparation of food for invalids ; but it should be carefully done, for if the heat be too fierce, the outside of the meat will be scorched and hardened so as to render it uneatable ; and if, on the contrary, it be too gentle, the gravy will be drawn out, and yet the flesh will remain so entirely without firmness, as to be unpleasant eating. A brisk fire *perfectly free from smoke*, a very clean gridiron, tender meat, a dish and plates as hot as they can be, and great despatch in sending it to table when done, are all essential to the serving of a good broil. The gridiron should be well heated, and rubbed with mutton suet before the meat is laid on, and it should be placed slopingly over the fire, that the fat may run off to the back of the grate, instead of falling on the live coals and smoking the meat : if this precaution should not prevent its making an occasional blaze, lift the

gridiron quickly beyond the reach of the smoke, and hold it away until the fire is clear again."

The whole of Mrs. Acton's receipts, "with a few trifling exceptions, which are scrupulously specified, are confined to such as may be perfectly depended on from having been proved beneath our own roof, and under our own personal inspection." We add, moreover, that the receipts are all reasonable, and never in any instance extravagant. They do not bid us sacrifice ten pounds of excellent meat that we may get a couple of quarts of gravy from it; nor do they deal with butter and eggs as if they cost nothing. Miss Acton's book is a good book in every way; there is right-mindedness in every page of it, as well as thorough knowledge of the subject she handles.

Prize Clinical Report of Surgical Cases treated at the Queen's Hospital, Birmingham, in the Practice of W. SANDS Cox, Senior Surgeon. By JOHN MOORE, Student of Queen's College, &c. London, 1845. 8vo. pp. 65.

MEDICAL teachers are at length beginning to adopt plans in the examination of their pupils, which are really tests of practical knowledge. A few years ago the man who was the hardest reader, or who had the quickest memory, even although he had never thoroughly examined a single case, was certain to gain the prize from his competitors, however they might excel him in actual knowledge of disease. Now, the wards are often made the scene of examination, or the questions are so given that none but a practical man can gain distinction by his answers. This has long been understood on the continent:—did our public examining bodies adopt a similar mode of testing the capabilities of the candidates for their diplomas and licenses, they would no longer have any opportunity of avowing that they authorised men, who had merely a *bare sufficiency* of professional acquirements for ordinary exigencies, to practise upon the health of her Majesty's lieges!

The pamphlet before us contains twenty-six surgical cases, with remarks. The neat manner in which they are reported does equal credit to the mode of teaching adopted at the school, and to the ability and promise of the successful candidate. Some of the cases are

very interesting, especially the following:—Case II., recovery from a severe internal injury: V., an instance of the rare dislocation, backwards from the trapezium, of the first phalanx of the thumb: XV., laceration of the iris, from a blow, without any corresponding wound of the cornea: XX., encysted tumor of the cheek, containing a fatty fluid, suspending plates of cholesterine: XXVI., lithotritry in a man upon whom the perineal operation for lithotomy could not have been performed, in consequence of extreme narrowing of the pelvic outlet, from strumous disease of the bones. The case proved fatal under treatment, and, as is almost the invariable rule in such instances, the kidneys were found mottled and otherwise diseased.

A Practical Treatise on the Special Diseases of the Skin. By M. C. M. GIBERT, Physician to the Hôpital Saint-Louis. Translated by EDGAR SHEPPARD. Second Edition. London, 1845. 8vo. pp. 362. Churchill.

THIS translation of M. Gibert's work will be found a very useful and a very convenient manual by students and junior members of the profession,—not that it is a mere elementary outline of the class of diseases of which it treats; its author is evidently a thoroughly practical man; and, although the volume is a small one, its closely-printed pages contain a large fund of condensed information and elaborate research. A thorough knowledge of all the forms of skin diseases is indispensable in every one who aspires to the distinction of being considered a well-informed medical man. The months of a summer season can scarcely be more advantageously employed by the student than in studying these affections in the wards of one of our large hospitals; and in doing this, M. Gibert's volume, aided by reference to the more extensive illustrated works of Willan and Bateman, Alibert and Rayer, will be found a very efficient guide. This treatise has also the advantage of being "readable," which very few works upon the subject are, having many cases and other interesting illustrations introduced into it. We think its readers will concede to the author his full right to use the modest epigraph which he would fain affix to his manual—"Parva sed apta."

Proceedings of Societies.

MICROSCOPICAL SOCIETY.

May 21, 1845.

J. S. BOWERBANK, Esq. F. R. S. in the Chair.

A PAPER was read by Mr. John Quekett—

On the Structure of the Flabella of some of the higher forms of Crustaceæ, with some remarks on their probable use in the function of Respiration.

The author commenced his paper by describing briefly the different forms of the respiratory apparatus met with in the lower orders of Crustaceæ, and then entered more at length into the structure of the branchiæ of some of the higher forms, such as the common crabs and lobsters; in the former of which he stated that the proper branchiæ were seven in number on each side, and that each branchia was composed of a septum, on two sides of which were arranged numerous lamellæ or plates of a quadrangular figure; on the upper and outer edge of each lamella was developed a hook or spine. The flabella or sweepers consisted, in the most cases, of a horny flat filament, with numerous hairs attached to its edges, and to its under surface as well; and on an examination by the microscope of these hairs, they were found to be scimitar-shaped; and numerous large hooks and most bristly hairs, all of which were inclined backwards, were developed on their convex edge. And it having been denied by Dr. Milne Edwards and others that the use of the flabella was that of causing currents of water to pass through the branchial chamber, Mr. Quekett was induced to believe, from his investigations, that the true use of these organs was that of separating the branchial laminae one from the other, so that the water might readily penetrate between them; the arrangement of the spines on the hairs, and on the branchial laminae as well, being such as to reduce this movement, when the hooks on the hairs come into contact with those on the branchial laminae.

Mr. Powell exhibited and described a newly-constructed portable Microscope. It contained in a case, $8\frac{1}{2}$ in. long, $5\frac{1}{2}$ in. wide, 2 in. deep, possessing rack and fine adjustments to the optical parts, $\frac{1}{2}$ inch of motion to the stage in rectangular directions, with $\frac{1}{4}$ inch, $\frac{1}{2}$ inch, and 1 inch object-glasses, forceps, and animalcule cage. Higher powers may be added, as it is sufficiently free from tremor to bear the highest at are made.

A letter was read from Mr. T. Boys, giving a description of his method of mounting objects in Canada balsam, by

which he is enabled to avoid air-bubbles. Having provided a small single-wick oil lamp with a chimney, slips and thin pieces of glass, nippers, a pointed iron wire in a wooden handle, and some of the clearest Canada balsam diluted with the best spirits of turpentine to a consistency to allow it to drop readily from the point of the wire, a slip of glass is to be fixed in the nippers, and a sufficient quantity of Canada balsam is to be taken up on the end of the wire to allow a full drop to be placed on the slide where required. The centre of the slide is then to be rested across the chimney of the lamp, until the balsam begins to spread, when it should be immediately withdrawn. The object is now to be placed on this drop of balsam, and covered with another drop. The slide may now remain for two or three minutes, to allow the balsam to penetrate the object. The thin glass is then to be placed as nearly horizontal as possible, upon the balsam covering the object. Now, holding the slide in rather an inclined position at one end by the nippers, place the other end over the centre of the chimney of the lamp, the balsam gradually liquefies, and flows to the extreme edge of the thin glass, carrying with the surplus all air-bubbles on that side. The same process is to be repeated with the other end of the slide; after which it is to remain in a horizontal position until nearly cool, when the centre of the upper or thin glass is to be pressed with a small piece of wood, rather pointed. This expels all superfluous balsam, and with it any extraneous matter. Should after this any air-bubbles be generated by the object, they will disappear in a few days.

Medical Trials and Inquests.

ALLEGED NEGLECT OF A PAUPER PATIENT IN A LUNATIC ASYLUM.

ON the 14th ult. an investigation was resumed before Mr. Wakley, with respect to the circumstance involving the death of William Holding, aged $16\frac{1}{2}$ years, lately an inmate of Peckham-house Lunatic Asylum, where he had been placed by the authorities of the parish of St. Mary, Newington, to which parish he belonged.

Sarah Holding, the mother of the deceased, was the first witness called. She said—I am a widow, and reside at 32, Munster-square. The deceased was my son. He had been ill for some months before his death, which took place on the 18th of April, at 7 in the evening, at my house and in my presence. He had been an inmate of Mr. Armstrong's Peckham-house Lunatic Asylum, from which I had

fetched him about three weeks before. He was in the lunatic asylum about five weeks, but a week before had been in the workhouse of St. Mary, Newington, to which I took him. A few days before I took him to the workhouse he became insane, and so violent that I could do nothing with him. I saw him once or twice during the time he was in the workhouse, and I have nothing to complain of with respect to his treatment there, except that I thought they had tied him down to the bed too tightly. The last day I saw deceased at the workhouse was on a Friday, and I was told he was going to be moved that day to Armstrong's asylum. *There were no sores or bruises on his person whatever when he went from home to the workhouse.* For two months before he went to the workhouse, Mr. Stuart, a medical gentleman, attended deceased for ill health. I did not see any wounds or sores upon his person on the day he left the workhouse for the lunatic asylum. After his removal to the asylum on Friday, I went there to see him on the following Monday. He was then in what they called the first building, and when he saw me he knew me. He was then lying on what I was told was a water-bed. I was not allowed to see him alone, and I had not been there more than five minutes when the keeper said "There, that's enough, bid your mother good by;" and I then left. There were some other patients in bed in the ward at the time. I went on another occasion to see deceased, on a Thursday, but that not being the regular day I was not allowed to do so. I did not see him again in the asylum, but my sister did, and I stayed downstairs. I caused him to be removed from the asylum, as I thought he was ill-treated. It was on a Wednesday, when he came away. He seemed in great agony, for they had pulled his trousers over his sores, on his hips and back, and when he got home they were completely saturated with the discharge from the wounds, and I was forced to cut his trousers from his body to get them off. His legs were quite contracted, so that he could not stand or sit, and he was too insensible to make any statement as to his treatment. Mr. Stuart attended him after he came from the asylum, but he was first seen by two other medical gentlemen, by one on the day he came home; they both said he had been neglected.

By the Coroner.—The deceased when at home used to sleep in a bed; he usually lay on his side. I think Mr. Stuart saw deceased three days after he came home from the asylum.

Mr. Alexander Patrick Stuart examined.—I am a graduate in medicine, and reside at 130, Hill-street, Berkeley-square. I first attended deceased as a patient of the St.

Pancras General Dispensary, with which institution I am connected. Mr. Hardwick, the surgeon of the dispensary, had attended him before me. I found him labouring under mental excitement, but not to a great extent. In two or three days after, his excitement increased considerably, and I ordered cupping between the shoulders, which afforded great relief. This was a few days before he went to Newington workhouse. When he left my care to go there deceased was not much emaciated. *His body was perfectly sound, and there were no sores whatever upon it.* I again saw deceased on the 1st of April, after his return from the asylum, and understood he had returned three days before. His condition then was such that I never saw in all my medical experience anything approaching to it. He was in a state of the most extreme emaciation, had no sense, was pulseless, and his skin quite cold. There were wounds covering the whole of both hips and haunch bones, which presented themselves quite bare, and there was a large sloughing sore at the bottom of the spine. The sores were in the most unhealthy condition. I ordered them to be washed with chloride of soda, which greatly improved them. The bones of the lower part of the back were also entirely bare. The parts were in a state of mortification.

The Coroner.—What do you believe to have been the cause of those wounds you have described?

Witness.—I am not aware that they would be likely to be caused by anything else than the pressure arising from the continual lying on those parts. They are what are termed bed sores, which I have had considerable opportunities of seeing in all their stages, having been for several years in the Fever Infirmary at Glasgow. I may say I have seen thousands of cases, but in all my life never one in the least approaching this. The best preventive to these sores is to keep the patient dry and clean, changing the bed frequently, and preventing pressure. Whether the patients be on water-beds or not, such change is absolutely necessary. I have had patients under me with dropsy, who have lain in bed four months together, and with care little or no bed sores have appeared. I have since death examined the deceased's body anatomically. The same appearances exhibited themselves as those I have already described before death. I found great disease of the brain and its membranes. There was a considerable quantity of matter in the ventricles, as well as on the surface of the brain, but there was no paralysis.

The Coroner.—Then, to what do you attribute the immediate cause of death?

Witness.—I should say the immediate

cause of death was exhaustion from the discharge of the bed sores.

The Coroner.—We are here to ascertain what is the cause of death, and it appears that you have found, on opening the body, two classes of disease. Now, we want to know positively whether the deceased has died from the natural disease of the head, or the wounds on the body, because if he has died from the former, our inquiry ends; but if he has died from the latter cause, then it will be our duty to ascertain whether that cause has arisen from any neglect or cruelty rendering certain individuals responsible to the law. Suppose, Mr. Stuart, on examining the body, you had found no wound whatever, would you then say there was sufficient disease in the head to account for death?

Mr. Stuart.—Without any other circumstance, I should say certainly, but taking the two together the sores are the most likely to have caused death.

The Coroner.—Now be pleased to state to the jury your decided opinion as to the cause of death.

Mr. Stuart.—My decided opinion is, that the cause of death was the bed sores, and, had death occurred a fortnight sooner, I should have had no hesitation in stating that it was from want of proper treatment in the lunatic asylum.

Mr. R. Liston, examined.—I am surgeon to University College Hospital, and reside in Clifford-street, Bond-street. I examined the body of the deceased with Mr. Stuart after death, and concur in the opinion he has given. The extensive sores on the body were quite sufficient to account for death. I never in all my experience before saw such extensive bed sores. There was also sufficient disease in the head to account for death.

The Coroner.—Ay, there is the difficulty we are in. *Either of the two diseases was sufficient to account for death, but the question is, which did really kill the patient?* Now having heard the history of the case, Mr. Liston, from Mr. Stuart, what do you say is the cause of death?

Mr. Liston.—I think the most probable cause of death was the bed sores.

The Coroner said it was now their duty to see whether those sores were created at the workhouse or the asylum, and inquired if there were any witnesses in attendance from Newington workhouse.

Weale, the summoning-officer, replied in the affirmative, and said that the master had kindly offered him every facility in procuring evidence.

Edward Coppin, a pauper, who slept in the next bed to deceased during the week the deceased was an inmate of Newington workhouse, was then called, and proved

that when he left to go to the asylum the deceased had not a blemish on his body, and that he had his bedclothes changed three or four times a-day.

Mr. G. J. Lowndes examined.—I am surgeon to Newington Union-house. Whilst deceased was there there was no bruise or sore on his body; nothing but a slight blush on the hips and back. He was emaciated, and I ordered him boiled mutton daily, and beer and other nourishment, and gave orders to the wardsmen to keep him clean and dry. I did not see deceased after he went to the asylum, nor did any one else, that I know of.

Robert Birkbeck, of 65, York-road, Lambeth, proved that at the period of the deceased's admission to the asylum he was keeper at Mr. Armstrong's asylum, and had the care of him for a fortnight. For the first four days he lay upon a straw bed, and then was removed to a water-bed. There was a kind of blush on the hips and back when he came in, but not sores. It was his duty to clean deceased, but he frequently got some of the insane patients to do it. The keepers were allowed to do so if the patients liked, but they were not allowed to force them to do it.

By the Coroner.—In the yard where I was there were 56 patients, and we had three keepers over them. We had fourteen cells downstairs, 2 dining-rooms, 6 rooms upstairs, and an infirmary. The deceased afterwards had sores, and they got worse. I then washed them with a certain wash Mr. Hill gave me. The deceased lay on his side mostly, coiled up like a hedgehog or a dog. He always lay on the side on which he was put, and had no power to turn. The witness at some length proceeded to praise the arrangements of the asylum, when,

The Coroner remarked, that it might be a very nice place, but he for one would try and keep out of it as long as he could. (Laughter.)

George Page.—I have been a keeper at Peckham-house for nine months, and took charge of deceased after Birkbeck left. He had been in my care for three weeks, and during that period lay on a water-bed. He had sores on his hips and the small of his back, which increased, and were washed twice a-day, and had ointment applied to them. His mother took him away after I had him. The second time that his mother or aunt visited him she was with him half an hour.

Mr. James Hill.—I am surgeon to the Peckham Asylum. My attention was called to the deceased in half an hour after his admission. He was extremely emaciated, and his limbs were contracted. He then had sores on his hips and the lower part of his back, from which there was a trifling discharge. Those sores arose apparently from

lying. Simple dressing was applied to them. He remained in the asylum between four and five weeks. Little or no change took place in the wounds during that time. From the first there was no chance of his recovery. Every attention was paid him, and he had such diet as his case required. His mother, at her own request, was allowed to remove him. The Commissioners of Lunacy saw him, but did not examine him. The skin was off the ulcers, and a blush of red was round the edges. The wounds were as bad when he left as they were when he came in.

Mr. Stuart re-called.—The wounds extended over both hips. I never saw any thing equal to them, and they were also sloughy.

Mr. Hill (to the Coroner).—I undoubtedly saw him within the fortnight before he left the asylum.

Mrs. Holding.—So bad was the discharge from the wounds on the day he left the asylum, that it ran through his trousers.

George Page recalled.—When we dress patients' wounds the doctor is not always present, nor does he dress them unless a keeper attends. Mr. Hill examined deceased almost every morning. I swear that he visited deceased's ward the week deceased left. His hips were in a peculiar state, and the wounds were the size of a five-shilling piece. The wounds were half as large again when he left as they were when he came in.

Mrs. Holding.—The wounds on the hips were as large as my hand, and on the second day after his removal from the asylum it was found that his bones were bared.

Mr. Lowndes recalled.—When deceased left the workhouse the skin was on his hips and the bottom of his back. On those parts there was a mere blush, but not an atom of wound, not even an abrasion.

The Coroner (to Mr. Hill).—How do you reconcile those statements of Messrs. Lowndes and Stuart, and also of the mother, with yours?

Mr. Hill.—To the best of my opinion, there were abrasions on the first day of his admission.

The Coroner.—The only way that I can account for the contradiction is by supposing that you did not see deceased for some time before he left. Do the commissioners examine into the medical treatment of the patients?

Mr. Hill.—Their examinations are confined to a few general remarks; they do not minutely examine every case, and receive not a written, but an oral report.

Mrs. Green.—I am Mrs. Holding's sister. When deceased left his mother's he was free from sores, and could stand up. Three weeks after his admission to the lunatic asylum I saw him. I brought him

some oranges; but as I saw that he had a black eye it prevented me from peeling one for him, and the keeper did. There was one keeper at the side and another at the foot of the bed. I was in the room from 5 to 10 minutes. I asked him if he knew me? Deceased laughed, and looked up in the keeper's face, as if he was afraid to speak. Although I was convinced that the black eye was the result of violence, I was afraid to say so, lest that violence might be repeated. He was not fastened down. He was too weak to require it. He lay on a horse-hair mattress. I attempted to feel his feet, but when I put my hands under the clothes do so, the keeper pulled down the bed-clothes, so that I could not touch his feet. He was lying on his left side, in which attitude he generally lay when at home. On leaving the asylum I implored the keeper, for God's sake, to treat deceased kindly. The wounds on his back looked as if an instrument had been drawn across them. The wounds were so frightful that I could not tell what appearance that part of his body presented.

Mr. Hill requested that Mr. Fidler, the visiting surgeon of the asylum, might be called; and accordingly,

Mr. Henry James Fidler was sworn, and deposed as follows:—I am visiting surgeon of Peckham Lunatic Asylum; I go to it once a week with Dr. Clutterbuck. I saw Holding there at least twice a week, and examined him two days after his admission. There were wounds of the size of a sixpence or shilling on his hips and lower part of his back, but no discharge. He was then on a water-bed. I saw him five days before he left. The wounds were then larger. He left on Lady-day. When it is deemed necessary, a report is made to me by Mr. Hill of the state of the patients.

Coroner (to Mr. Stuart).—You have heard the evidence, and have, no doubt, observed that it has been proved that deceased lay on his side, and not on his back. Can you now state the cause of the wounds?

Mr. Stuart.—The evidence is very contradictory, and renders it difficult for me to account for the sores, more particularly the one on his back, as it is stated he never lay on his back. The increase of the bed-sores was extraordinarily rapid, especially when the deceased was so emaciated. If proper care had been taken of him, the sores, which were more than five inches long, would, in all probability, have been arrested.

Coroner.—It is due to Mr. Hill and Mr. Fidler that those gentlemen who saw deceased immediately upon his return home should be examined, to ascertain his precise condition then. Messrs. Fidler and Hill state, that there were no wounds of any

extensive character when deceased left Peckham. If that be true, then some cause should be assigned for the extraordinary change that took place between the day he left the asylum and the day when Mr. Stuart saw him. I never saw such an extensive devastation as his body presented. I will now either sum up the evidence or adjourn, in order that other witnesses may be examined, as it may seem fit to the jury.

After a short deliberation, the jury expressed it to be their unanimous wish that an adjournment should take place.

In a few days the inquiry was resumed.

Mr. John Diamond, of No. 12, Rodney Street, Pentonville, was first called. He said, I am a surgeon, and have been for some months attending patients from the St. Pancras General Dispensary for Mr. Walter, my friend. I think I went to see the deceased on the 2d of April.

The Coroner said, that could not have been before Dr. Stuart saw deceased, which was on the 1st of April, and he understood the witness was called to prove that he saw deceased on the day after his leaving the asylum, which was on the 25th of March.

Mrs. Holding, the mother of the deceased, was called, and positively swore that Mr. Diamond saw her son on the day after he came home from the Asylum; and on her calling to that gentleman's attention that she brought a note from the Rev. Mr. Gordon, rector of Christchurch, Regent's Park,

Mr. Diamond said that circumstance had perfectly refreshed his memory as to the date, and he was now positive that he saw deceased on the day he received that note, and which was before the 31st of March. The witness then proceeded—When I saw deceased I thought his case hopeless. I examined his body; there were very large sores over both hips. The wounds were as large as the palms of my hands, and there was considerable sloughing at the time, the integuments being gone, the anterior superior spinous process being denuded, and the bones quite bare. I ordered a plaster on the wounds, but did not order medicine, as I considered the case hopeless. I am positive I saw deceased on the same day I received the note from the Rev. Mr. Gordon, and I recollect the mother telling me he had only come out of the asylum the day before.

Mr. Hill, the surgeon of the lunatic asylum, asked permission of the coroner to put some questions to the witness.

The Coroner said he would put any questions Mr. Hill thought proper, and in answer—

The witness replied, that the sloughing of the wounds was of a livid colour, and he was quite sure the bones presented them-

selves. He ordered a plaster on deceased's back to prevent pressure.

Mr. Hill here declared, that if the jury had the slightest impression that he had not seen the patient regularly whilst in the asylum, he could produce two of the patients in the same ward to prove that he had. They would also prove that whilst there, there was neither a black nor white appearance about the hips, but simply a slight pussy discharge.

The Coroner.—It is useless to bring insane patients to contradict the sworn testimony of sane witnesses.

Mr. Hill said he wished Dr. Clutterbuck, who was physician to the asylum, to be examined; but he wished to make some remarks with respect to the evidence he had given on Wednesday last. He was now ready to declare that if he did not see deceased and examine his body every day, he had done so every other day, during the five weeks he was in the asylum.

The Coroner.—There is no doubt but you may have visited the bedside of the patient, but the question is if you saw the ulcers at all. Your own evidence shows you did not.

Mr. Hill.—I can prove, if the jury have any doubt, that I examined the wounds three or four times a week.

The Coroner.—How can you reconcile, then, your statement that the deceased was no worse with regard to his wounds when he left than when he came to the asylum, with the statement you have yourself heard from Mr. Diamond, who saw the patient the day after he left it?

Mr. Hill.—I meant the wounds were comparatively slight as compared with what Mr. Diamond states.

Dr. Clutterbuck was then called, but could only speak as to the general condition of deceased, whose case he considered hopeless from the first. He saw him every Thursday, but never examined his body or prescribed for him, as it was a surgical, and not a medical case.

On the Coroner inquiring if there was any further evidence,

Mr. Hill begged, if any feeling rested in the minds of the jury that there was neglect at the asylum, that an adjournment might take place for the production of the patients. This, however, was overruled, on the ground that Mr. Hill ought to have brought his witnesses with him.

Mr. Wakley then at great length proceeded to recapitulate the evidence, and having done so, observed to the jury, that, painful as these inquiries invariably were, he believed they were calculated to work out the greatest good in enforcing the principles of humanity into the management

of private lunatic asylums. He believed that nothing would be more conducive to public good than that the same protection should be afforded to lunatics in private lunatic asylums, as was afforded to prisoners in the common gaols—namely, that in every case of death an inquest should be held. The great difficulty which surrounded the case was the extraordinary discrepancy in the evidence of Mr. Hill and that of the other medical gentleman, and he (the coroner) would not for one moment attempt to reconcile those statements. The jury had heard the evidence of the medical gentlemen as to the death. *Although there was sufficient disease in the head to have killed the deceased, still it was the opinion of those gentlemen that the deceased died from exhaustion, consequent on the discharge from the wounds;* and it would, therefore, be the duty of the jury to ascertain how those wounds were caused—whether they were the result of natural operation, the result of negligence, or cruel treatment. He (the coroner) had looked at the case in a medical as well as in his judicial character, and he was bound to say, his opinion was that the foundation of the disease was caused before the deceased went to the asylum; but with that the jury had nothing to do. It was quite clear there had been neglect during the time deceased had been in the asylum, the management of which could not be more clumsy. He (the coroner) would leave the case in their hands, with the simple remark, that it was rather by the publicity given to the proceedings than by harsh verdicts that good resulted to society in such cases as the present.

The court was then cleared of strangers, and after a discussion lasting upwards of an hour, it was re-opened, when

The foreman handed to the Coroner the following as the unanimous verdict of the jury:—

“That William Holding died from exhaustion produced by discharge from large wounds on his hips and lower part of his back, and that how those wounds were caused there was not sufficient evidence before the jurors to prove; and that although there was inflammation in his skin in the situation where the wounds afterwards appeared, such wounds did not exist when the said William Holding was admitted into Armstrong’s Lunatic Asylum at Peckham; whereas the fact is established that they existed in a most aggravated form when he was removed from the asylum; and that the jury are decidedly of opinion that the medical treatment of the deceased was cruelly neglected whilst he was in the asylum.”—*Times’ Report.*

REMARKS.—There was an uncertainty in

the evidence of the surgeon of the Asylum with reference to the degree of attention paid by him to the deceased, which, if it arose from embarrassment, as it very probably did, is much to be regretted. At his first examination, his own replies must have created in the minds of the jury the impression that he did not see his patient for a considerable time before that unfortunate person’s friends removed him. This belief could hardly fail to be induced when he used the expression, that he saw him within the fortnight before he left the Asylum, and when he gave no denial to the coroner’s supposition that he did not see deceased for some time before he left. These are not, however, by any means *certain proofs* that the surgeon did positively neglect his patient—his hesitating answer with regard to time, and his apparent tacit admission of the coroner’s inference, when taken in contrast with other and more express evidence, do not go for much—there was no positive evidence to show that the surgeon did not see his patient frequently. The keeper, Page, attested that he (the surgeon) examined deceased almost every morning; but the additional assertion of this witness, that the surgeon visited deceased’s ward the week deceased left, certainly tells for very little.

In the second examination, however, the surgeon stated “he was now ready to declare that, if he did not see the deceased, and examine his body every day, he had done so every other day during the five weeks he was in the Asylum;” and undertook to prove that he examined the wounds three or four times a week. He was, however, of course, not permitted to bring lunatic patients to give evidence on this point, but the statement of Page had already confirmed his declaration. In absence, therefore, of any proof whatever that Mr. Hill did not examine the patient at least three times a week, and in the presence of Page’s and his own declarations that he saw him often, the jury were, we conceive, not at liberty to conclude that he failed to do so. The visiting surgeon also saw the deceased twice a week during his residence in the Asylum, and five days before he left. It may be said, that the surgeons should have examined the sores oftener than they appear to have done. The necessity for this would depend greatly upon their confidence in the intelligence and care of their nurses: providing the sores were not increasing very rapidly (and in this instance there is no reason to believe that they did so until about the time of the patient’s discharge), and that they could trust to the nurse’s report of the state of the sores at each dressing, few surgeons would think it necessary to put the patient to the pain of being lifted, and of having his sores uncovered for their inspection oftener

than every other day. There is no reason to suppose that Holding's sores were "created" after his admission to the Asylum. It is evident that the redness which appeared upon the hips and back at the time deceased left the workhouse was the forerunner of sloughing, and we doubt if, at this stage of the disease, any means could have prevented sloughing from taking place. A great deal of stress was laid upon what was considered to be a discrepancy between the statement of Mr. Hill and that of the medical officer of the workhouse, with regard to the condition of deceased's back and hips at the time he left the workhouse and was received at the Asylum. It is probable enough that, when he entered the infirmary of the latter place, there may have been abrasions which did not exist a few hours before; but even, granting that there were no distinct abrasions when he was brought to the Asylum, it is not difficult to understand that, after the lapse of several weeks, the surgeon should have been rather uncertain whether there was or was not a solution of continuity at that particular time. At all events, the evidence of the visiting surgeon proves that, two days after his admission, the wounds were of the size of a shilling, rendering it evident that ulceration must have been, to say the least, upon the very point of commencing when Mr. Hill first saw the patient. It will be observed that when the visiting surgeon first saw deceased (two days after admission, the sores on the hips and lower part of the back being of the size of a shilling) he found him on a water-bed—an apparatus which, in some of our largest and richest hospitals, is not afforded to patients suffering from bed sores, or any other kind of complaint; but here this means of relief was very timely employed, and it is to be supposed that the deceased lay upon the water-bed during the whole of his stay in the Asylum. The witness, Page, swears that the sores were washed twice a day, and had ointment applied to them. If this testimony were true, and no facts were adduced to disprove it, the patient could not have been grossly neglected. There was no evidence to show that the sores increased very rapidly in size during the time the patient was in the Asylum; indeed, Mr. Diamond's evidence, that the sores on the hips were of the size of the palms of his hands, proves that much of the disease which produced the enormous ulcers found upon the body of the deceased must have occurred subsequent to that time. It appears very evident, too, that the rapid sloughing described by Mr. Stewart commenced about the time of the patient's removal from the Asylum. It certainly could not have continued very actively from the time of his admission (five weeks previously),

or the sores would have been much larger than the palms of the hands at the time of his leaving. The fatigue and exhaustion attendant upon removal—which was a most unsafe measure—and some injury which the sores probably received at that time, must have tended greatly to aggravate their character. There would, at first sight, appear to have been something rather harsh in putting on the patient's trousers over his sores, but there is no reason to believe that the sores were not protected by proper dressings; and, providing care was used, we do not see that much blame can be attached to those who sent the patient away in this manner, although enveloping him in a blanket would have caused less pressure.

Bed sores over the sacrum, and ulceration or sloughing of the integuments covering the anterior superior spinous processes of the ilia, are unavoidably liable to occur in all greatly emaciated persons who are compelled, from weakness, to lie in fixed positions, and in those who suffer from special debility of the nervous system, whether attending paralysis or otherwise. All surgeons know the difficulty of preventing the fatal spreading of these sores, even when every appliance that care and invention can employ is had recourse to. In an insane person, who could not express his sensations, such sores would, even with the greatest attention, be still less amenable to treatment than in one who, however weak, was at all times able to complain of the uneasiness he suffered from remaining in a particular position, and to require to be moved, or to have his dressings shifted whenever the pressure of lying became intolerable. We do not think that this case was at all a parallel to those in which sloughing occurs after fever, and in phthisis. The verdict of the jury was, in our opinion, unnecessarily severe, and was not justified by the evidence.—ED. GAZ.]

Medical Intelligence.

THE Physic and Surgery Bill appears likely to undergo the same kind of hebdomadal procrastination, which its predecessor underwent in the last session; and from what we hear, it would not surprise us if it were finally postponed *sine die*. Our legislators appear to interest themselves but little in the matter. Last night the House of Commons was occupied in discussing the subjects of "dog-stealing" and "the prevention of smoke"!

LIVERPOOL PETITION AND MEMORIAL.

To the Honourable the Commons of Great Britain and Ireland, in Parliament assembled.

The Petition of the undersigned Members of the Royal College of Surgeons resident in Liverpool,

Sheweth,—That your petitioners respectfully, but decidedly, protest against the plan which the Right Honourable Sir James Graham has proposed for the separate incorporation of the general practitioners in a third and an inferior college.—That they are of opinion that a College of Physicians and a College of Surgeons are amply sufficient for the protection and government of the medical profession in England and Wales.—That in earnestly desiring that the general practitioners should be enfranchised in one institution, your petitioners would infinitely prefer having that great object carried into effect in the Royal College of Surgeons of England than in a separate incorporation, as it would tend greatly to facilitate the relations amongst the profession, and prevent those unnecessary distinctions which at present exist, and which, we are of opinion, could easily be effected by advising Her Majesty to grant a new supplementary charter to the Royal College of Surgeons.—That your petitioners consider chartered rights entitled to respect so far only as consistency and the rights of others are respected; and that your petitioners have been, with many other members of the Royal College of Surgeons of England, *excluded by the Council from the list of fellows*, although gentlemen admitted as members so recently as the year 1843 have been created fellows. Your petitioners are firmly of opinion, that, by so very important a distinction, great injury has been done to them as well as to other Members of the College, who have been thus *unjustly excluded from the fellowship*.—Your petitioners, therefore, most anxiously pray, that a full inquiry may be instituted into the government of the College of Surgeons of England, and the effects produced by the last new Charter, and that they, in common with every member of the Royal College of Surgeons of England, may have full power to elect their governing body; but if corporate rights are not to be acquired in the Royal College of Surgeons, they are decidedly of opinion that a third college, of perfect legal equality with that of the Royal College of Surgeons, should be incorporated upon the representative principle, by which the governing power of the college might

reflect the character of the constituent body. And your petitioners will ever pray.

To the Right Honourable Sir James Graham, Bart. Her Majesty's Principal Secretary of State for the Home Department.

The Memorial of the undersigned Surgeons resident in Liverpool,

Respectfully sheweth,—That your memorialists are all members of the Royal College of Surgeons of England.—That your memorialists indignantly and decidedly protest against the plan which you have proposed for the separate incorporation of the general practitioners in a third and an inferior college.—Your memorialists are of opinion that a College of Physicians and a College of Surgeons are amply sufficient for the protection and government of the medical profession in England and Wales, and which they are strongly of opinion could easily be effected by advising Her Majesty to grant a new supplementary charter to the Royal College of Surgeons of England; but if corporate rights are not to be acquired in the College of Surgeons, they are decidedly of opinion that a college, of perfect legal equality with that of the Royal College of Surgeons, should be incorporated upon the representative principle, by which the governing power of the college might reflect the character of the constituent body.—That your memorialists consider chartered rights entitled to respect so far only as consistency and the rights of others are respected; and that your memorialists have been, with many other members of the college, unjustly excluded by the Council of the college from the lists of fellows, and they consider that, by so very important a distinction, great injury has been done to them.—Your memorialists, therefore, urge upon you a reconsideration of the measure you have proposed for the regulation of the profession, and to adopt an amalgamation of the interests of the profession into two colleges only, and the education for the membership of each college to be of one uniform standard.—That your memorialists present their individual thanks for the great interest you manifest towards the profession.

To the President, Vice-President, and Council of the Royal College of Surgeons of England.

We, the undersigned members of the Royal College of Surgeons resident in Liverpool, find that it has pleased the Council to select "arbitrarily" from its members some few individuals for a higher degree.—We are of opinion that, in carrying out the provisions of the charter, it would have been

the most honourable, practicable, and satisfactory course, had the Council, in nominating to the fellowship, been guided by an uniform principle, applicable to all (say ten or fifteen years' membership); but when we observe parties selected for that honour not in any way distinguished in the profession, except from fortuitous circumstances, we cannot avoid recording our protest against so undignified a course, or expressing our individual opinion at the great injustice you have done to us.—Believing that the Council of the college have the welfare of the members in view, we therefore urge upon them a further consideration of this subject, to the intent that, after a fixed lapse of time, all those who are now members shall become fellows of the college, excepting such as act unprofessionally by degrading the profession into a business.—We have hitherto delayed expressing our sentiments, hoping that the Council, upon ascertaining (which they must now be fully in possession of) the almost universal feeling of dissatisfaction prevalent, would of themselves have adopted some such arrangement, so as to rectify the glaring injustice done to the members, and regulate those rights which all are alike entitled to, they having complied with those educational requirements that you have yourselves passed, and which, in your judgment, entitles them to your diploma.—We, in conclusion, now draw your attention to the subjoined opinion, which we consider it our duty to present in our petition to the house:—"That if corporate rights are not to be acquired in the Royal College of Surgeons of England, we are decidedly of opinion that a college, of perfect legal equality with that of the College of Surgeons, should be incorporated upon the representative principle, by which the governing power of the college might reflect the character of the constituent body."

Signed by 96 surgeons, whose diplomas date from 1809 to 1844*.

STATEMENT OF THE ROYAL COLLEGE OF SURGEONS RELATIVE TO THE NEW MEDICAL REFORM BILL.

At a Meeting of the Council of the Royal College of Surgeons of England, held on the 5th of June, 1845.

Present.—Sir Benjamin Brodie, Bart., President; Mr. Cooper, Mr. Lawrence, Vice-Presidents; Mr. Keate, Mr. Vincent, Mr. Guthrie, Mr. Andrews, Mr. Briggs, Mr. Travers, Mr. Swan, Mr. Stanley, Mr. Green, Mr. Callaway, Mr. Liston, Mr. Ar-

* Signed by 96 out of 110 members of the college resident in Liverpool. Of the 14 who did not sign the petitions, 8 have had the fellowship of the college conferred upon them, 2 refused, and 4 were from home at the time of application.

(Signed) J. COOPER, E. BRADLEY, *Secs.*

nott, Mr. South, Mr. Welbank, and Mr. Cutler,

The following Statement, relative to certain parts of the "Bill for regulating the Profession of Physic and Surgery" (as amended in Committee of the House of Commons on the 7th ultimo), was unanimously approved and adopted:—

The Council of the Royal College of Surgeons of England, after considering the amended Bill as fully as the difficulty of ascertaining the exact meaning of some of its provisions permits, beg leave to submit some observations, which, as offered by those whose duty it is to guard the interests of the surgical part of the profession, will not, they trust, be deemed unworthy of serious attention.

The Council respectfully represent that the new charter and Bye-Laws of the College of Surgeons were framed in conformity with the propositions submitted to them in the form of "Heads of a Bill for regulating the Practice of Medicine and Surgery," and that they assented to the change which the Charter effects in the constitution of the College, as an essential part of the measure then contemplated for the regulation of the Medical Profession. But they are prepared to show that the Amendments, as proposed in the Committee of the House of Commons, differ in principle from the Bill, and from the original Bill, of which the heads were submitted to this Council, and that they are inconsistent with the Charter and Bye-Laws founded upon those "Heads."

The Council had every reason to believe that the change in the constitution of the College was a pledge of the continued support of Her Majesty's Government; but they find that one of the principal features of the amended Bill is that of providing for the institution of a College of General Practitioners in Medicine, Surgery, and Midwifery. Now, although it was not unknown to the Council of this College that the subject of incorporating the General Practitioners was under consideration, they imagined that the object of the incorporation was to provide for the more efficient performance of the duties confided to the Society of Apothecaries; and they cannot help expressing their surprise that, without any official communication to those most affected by it, a new College is about to be established, which is intended not only to embrace Medicine, Surgery, and Midwifery, but to be co-ordinate in professional rank and importance with the existing Colleges of Physicians and Surgeons. It might be an invidious task for the Council to investigate the probable results of a measure which will entirely change the relations of the several branches of the profession, and confound distinctions hitherto recognised as be-

neficial to the community; but they feel bound to state their deliberate conviction, that in the framing of the amended Bill the interests and privileges of the College of Surgeons, and its claims to legislative protection, founded on the undeniable ground of public utility, have been unhappily overlooked.

That the proposed College is intended to be co-ordinate in professional rank and importance with the existing Colleges of Physicians and Surgeons will be seen by Clause 14, in which the style of the new College is recited as the Royal College of General Practitioners in Medicine, Surgery, and Midwifery, of England, and its members are described under the title of fellows. *Thus* for the first time will every general practitioner be presented to the public under the title of Fellow, a title which was intended to designate the highest professional qualifications of Physician or Surgeon*, but which here appears to imply that the general practitioner combines the highest qualifications of both physician and surgeon, conjoins their functions, and superadds those of the professor of midwifery, but discards the characteristic designation of apothecary. The Council believe that the proposed title of Fellow of the Royal College of General Practitioners does not intelligibly describe those who, combining the practice of medicine, surgery, and midwifery, with that of pharmacy, compound their medicines, and supply medical aid and advice at a moderate cost; *or, that it describes them under a title which can scarcely fail to mislead the public in estimating their true character.*

In the absence of the draft of the Charter to the proposed College, this Council have no means of forming an opinion as to the precise powers and privileges intended to be conferred on the new body, but they think enough appears on the face of the amended Bill to show that it is proposed to establish a Court of Examiners, who are to have the exclusive power to grant Letters Testimonial of the fitness of persons to practise as general practitioners, and who will therefore, it may be presumed, examine the candidates in surgery.

It is true, indeed, that by Clause 17 a provision is made for a preliminary examination to be conducted by a joint Medical and Surgical Board, including six surgeons chosen by the Council of the College of Surgeons; but it is equally true that the candidate for the diploma which is to enable him to practise surgery at the age of twenty-two years, or at any later age,—unless he become a Fellow of the College of Surgeons,

—will be subjected to a second examination, may be rejected, and can only obtain an authority to practise surgery through the Royal College of General Practitioners. It is plain then that, by the amended Bill, the College of Surgeons will be subordinate to the College of General Practitioners in those functions for which the College of Surgeons was specially instituted, *and that the surgical examiners at the joint board may be placed in the degrading position of having a candidate whom they had declared duly qualified, rejected at the subsequent examination by general practitioners.* It is also, to say the least, a singular feature of the amended Bill, that the legally constituted Court of Examiners of the College of Surgeons should have been passed by, as wholly undeserving of notice, in arrangements which demand services for which they must be supposed peculiarly fitted. *And it is worthy of remark, that the preliminary examination, which is not required in Scotland and Ireland, is made imperative on those who desire to become Surgeons in England, and that those who have passed a single examination in Scotland or Ireland will be entitled to all the advantages of English practitioners, who have undergone a double examination.*

It will be seen, from Clause 32, that registered general practitioners are to be deemed, to all intents and purposes, qualified practitioners of surgery, and capable of filling any surgical appointment in any local or public institution. And by comparing Clause 15 with Clause 14, we learn that the qualification being in each case the same, namely, five years of professional study, the general practitioner is to have the advantage of obtaining, at twenty-two years of age, the legal authority to practise surgery, which is withheld from the surgeon till he is twenty-six years of age. The probable result, therefore, of this part of the amended bill will be, that the object of the College of Surgeons—in instituting, with the concurrence and approbation of Her Majesty's Government, the fellowship of this College as a higher grade of members of the surgical profession, in order to excite a spirit of emulation, and to promote a higher and more extended education—will be defeated, as far as legislation can accomplish it.

By Clause 15, every registered general practitioner will be entitled to be registered as a surgeon, provided he has been twelve years in the practice of surgery, and shall have received letters testimonial from this College of his being duly qualified to practise as a surgeon. The Council of this College, therefore, cannot but think that the amended bill is calculated to discourage the attainment of the fellowship in the manner prescribed by the bye-laws of the College, which require

* We have placed this and the following sentences in italics.—ED. GAZ.

a prolonged course of laborious studies; since, according to the provisions of this clause, the general practitioner is already completely a surgeon in all his functions, qualifications, and privileges. *And they perceive that the operation of the above clause will be direct and certain in taking away all inducement to obtain the diploma of this College, and thus in limiting its members to those who were designed by the charter to form only the higher grade of Fellows.*

Thus, under hostile attacks, *devoid of any reasonable ground, and unsupported by any rational argument*, is the Royal College of Surgeons—recently re-chartered by Her Majesty for the promotion and cultivation of surgical science, *and not charged as unfaithful to, or incapable of, its high functions*—thus is the Royal College of Surgeons of England in danger of being sacrificed to the views and wishes of those who hope to annihilate it by the establishment of a rival College of Surgeons under the specious name of a College of General Practitioners in Medicine, Surgery, and Midwifery. *It will not, however, escape notice, that the proposed corporation, in assuming the name of a College, has no legitimate claim to a title, properly used to designate any institution of which the essential object is the promotion of science and learning.* In the case of Physic and Surgery, the claim is precluded by the existence of the Colleges of Physicians and Surgeons; and in that of Midwifery and Pharmacy, the cultivation of each would properly devolve upon a special Institute, the intention of which should be guaranteed by the appointment, in the first instance, of the most distinguished professors of the science.

That sufficient reasons may exist for the incorporation of general practitioners, the Council of the College are as little prepared now to deny as when, in reply to the National Association of General Practitioners, they said,—“With regard to the proposed incorporation of general practitioners as a separate body or College, the Council have as little the wish as the power to prevent them from obtaining a charter, and would offer no objection to the incorporation of a body for the performance of the functions hitherto executed by the Society of Apothecaries.” The Council of this College do not object to an incorporation of general practitioners, if it should be found necessary, in order to fulfil purposes of public utility which cannot be accomplished by the two existing Colleges; but they protest solemnly and urgently against such incorporation in a form which, in assuming a name and powers to which it has no legitimate claim, invades and annuls functions vested in the Royal College of Surgeons.

Whether the separate incorporation of the general practitioners would best promote their own interests, and the interests of the medical profession at large, is a question of doubtful solution. In considering that question, however, it is important to remember, that by the provisions of the recent charter and bye-laws the union of the general practitioners with this College may be obtained by means which cannot fail to raise their qualifications. The Fellow of the College who has obtained his degree at twenty-five years, after a liberal and extended education, will not be precluded from practising, in conjunction with surgery, the other branches of the profession; and a general practitioner, being a Member of this College, who may have been deprived of the opportunity of obtaining his degree at twenty-five, may become a Fellow after having been in practice for a definite number of years. And it may be added, that all the Fellows, under the conditions of the charter, are eligible to the Council, and to the highest honours of the College.

In conclusion, the Council, appealing to the estimation in which the diploma is held, and the high character which English surgery has attained, in proof that the rights and privileges conferred on the College by royal charter have been faithfully employed for the intended purpose of advancing the science of surgery, hope and trust that the services and claims of the Institution will be fully considered before any legislative measure shall be adopted for the regulation of the medical profession; that no Institution will be authorised to assume a name implying functions hitherto entrusted to this College, nor be empowered to interfere with, or supersede it, in its legitimate province of testing the qualifications of surgeons, and conferring on them the legal authority to practise surgery.

By order of the Council,

EDMUND BELFOUR, *Secretary.*

VACCINATION.

THE following is a copy of the last Report, dated Whitehall, May 20, from the National Vaccine Establishment to Her Majesty's Secretary of State for the Home Department:—

*To the Right Hon. Sir James Graham,
Bart. &c.*

SIR,—After the recent communication of the results of an inquiry, instituted at your desire, into the prevalence of small-pox, and the protective influence of vaccination, we have only to repeat, in this our annual report, the unabated confidence with which we continue to regard vaccination.

Amongst the encouraging circumstances which have presented themselves to our

notice during the last year, is that of the Government district vaccinators at Port Louis, Mauritius, having vaccinated many thousand children, and been enabled to keep up a constant supply of pure lymph.

During the last year, the National Vaccine Institution has supplied 175,362 charges of lymph, and met the demands contained in the letters of 5,845 correspondents, the majority of whom required lymph not only for their individual service, but for that of extensive distribution; thus multiplying to an indefinite extent the benefits disseminated by this national institution.

JOHN AYRTON PARIS, M.D. President of the Royal College of Physicians.

B. C. BRODIE, President of the Royal College of Surgeons.

G. L. ROUPELL, Senior Censor of the Royal College of Physicians.

C. HUE, M.D. Registrar.

Correspondence.

ON THE ASSISTANCE TO BE OBTAINED FROM BOOKS IN CLINICAL STUDIES*.

THERE are many ways of studying medicine and surgery, according as it is wanted to pass an examination in, or to acquire a sound knowledge of, the subject. With the former method we have nothing to do: and with respect to those who pass their examinations first, and profess to study for the acquirement of sound knowledge afterwards, we beg to doubt the sincerity of their intentions. We therefore address ourselves solely to those who have a wish to learn, and to learn in the way most likely to be retained.

The quickest way of getting up (as the phrase runs) medicine and surgery is by books, and it may be urged that we are less exposed to fallacy by following the advice of some acknowledged authority, than by walking in our own unguided way; so that this method has in its favour the *cito*, and the *tuto*, and why not also the *jucunde*? But the difference between a practically-learned and a book-learned man, shows itself most infallibly at the bedside of a patient, just where and when the possessors of the book learning should most shine, in a difficult case. The difference wears off in time, of course, by the more frequent visits of the man who is learned in book lore only, and his increased familiarity with the phases of actual disease.

It will not be irrelevant to the present subject to inquire into a few of the causes of

* [We have made a few alterations in this letter, which its publication at the present time appeared to render necessary.—E.D. GAZ.]

this difference. The chief, and perhaps in reality the only cause is, the fact, that diseases, as described in books, are not identically the same, symptom for symptom, with those that we meet with by the bedside. A book describes, for instance, the symptoms of fever with complete accuracy, and we can distinguish a case of fever in the wards by this description;—we have made up our minds to the treatment to be pursued;—the physician comes, and, to our surprise, orders the patient to be bled. We had looked out the patient in our book, as we might have looked out a flower in our Flora, and had found his case to suit well with fever; we had not thought of pneumonia, where there was no cough, and the most evident symptoms seemed referrible to the head. Such cases might easily be multiplied, but they are most instructive when they occur to ourselves; let us try that they may only occur during the time that we are spectators, and not actors, where human life and death are concerned. That diseases as described in books are not the same as we see in the wards, we find substantiated by daily experience. The symptoms may be the same, but they do not occur in the same order; they have not always the same importance; they may be masked by or merged in others; their indications may be contraindicated in a thousand ways, which nothing short of an Encyclopædia could describe, and nothing short of talents of the very highest order could remember and apply at the right time.

A little reflection will show that he who learns each disease specifically and by itself, must have a most capacious and retentive memory, and a most unwearied industry to acquire the elements of this kind of knowledge. But those who have such talents and assiduity will not be long in discovering a shorter way, and a sounder one, leading to the same end.

In written descriptions of disease every thing is sacrificed to giving a true and clear account of the disease, unmixed with any of the complications in which its true nature may be ordinarily involved. Each disease must be examined by itself for the perfect understanding of its pathology; afterwards we may study it in relation to other diseases: the first part is done for us, the latter we have to do for ourselves: what is true for most cases is set down in books—what is true for individual cases only, and occasionally, is to be learned by practice.

Now in practice each disease rarely occurs quite unmixed; and so far from its being the main object to ascertain from what disease the patient is suffering, we may often treat the case correctly, and on the soundest principles, without having the least certainty as to the real name of the disease. A book that guides us only by the knowledge of the whole,

cannot help us in a case where we act only upon a part, and our whole is the aggregate of the symptoms; the parts may be of two or three diseases. We would not recommend the study of a system of medicine, or a dictionary of surgery, to a student who has twice during the summer to examine the subject for himself. Let him observe a case of any kind;—a sore leg is a common, and, though a humble, yet a most instructive piece of pathology;—then let him read about it, and then observe and read by turns: so the systematic description, and the well-directed observation, will lay the foundation of much fairly acquired and firmly fixed information.

The obvious incapability of mere systematic descriptions of disease, (we do not use the term disparagingly,) to render any one an adept in its treatment, has reproduced in modern times a class of books more capable of making good the deficiency, namely, systems of clinical medicine and surgery, clinical lectures, and reports of selected cases dispersed among the journals. Bacon notes, as a deficiency in the study of medicine in his time, that physicians were not careful to record their observations as well of ordinary as of extraordinary cases. Until within the last few years this method of advancing our professional learning was certainly much neglected, so much so that Huxham quotes cases from Hippocrates, just as we might do from Louis or Andral, obviously because he had none others at hand in more recent authors. Bacon would not now repeat his censure if he were living; he might rather, in the fear of an accusation of plagiarism, complain with Solomon, that "of making books there is no end; and much study is a weariness of the flesh."

It would be superfluous to say any thing in commendation of works which the general consent of all has classed among the most lasting of the literary monuments of our profession, the value of which resting on their intrinsic truths must remain so long as disease shall continue to require human relief. But, truthful and elementary as these books may seem, they cannot make a man a perfect practitioner; they are rather to be considered supplemental to his own experience, than as giving information unattainable by other means. Moreover, in these records are contained a vast number of cases, which, although not written with the object of deceiving, yet have that effect; they are designed to show the skill of the practitioner, or the good effects of some new-fangled remedies. But the good is gained, and the danger is avoided, by considering these books in the same light as the others. In consulting them we feel an interest in the statements of the authors; hence we profit by all that is

really good and intelligible, while our growing knowledge of, and present attention to the subject, enable us to detect the frauds and fallacies of empirics.

There is another class of books which demand consideration, and which, like the former, had their prototype in the works of the great Hippocrates. I allude to those condensed deductions from the experience of a long life, written either in the form of aphorism or the more inviting form of narrative. They are short, and so do not take much time in the reading; they are easily remembered from the striking language in which they are couched, are generally on important subjects, and are in their proper sphere quite inestimable; but, as we have excluded all other books from the bed-side, we must endeavour to define also what is the proper sphere of this class of books.

Systems of medicine, and particular descriptions of disease, are useful like lectures to tell us for what we are to look, as in a map, and what we shall generally find. Details of cases are useful to extend our experience, to make us aware of unusual difficulties, and not the least instructive part is to shew us how others have fallen into error; but these aphorisms have a more familiar, a less pretending use.

At the time when it was thought a sufficient argument against the existence of the circulation, that Hippocrates and Galen had said nothing of it, and when these authors and their commentators were almost the only medical authorities, these aphorisms had doubtless a much higher value placed upon them than at present. Although now they are not so highly estimated, the same cause which originally gave them weight, namely, their intrinsic truth, should make us at least regard them with a favourable eye.

It would, of course, be an unadvisable task to commit any number of them to memory, but it is of great use and interest to carry some of them about with us in our heads; to examine into the truth of them, that we may learn how much unaided observation has been able to do, and to respect what is good, though mixed with much that is absurd and untrue. Here is a little field wherein we may amuse our intellects profitably; we may test our reading by our experience, and to the juniors, let me add, a most rapid mode of attaining proficiency.

I have not named any authors in particular, for the different teachers would do this more judiciously by prescribing to the intellectual wants of different students. The great means of acquiring information is by thought; not that we think anything new, but thought makes us attend to what we read, and to read with an object; so that

no time is lost in what Butler calls the idleness of reading, where pages pass before our eye quite unheeded by the understanding. Thinking also makes us arrange the different materials in our mind ready for use; otherwise, we had better go and read Don Quixotte, as Sydenham is said to have recommended, and so keep ourselves fresh for observation, than heap up ill-arranged and ill-selected materials, which only encumber without enlightening us.

Lastly, let not any one, in the foolish desire of being reckoned a practical man, despise all book learning. He is surely the most practical man who is the best at the bed-side of his patient. There is a tact better than all the memory in the world to be got there, and there only; but on this firm basis much may be laid that has been already shaped by others. These materials may be gathered by sight and hearing best, but all have not such extended fields of observation as a London hospital affords, and reading, as it is the only other means, so it is a very effectual one, of gaining this extended experience; subject, however, to one restriction, that our reading be supplemental to, and do not take the place of, our own personal observation.

There are labyrinths which only one man in an age can thread, and without the clues we must remain always in the background. There is much that we might make out for ourselves, but that for saving of time we had better take for granted, at least at present, on the word of the best informed and the best disposed of our profession. There are tracts that have been explored to no purpose, by competent observers. Let us not waste our time on any of these, whether to test our strength or our industry. Teachers may guide, may smooth down the difficulties of practice, and books may extend the observations, and correct any theoretical notions of other books, or of particular teachers; but neither books nor teachers can make a physician of a man who does not study his profession at the bedside, and who can remember, but cannot, or will not, think for himself.

OMICRON.

To the Editor of the Medical Gazette.

SIR,

As some doubt hangs over the question who is the author of the *Latinity of Sydenham*, perhaps the following statement may be interesting to those who are curious in the matter.

I have in my possession a copy of the Leyden edition, 1741, of "*Opera Universa Sydenhami*," which it appears had formerly been in the Mapletoft family. On the inner side of the cover there is this memo-

randum:—E Dono Richardi Mapletoft Nepotis Joannis Mapletoft, M.D. qui tractatum Sydenhami in Latinam linguam reddidit et cui Sydenhamus opera sua dedicavit; and below, in the same handwriting, is—Robt. Mapletoft, ejus liber, 1776.

On the same page is an engraved coat of arms; and under the achievement is, in writing, the signature—Rd. Mapletoft.

I think it probable that the above-named Robert Mapletoft was the highly-respectable surgeon of that name who died at Saffron Walden, Essex, in 1782.—I am, sir,

Yours very respectfully,

JOSEPH HOULTON.

ANALYSIS OF THE WATER OF ARTESIAN WELLS.

WE have been favoured by a correspondent in Paris with the analysis of the water of the celebrated Artesian well of Grenelle. It is remarkably soft, and contains, according to the undermentioned analysis, only 8.05 grains of saline matter to the gallon, the greater part of which is formed of carbonate of lime and bicarbonate of potash. This is in the proportion of about 1-7000th. The quantity of saline matter in the filtered Thames water is about 12 grains to the gallon, or nearly 1-5000th; the principal saline contents being carbonate of lime and sulphate of lime.

The Artesian water of Grenelle, like the Artesian water of Trafalgar Square, possesses an alkaline reaction; this being due, in the former case to bicarbonate of potash, and in the latter to carbonate of soda. This last-mentioned alkaline salt is said to exist abundantly in all the deep Artesian water of London. It is difficult to say whence it is derived, unless we suppose that it is produced by the reaction of common salt contained in the sea air on the chalk strata which form the outskirts of the London basin. Efflorescences of carbonate of soda, from this cause, have been found on the chalk downs for many miles inland, and the superficial washings of these strata may become thus impregnated with the carbonate of soda; and the water may afterwards infiltrate into the London basin between the beds of sand and chalk.

One interesting fact connected with the Artesian water of Grenelle is, that it is the deepest source in the world from which water is obtained. The shaft or tube, which, for a large part of its course, traverses chalk, extends into the earth to the depth of 1794 feet (English). The temperature of the water is 82° F. or 31° above the mean temperature of the climate of Paris.

The analysis of 100,000 parts of the water, after being freed by filtration from mechanical impurities, gave of

Carbonate of lime . . .	6.8
Carbonate of magnesia . .	1.42
Bicarbonate of potash . .	2.96
Sulphate of potash . . .	1.2
Chloride of potassium . .	1.09
Silica	0.57
Organic azotized matter .	0.26

14.30

The water rises to the surface, and is discharged at the rate of 600 gallons per minute. This is about the quantity obtained from the Artesian well in Trafalgar Square.

Selections from Journals.

TOXICOLOGY.

CASE OF POISONING IN A YOUNG CHILD, BY A STRONG DECOCTION OF POPPIES—RECOVERY. BY DR. PUPKE, OF GIESSEN.

A WOMAN, in order to quiet her child, about six weeks old, gave it several teaspoonfuls of a strong decoction of poppy-heads. In a quarter of an hour the child fell into a deep sleep, from which it could not be roused. About thirty-six hours after the occurrence of this somnolency, Dr. Pupke was called in, and he found the child almost moribund. The eyes were sunk, the lids half open and surrounded by a livid circle, the pupils dilated and insensible, the face pale, with a slight bluish tint, the extremities almost paralysed, respiration hurried, the pulse frequent, small, and trembling, the forehead covered with a cold sweat, and the lower jaw depending. Occasionally the child made a slight noise by protruding its tongue from the mouth. No urine had been voided, nor had any fæces been passed since the first occurrence of the symptoms. The child had no longer the power of sucking, but it could swallow without difficulty.

It was too late to think of attempting to remove the poison from the stomach. Some teaspoonfuls of coffee were given to it, with camphorated tea; and enemata of camphorated vinegar were used. In addition to these means, the child was placed as soon as possible in a warm camphorated bath. The bad symptoms gradually disappeared, and the child perfectly recovered.—*Med. Zeit., and Annales d'Hygiène*, Janvier 1845.

[Cases of this description are unfortunately of very common occurrence, and the results are seldom so favourable. The reporter seems to have placed great confidence in the use of camphor in all its forms, giving it internally and at the same time using it in injections, and even as an external application in the bath. We are not aware that any particular benefit has been hitherto found to follow the use of camphor in such

cases, and probably we may ascribe recovery in this instance as much to a vigorous reaction in the constitution as to treatment. The dose of poison, besides, must have been small, or the child would not have lived thirty-six hours after taking it, the time which elapsed before it was seen by Dr. Pupke. Cases are reported, which shew that infants may be killed by two teaspoonfuls of a decoction of two or even one poppy-head in water.—*ED. GAZ.*]

SURGERY.

OPERATION OF TRACHEOTOMY.

BY DR. HALL.

THE subject of this case was an interesting lad of about four years of age. While playing with a piece of pipe stem, and drawing air through it, holding it between his lips, he accidentally sucked it through the rim-glottidis into the trachea. This account the boy gave immediately after the accident, for no one was present at the time. He also measured on his finger his estimate of the length of the pipe stem, corresponding, as it afterwards proved, with its real length, being nearly $1\frac{3}{4}$ inches. The usual symptoms of foreign body in the trachea at once came on, such as violent coughing and difficult respiration; but the little fellow was not attacked with that threatened fatal suffocation which follows the inhaling of smaller and lighter substances,—and there appeared no floating up and down of the body through the windpipe, in the action of breathing; it seemed to have descended rather by its own superior weight, and become fast in some bronchial tube. But, lest there might be some mistake in the opinion we had formed and expressed—viz., that the pipe stem was in the trachea or bronchiæ, we resorted to other means than an immediate incision, to dislodge the offending cause. A probang was several times introduced into the pharynx and œsophagus. An emetic of sang. canad. was administered, with the vain hope that the body might be coughed up in the operation. And, to the horrid proposal of cutting the boy's throat to save his life, the friends hesitated much in yielding consent, and they were induced to try still further milder means to expel the foreign body before they would consent to this savage operation. Consequently we left the patient for the night; in the meantime the lad was several times held up by his ankles with his head downwards, at the same time applying sudden percussion between the shoulders; but all to no purpose.

The next morning, about 18 hours from the accident, consent was obtained for the operation. This was performed by placing the boy upon a table on his back: his head, arms, and legs, were held and supported by

assistants. The lad being short-necked and fat, it became expedient to introduce a bolster beneath the nape of the neck and shoulders, so as to bear the head back and raise the trachea, to make room for the knife. These preliminaries being settled, I commenced the incision from above, and carried it longitudinally downwards, in the course of the trachea to the sternum. While cutting through the adipose substance a vein of considerable size was divided; this continued to bleed for some time, and to save time we applied a ligature. The tracheal opening was now made at the upper angle of the incision, when the air and spray burst forcibly out; the boy, up to this time, incessantly screaming and inquiring if we had found the pipe stem; but now his voice was, as it were, smothered and gone. At this critical juncture he was turned on his left side to prevent the oozing of the blood into the trachea, and the incision was finished by dividing the tracheal rings, with the probe-pointed bistoury, to the extent of the external incision, it being about $2\frac{1}{2}$ inches. The cut edges of the trachea were drawn apart with broad blunt hooks, made of silver plate, and immediate search was made for the foreign body.

After nearly ten minutes' search it was found by Dr. Marsh, and drawn out on the point of the probe, this having entered the hollow of the pipe stem, which was found securely lodged in one of the right bronchial tubes, some two or three inches below the top of the sternum.

After this joyful result, the incision was drawn together by sutures and sticking plaster; but the respiration had become so laborious and difficult before the operation, that now at each expiration the air burst forcibly out between the stitches. This continued about 36 hours, when the breathing became natural.

The first evening a cathartic of calomel was administered, followed by an expectorant powder, one every six hours. In three days the little sufferer was considered out of danger, and has since entirely recovered.—*Montreal Medical Gazette*, 1844.

CHEMISTRY.

ON THE CONVERSION OF SULPHATE TO SULPHURET OF LEAD, BY ORGANIC MATTER.

It is well known that the sulphate of lime is reduced and converted to a sulphuret by the organic matters with which it is left long in contact. A plaster cast soaked in oil acquires commonly after a few days a most offensive smell. M. Kersten has performed some experiments with the sulphate of lead, and he has found that this salt, moistened with water, and left for eight months in

contact with sugar, decomposing wood or green leaves, is completely transformed to sulphuret; and this transformation was observed to take place more rapidly with the leaves than with the wood.—*Annuaire de Chimie*, 1845.

VOLITION AND MEMORY.

EVERY new sensation is unaccountably connected with some preceding sensation: so that volition and memory are the necessary characteristics of manifested mind. No subtlety of reasoning has been able to account for these powers or peculiarities of mind on a material theory. Phrenologists and metaphysicians, with all their grand and cloudy pretensions, have added nothing important to our knowledge concerning them. All their elaborate disquisitions exhibiting the operation of mental function in unison with organization, teach us no more than we previously knew, namely, that the functions of the mind and brain are created to act together at present. They leave us in possession of the capital and most interesting fact, that *we do will* and *we do remember*, but they cannot tell us how. Still they must acknowledge that these wonderful powers result from the operation of some thing or being which *chooses* between pleasant and unpleasant sensations, both when the *body sleeps and when it wakes*; and which some thing or being also recalls past impressions, according to certain laws of association and certain states of mind and body.—*Moore, on the Power of the Soul over the Body*.

ROYAL COLLEGE OF SURGEONS.

Gentlemen admitted Members.

THURSDAY, May 29th.—Wm. Edward Stewart, 1A, Weymouth Street, Portland Place.—Richard King, Lewes, Sussex.—William Wadham, Frenchay, Gloucestershire.—Charles Brightly Prentice, Kingston-on-Thames, Surrey.

FRIDAY, May 30th.—A. I. Tuckey.—J. T. Ross.—J. Teague.—J. M. C. Cornuel.—J. Packer.—C. P. Mingaye.—D. Davies.—T. E. Barton.—T. C. Jackson.—F. I. Hensley.—W. Sedgwick.—J. Lewis.—W. H. Fitzpatrick.—G. N. Epps.

FRIDAY, June 6th.—J. G. Moir.—R. Moore.—O. Mullett.—S. Gibbon.—A. P. May.—W. Culhane.—J. S. Denham.—J. R. Hutchinson.—T. McGreal.—E. Pearce.—W. E. Wright.

MONDAY, June 9th.—F. S. Fleck.—H. Ward.—J. Ward.—T. Peck.—F. S. Forge.—E. T. W. Mandeville.—S. Clift.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

THURSDAY, June 8th.—Wm. Castledine Tucker, Lavington, Wilts.—Frederick Barnett, Jamaica.—Wm. Clutton Byass, Cuckfield, Sussex.—Sam. Benthall, Portsmouth.—Benjamin Butterworth, Rochdale.—John Parson Ramskill.—Geo. Edw. Havers, Thelton Hall, Norfolk.

Lectures.

CLINICAL LECTURES ON SURGERY,

At St. Bartholomew's Hospital,

By W. LAWRENCE, Esq. F.R.S. &c.

[Reported by MR. HOLMES COOTE.]

Acute Laryngitis, with Tracheitis and Bronchitis.—Laryngotomy.

I HAD occasion, gentlemen, two days ago, to perform the operation of laryngotomy upon a patient in the London Fever Hospital labouring under an attack of acute laryngitis. I saw this patient at the request of Dr. Tweedie, and accompanied by Mr. Stanley, the evening before last, between 8 and 9 o'clock. We found her in an enfeebled state, breathing with difficulty, and suffering occasional paroxysms of dyspnoea, which threatened suffocation. Mr. Stanley and myself concurred in the opinion of Dr. Tweedie, that an operation was necessary; and, the symptoms being urgent, no time was lost in making an artificial opening into the air-tube. Unfortunately, however, the disease was not confined to the larynx, but extended throughout the trachea and the ramifications of the bronchial tubes: consequently, the operation, though it remedied the obstruction in the glottis, did not influence the extensive mischief in the lungs, and the patient died early the following morning.

The particulars of the case are as follows:—

Anne Stannard, aged 25, a servant out of place, was admitted into the London Fever Hospital, April 11th, 1845.

She stated that, four days ago, she felt herself somewhat indisposed; cold shivers came on, followed by heat and flushings; she had pains in the head, back, and limbs; she lost her appetite, and felt thirsty. She could assign no cause for her complaint.

She is still suffering from these general febrile symptoms; the skin hot; the tongue clean and moist, but preternaturally red; pulse 108; bowels open. There is no eruption, no pain in the chest, nor cough; but she complains of some soreness of the throat.

Haut. Ammon. Acetatis, 4tis horis;
Haut. Sennæ. Comp. cras mane.

12th.—The bowels being confined, she took a mild aperient composed of calomel and rhubarb, followed by a dose of castor-oil, which produced several evacuations.

13th.—She complained of some uneasiness in the epigastrium, which subsided upon the application of a mustard-poultice. In other respects she progressed favourably. The pains soon left her, the skin resumed its natural temperature, the tongue became

healthy, the pulse lessened in frequency, and, on the 16th, she had some return of appetite.

I see, from the report before me, that on the 17th she was allowed broth diet, and on the 18th, meat diet, so that she must have been then considered in a convalescent state. However, she did not regain her strength so rapidly as might have been expected. The appetite soon failed, and she continued very weak without apparent cause. The bowels act well; the tongue clean; sleeps well; pulse 80.

May 3d.—Haut. Quinæ Disulph. 6tis. horis.

4th.—Debility still complained of; the bowels are somewhat purged; pulse 110; has frequent cough; tongue still clean and moist.

R Quinæ Disulphatis, gr.ij.; Pil. Ipecac. Comp. gr. v. M. ft. pilulæ ij. ter die sumendæ.

6th.—The abdomen is somewhat tympanitic; cough not so frequent.

7th.—The abdomen still slightly painful; pulse 106; tongue clean; bowels relaxed.

Liniment. Terebinth. Abdom. Applicand.

R Hyd. c. Cretâ, Pulv. Ipecac. comp. aa. gr. ij.; Conf. Rosæ Caninæ q. s. Ft. pilula 6tis horis sumenda. Omitte alia.

11th.—She complains of great weakness; the abdomen, though inflated, is no longer painful; bowels open; tongue pale; pulse 112, and feeble; sleeps badly.

Vin. Albi 3iv.

R Quinæ Disulphatis, Ext. Cinchonæ, aa. gr. ij. Ft. pilula 6tis horis sumendæ. Omitte alia.

12th.—Pulse 110. Complained, since yesterday, of pain in swallowing, which is accompanied with hoarseness and croupy sound of the voice, and some dyspnoea; the features are sharp; the countenance anxious; bowels rather purged; tongue clean. She is extremely feeble.

Emplast. Lyttæ faucibus.

R Hyd. Chlor. gr. j.; Opii gr. 4. Ft. pil. 4tis horis sumenda c. Mist. Cretæ, 3j. Cont. Vinum.

13th.—Breathing still painful, but somewhat relieved; the croupy sound remains, and there is moderate expectoration of viscid mucus; less dyspnoea. Complains much of difficulty in swallowing; pulse 112; no stool.

Contin. Pil. et Vinum. Omit. Mistura. Habeat. ova duo.

14th.—Pulse 124; has passed a bad night; breathes more hurriedly, the dyspnoea coming on in paroxysms; refers the seat of pain to the larynx; is restless and uneasy, but has no delirium; can swallow

readily, and has taken light nourishment during the last twenty-four hours.

Cont. Pil. Hyd. Chlor. c. Opio. Applic.
Emplast. Lyttæ amplum faucibus.

As the day advanced the symptoms became more urgent. Paroxysms of dyspnoea, threatening suffocation, came on, and death from this cause was inevitable unless relief could be afforded by an operation.

We found the patient feeble, anxious, and restless. The breathing was short, hurried, and laborious, the passage of air both into and out of the chest causing, in the larynx, a loud and harsh sound, indicating in a way not to be mistaken that the glottis was contracted and its sides rough and irregular. Pressure on the larynx gave pain. The paroxysms of dyspnoea were increasing in frequency and severity. Under other circumstances it would have been desirable to explore the chest, for the purpose of ascertaining the state of the parts below the larynx; but the hurried and noisy state of the breathing, combined with the great prostration of strength, rendered this measure impracticable. I therefore proceeded at once to the operation. With the fore-finger of the left hand, I readily felt the corresponding margins of the thyroid and cricoid cartilages, and resting the point of the finger in the interval, I used it as a guide, carrying a double-edged knife at once through the integuments and crico-thyroid membrane, into the cavity of the larynx. A curved silver tube was then immediately introduced, and filled the opening. The operation was effected with the greatest ease, in much shorter time than I have taken in the description—indeed, it was momentary.

Some shreds of fibrinous matter and frothy mucus, forced into the tube, were easily removed, and the patient was somewhat more comfortable. For some time she breathed more easily; but towards midnight, the breathing, accompanied by a tracheal rattle, became gradually embarrassed; a copious watery secretion flowed through the tube. She sank without undergoing any sudden change, and died about 7 A.M. on the morning of the 15th.

The body was examined eight hours after death, and the morbid parts are on the table for your inspection.

You will observe that the mucous membrane of the glottis, fauces, and upper part of the pharynx, displays increased redness, being at the same time thickened and roughened on the surface. The epiglottis is stiff and erect, its mucous membrane being thickened and very red. The pharynx healthy.

The mucous membrane below the chordæ vocales, and throughout the trachea, is

slightly thickened, reddened, covered by an adventitious layer of soft yellowish substance, constituting a complete lining of the entire tube, equal in thickness to the mucous membrane, and adhering slightly to it. This adventitious lining passes into the left bronchus and its branches, extending uninterruptedly to their minutest ramifications throughout the whole left lung. Mr. Coote has carefully traced some of the tubes to their minuter divisions as far as practicable, and you may thus see that they possess throughout the same delicate but complete lining which is more obvious in the larger ramifications. He has also drawn out from the smaller bronchi some of these tubes, and introduced bristles, so as to show that they form a chain of canals equally perfect with the mucous lining of the air passages. This exudation has been examined microscopically by Mr. Coote, who finds that it consists of pure fibrine; a few mucous globules, and epithelial scales, adhere to the surface, which had been attached to the mucous membrane.

The right lung is less actively affected than the left: the air tubes contain no plastic deposit, but their linings are reddened, and they are filled throughout with a brownish frothy fluid.

The contiguous surfaces of the pleuræ of both lungs are united principally by old firm adhesions. There is some recent effusion of fibrine, and partial agglutination in the right, with a little effusion into the cavity. The substance of the lung, covered by this inflamed portion of pleura, was in the congestive stage of pneumonia. Upon the upper surface of the left lung is a depressed puckered portion of firmish consistence, like a cicatrix, covering a hard knot of chalky substance, the remains of some former disease. The more careful pathological investigations of modern times have shown that deposits of tuberculous matter, and common suppurations, not unfrequently undergo spontaneous cure, leaving condensation of the affected substance, sometimes with calcareous deposition and a puckered depression on the surface. The condition of the pleura showed clearly that, at some former period, active inflammation had taken place in the chest.

If the disease had been confined in this case to the larynx, as we had supposed at the time of the operation, reasonable hope of recovery might have been entertained; but in addition to acute laryngitis, clearly indicated by the symptoms, there was plastic tracheitis and bronchitis, the existence of which had not been suspected. As the left lung must have been in great part, if not wholly, unavailable for respiration, while the bronchial membrane was inflamed throughout the right lung, greater imperfection and

difficulty of breathing might have been expected than was actually experienced. The serious symptoms were not of more than two days date, and they had become urgent only in the twenty-four hours before death. We cannot but regard with surprise the amount of mischief effected in so short a time. Dr. Tweedie informs me that about two or three cases of laryngitis after fever are usually seen at the fever hospital in the course of the year: but that he had never before seen plastic inflammation running throughout the bronchial tubes as in this case.

In the 27th volume of the Medico-Chirurgical Transactions, Dr. Reid has related "Two cases of tubular expectoration from the bronchi in the adult." The affection in both these cases was chronic, and apparently of limited extent. Ramified tubular portions of the adventitious bronchial lining were expectorated from time to time, and the patients recovered. An acute case is shortly mentioned; that of a woman admitted into Guy's Hospital, with severe bronchitis. Anomalous symptoms supervened, which could not be explained. After death the whole of the bronchial tubes were found to be filled with the tubular substance, as were the trachea and larynx.

The operation of laryngotomy, as performed upon this patient, is, in my opinion, the preferable mode of making an opening into the air tube, when the rima glottidis is obstructed. The coverings of the larynx in this situation are thin, so that the part to be opened is near the surface, and readily accessible. If the opening be made, as it was in this case, by a single cut, or rather puncture, and the tube be then immediately introduced, there is no fear of inconvenience from bleeding. The larynx has been removed with a portion of integuments, to shew you with what a trifling wound the object may be accomplished, and that the interval of the cartilages in this situation allows of an opening amply sufficient for respiration. The tube should be flattened transversely, with an opening of elliptical figure.

The operation of tracheotomy during life is not so easy as it appears upon the dead subject. The difficulty of breathing is increased when the head and neck are thrown back into a position favourable for the operation, which indeed the patient cannot support. The rapid movements of the air tube in hurried breathing, the hæmorrhage from the thyroid veins, and the greater depth from the surface of the part to be opened, are sources of still more serious difficulty, especially in children.

Further, the introduction and management of the tube are by no means so easy as in laryngotomy.

CASE I.—Gonorrhœal Ophthalmia; mild antiphlogistic treatment; recovery.

William Shaw, æt. 23, cordwainer, a healthy man, of temperate habits, contracted gonorrhœa last Easter.

Having accidentally caught cold in his eyes while the urethral discharge still continued, he used some of his own urine, as a lotion; this being a popular remedy for sore eyes. About two days afterwards the left eyelids began to feel stiff and itchy; they soon became inflamed and swollen: inflammation next spread to the globe of the eye, and a discharge like matter flowed from it. He applied three leeches to the temples, without experiencing any relief. For ten days he continued his ordinary occupations and habits, merely bathing the eye from time to time with tepid water, and occasionally applying a poultice: but finding himself getting worse, he came to this hospital, and was admitted April 30, 1845.

The same evening he had eight leeches on the left temple; and a weak solution of alum was injected into the eye.

May 1st.—I saw this patient, and examined the eye. The eyelids were considerably swollen, their mucous lining thickened, irregular on the surface, and of deep scarlet tint throughout. The conjunctiva oculi was of similar colour, and so congested with blood, that scarcely a trace of distinct vessels was discernible; it looked like a bit of scarlet cloth. Around the margin of the cornea this vascularity ceased abruptly, the membrane being a little raised at that part, and slightly swelled throughout. The cornea was perfectly transparent; vision unimpaired. The discharge was copious, yellow, and viscid, covering the palpebral margins, and glueing the lashes together; puriform, but not sufficiently abundant to flow down the cheek, as in severe cases of purulent ophthalmia.

Mittatur sanguis per cucurb. cruent. temporis sinistro admovenda ad 3xij; Magn: Sulph. 5j.; Ant. Pot. Tart. gr. $\frac{1}{4}$ in Mist. Camph. 6tis horis. Fotus.

May 2d.—Redness considerably diminished; the distinct vessels of the conjunctiva can now be seen; suffers little pain; bowels freely open.

4th.—The eye much less vascular; no pain; the secretion has lost its puriform character, and is now just sufficient to mat the cilia together.

7th.—He exposed himself a little too freely, and caught a slight cold: the eye is slightly more vascular: no additional pain.

8th.—The eye is again in a quiet state, the discharge nearly gone.

9th.—The vessels being still somewhat congested, he was ordered one drop of the

Vinum Opii, to be introduced between the lids night and morning.

13th.—Meat diet.

16th.—The eye is better; it looks a little watery, and the palpebral conjunctiva is still somewhat red and rough. To have the following solution dropped in night and morning—

R. Argent. Nitratis, gr. iv.; Aquæ distillatæ, ℥j.

The first drop produced no particular effect; the second made the eye feel hot and uncomfortable; he could not open the lids so readily, the vascularity was increased, and there was a slight return of yellow secretion.

Ordered to bathe the eye with cold water only.

12th.—He left the hospital well.

CASE II.—*Acute purulent Ophthalmia, arrested by circular excision of the chemosed conjunctiva.*

A child was admitted into St. Bartholomew's Hospital, with acute purulent ophthalmia of both eyes. The lids were swollen, the conjunctiva chemosed; there was abundant yellow discharge, and the corneæ suppurated. The origin and exact nature of the complaint could not be ascertained. In syringing the eyes of this child, on Sept. 8, 1843, some of the fluid spirted into the face of Mr. L., a gentleman, 23 years old, of pallid countenance, somewhat nervous temperament, and rather weak health. He felt that the fluid passed into his left eye, which he therefore washed carefully: no further inconvenience was experienced at the time. Having gone to bed on the 10th, without any affection of the eye, it became uneasy towards the morning: when he rose, he found it tender, and the upper eyelid swelled.

I saw him on the morning of the 11th, after the application of eighteen leeches in the neighbourhood of the organ, which had bled freely. The upper lid was considerably swelled; a little yellow discharge hung about the cilia, and was collected at the internal angle. The lining of the lower lid was slightly reddened and rough, the conjunctiva and scleroticæ hardly redder than usual, and not swelled. I recommended further leeching, opening medicine, and rest. Eighteen leeches were again applied, and a dose of the Liquor Antimon. Potassio-tart., not more than a drachm, was taken, which caused violent sickness. The vascular system was greatly depressed by the combined effects of the leeching and sickness, when I saw Mr. L. between 2 and 4 p.m. The eye was in the same state as before. Further depletion was now inadmissible, and considering the opportunity favourable for trying the effect of a local astringent, I directed

that a solution of the nitrate of silver (gr. j. ad ℥j.) should be dropped into the eye, and repeated in the evening, if found beneficial.

12th.—The solution was dropped in last night, and the eye felt easier: it was not repeated at bed-time. It was again dropped in this morning with unfavourable effect. The upper lid is now considerably swelled, and red in its lower third; the conjunctiva oculi swelled and chemosed, but not so as to cover much of the cornea; the latter is clear, but its perfect transparency is doubtful. Free, but not very copious, puriform discharge. Great pain of the eye, of dull aching character, caused by pressure of the swelled lid on the inflamed surface of the eye. When the lid is raised the eye is perfectly easy. Vision seriously impaired. Increased pulsation of the left temporal artery; full and rather strong pulse. Tongue whitish; bowels not relieved for the last twenty-four hours, although five grains of calomel and twenty of jalap had been taken. Twenty ounces of blood were drawn by cupping from the temple; great distress, and almost complete syncope following. The pain in the organ was unrelieved.

Considering the eye to be in great danger, and that an attempt at effectual relief should be made, I proceeded, between 2 and 3 o'clock, to excise the swollen conjunctiva, raising it with the toothed spring forceps, and cutting it off with convex scissors. The whole chemosis was removed in two semi-circular portions, a superior and inferior. Faintness was brought on by placing the patient in the erect attitude for the operation; the congestion of the conjunctiva was thus diminished, and the lids could be separated so as to gain a free exposure of the globe, and enable me to execute a complete excision of the chemosis, which is seldom practicable under ordinary circumstances.

13th.—The immediate effect of the operation was to remove the severe pain in the eye, which has not returned. At 8 in the evening, Mr. L. was conveyed, for the sake of coolness and quiet, the weather being then very hot, from his apartments in the city to the house of a friend at the West End. He slept the whole night, waking only from time to time, as the eye required cleansing from discharge. The eye is quite easy; the discharge free; the swelling and redness of the upper lid about the same. The conjunctiva oculi not very red; but little appearance left by the excision. The cornea is rather dull, and the patient sees nothing with this eye. Pulse soft and quiet; skin cool and moist; tongue tolerably clean. Some excitement in the organ and system took place in the evening, when the pulse became fuller, the skin warm and dry, the tongue a little loaded. There was increased

action in the temporal vessels, but the eye was not painful.

The hair, of which there is much on the head, to be cut short, and the head bathed with cold water; a soft rag, wetted with cold water, to be kept on the eye, as it has been throughout; four leeches on the instep of each foot.

℞ Magnes. Sulph. ʒj.; Pulv. Antimon. Potassio Tart. gr. jss.; Tinct. Digital. ʒj.; Aq. Menthae—distill. aa. ʒvj. M. sumat cochlearia ampla tria quarta vel sexta quâque hōra.

14th.—The leeches bled freely, and gave marked relief. Two doses of the medicine were taken, which acted on the bowels and caused nausea. Mr. L. has passed an excellent night. The eye is free from pain, but there is no vision.

15th.—An excellent night. The upper lid less swollen; cornea quite clear, and vision returning.

The eye to be bathed occasionally with solution of alum (gr. ij. ad ʒj.)

16th.—Continued favourable progress, though a little increased activity of local circulation was experienced towards evening. Light food only has been taken, such as tea, bread-pudding, beef-tea; the latter was, at first, too exciting. The alum solution has no sensible effect; the strength to be doubled.

18th.—The bowels freely opened yesterday by an active aperient. Rapid convalescence. The swelling of the upper lid lessened; the transparency of the cornea perfectly restored; vision improved, but Mr. L. can scarcely distinguish persons. The conjunctiva oculi is still swelled, and there is free discharge. The alum lotion is found agreeable, and used freely.

20th.—The swelling of the eyelid and conjunctiva, and the discharge, are diminished. The eye feels comfortable after the lotion, which causes no smarting; the strength to be increased to six grains in the ounce. Vision nearly the same; appetite and rest good. If the bowels are not open in the morning, the circulation is excited, and some uneasiness is experienced in the eye. Sometimes headache has come on in the night; it goes off on sitting upright in the bed, or rising for a few minutes. Marked benefit has been experienced throughout from keeping the head in the erect position. Soon after the last date, the patient went into the country, merely using the alum lotion, and regulating the bowels. He soon regained strength and perfect vision. There was still some yellowish discharge, particularly from the under surface of the globe and lower lid, irritation being kept up by some prominent granulations where the chemosis had been excised. In November

it was necessary to snip these off. Vision was now perfect, and the cornea in its normal state, except that a small ulcer, of oval shape, existed below the inferior border of the pupil. It caused no uneasiness, and was, indeed, only discovered by close inspection, as it was nearly transparent. It healed gradually.

The subject of Purulent Ophthalmia will be continued in the next lecture.

LUMLEIAN LECTURES,

Delivered at the Royal College of Physicians.

By SIR GEORGE LEFEVRE, M.D. &c.

Prophylactic Measures—Antidotes.

IF we adopt Liebig's views in his theory of disease, we shall feel intimidated from entertaining any hopes of producing a cure by direct action upon the solids or fluids of the body, for we cannot thus undo what has already been effected. "For disease is the result of such disturbance in the system as the vital forces are not able to resist, or are weaker than the disturbing cause."

Complete cure is not effected till the external action and resistance are brought into equilibrium. Hence it must follow, that a diseased condition once established cannot be made to disappear by the chemical action of a remedy. There can be no antidote to an animal poison, which, passing from a latent state, and forming a definite compound with the animal substance, produces its specific action in the system. We are not in the same position with the animal economy as when we apply an antidote to a mineral poison, for here we counteract the effects of the noxious matter before disease is set up; whereas in the other case it is this very presence of the disease itself which first leads us to the knowledge of the cause.

Now, arguing *à priori*, we might reason otherwise. We know that every globule of blood contains its atom of iron, and experience teaches us that in thirty and less seconds we can form chemical compounds with this iron throughout the whole mass of blood. As a grain of sand is to the sea-shore, so is this globule to the whole mass; and yet we can form a chemical compound with it, which can change all its relations of action upon the system, and not one chemical compound, but many; we can form definite proportions with the salts of iron formed in this globule.

If, then, art is able to effect this, why should not we be able to throw into the system such antidotes as would act upon the morbid poisons in the globule as other matters do upon the iron; or throw such

matters into the system as will counteract its effects should it present itself? for it is from the preventive system alone that we can hope for assistance; and the following fact offers us some encouragement.

Liebig informs us that the colica pictonum is unknown in all the white-lead manufactories where the workmen are in the habit of drinking weak sulphuric acid lemonade.

The disease of colica pictonum cannot be so cured if once formed.

Might it not be possible to prevent the effects of mercury upon the system by some similar antidote?

Such a proceeding seems both plausible and rational, but in our present condition of knowledge two circumstances oppose themselves. In the first place, we lack the antidote; in the second, when we should have the power of making use of it, it would be already too late. The disease set up in the system is not to be cured by any remedy which can counteract its future effects.

It may perhaps be admitted, that limits may be put to the ravages, and that the process may be ascertained or retarded by such measures as we might propose, but this would not at once restore the normal condition of the system.

"The art of the physician," says Liebig, "consists in the knowledge of the means which enable him to exercise an influence on the duration of the disease, and in the removal of all disturbing causes, the action of which strengthens or increases that of the actual cause of disease."

We can hope for nothing, therefore, from chemical agency, when generally diseased action is set up, and all that we can attempt is, to find means of guaranteeing the healthy from the influence of the diseased, by putting some impediment in the march route of the morbid poison, so that it shall impinge harmless upon healthy structure. If it be allowed to form its compound, it will then be too late; and here we are, and must remain, in a labyrinth of doubt and uncertainty as to the time of effectual action, for we cannot judge of causes but by effects, and poisons may or may not be dormant in the system, and thus reduce our operations to matter of conjecture.

It has been asserted, that with respect to preventive measures for hydrophobia, we may be always in time, provided the operation of excision be performed previous to the appearance of any constitutional symptom. Yet many may perhaps have waited for this warning, which, when it did come, was of no use to them, and some perhaps have anticipated it needlessly when there was nothing to fear. Still we conceive the fact to be of very great importance, as regards the belief in the necessity of a definite combination of

matters to constitute a morbid poison; for here is one lying inert for months, and of no avail. If this be true, also, as regards the excision of the part, it proves that the poison is not circulating in the blood, but lodged in its narrow cells till some combination of circumstances shall call it forth, when it shall communicate to those very nerves upon which it had been reposing perhaps for months the most dire effect. So it is with the exanthemata; till they have formed that combination with animal matters which constitutes their real existence, we know not where to find them; they surround us on every side, impinge upon us, and are reflected off or graft themselves fatally on two-thirds of those who are within their reach. These two-thirds have nothing to hope for from chemical decomposition. The mischief is done. "In all diseases," says Liebig, "where the formation of contagious matter and of exanthemata is accompanied by fever, two diseased conditions simultaneously exist, and two processes are simultaneously completed. The blood, as it were, by reaction, *i. e.* fever, becomes a means of cure, as being the carrier of oxygen, without the aid of which the diseased products cannot be rendered harmless, destroyed, or expelled from the body; a means of cure by which, in short, neutralization or equilibrium is effected."

As it is not in our power to arrest the progress of the disease, when fully formed, we must direct our attention to such means as will render the matter innocuous or make the healthy proof against its influence. This will be comprised in the employment of chemical disinfectants and mechanical contrivances for purification.

It has been proved that scarlatina is not less severe when the patient has been inoculated. I shall submit to your notice two chemical experiments from the mineral and organic kingdoms, to prove how a very minute particle of matter, and apparently indifferent in its action, is nevertheless sufficient to prevent the chemical reactions of large masses of other substances to which they are united.

The sesqui-chloruret of chrome, chemically pure and sublimed, is completely insoluble in water, either cold or boiling. It is equally insoluble in all acid solutions. It is not attacked by concentrated and boiling sulphuric, nitric, or nitro-muriatic acid. All of these are alike without effect on this combination, one of the most stable in the mineral kingdom.

It is formed by $\text{Cr}_2 \text{Cl}_3$. The proto-chloruret of chrome differs from the sesqui-chloruret by the abstraction of an atom of chlorine. It is represented by $\text{Cr}_2 \text{Cl}_2$.

This second salt is highly soluble, and absorbs with the greatest avidity the oxygen contained in the air and in water to form a new product, $\text{Cr}_2 \text{Cl}_2 + \text{O}$.

The following fact is perhaps without parallel in mineral chemistry :—A quantity, however infinitesimal, of the proto-chloruret of chrome, mixed with one million times its weight of the sesqui-chloruret, transforms this salt from an insoluble into a salt soluble in every proportion, if the proto-chloruret is pure, but if it has absorbed any portion of oxygen, it becomes inert, and no longer alters the sensibility of the sesqui-chloruret.

Here, then, is an example of a substance as nearly allied as possible in its chemical composition to a second substance, completely preventing one of the most important chemical properties of that substance, even though mixed with it only in infinitesimal proportions; and this preventing action is itself neutralized by the introduction into the poison (for the proto-chloruret is here in reality the poison of the sesqui-chloruret) of an infinitesimal quantity of oxygen. This modification is evidently allied to divers modifications frequently observed in organic chemistry, viz. the dissolving action of diastase on starch, &c. &c.

Why should not the transformation of blood from a coagulable into an incoagulable liquid, a transformation effected by many poisons, be explained or rather conceived after a similar fashion?

Is it more difficult to conceive that ten pounds of blood should lose its essential property, coagulability, under the action of one grain of poison, than that ten pounds of a salt should lose its characteristic property, insolubility, under the influence of one-grain of another salt as nearly allied to the first as healthy blood is to any animal virus or morbid poison?

The following, and I believe very recent experiment in organic chemistry, proves in a most striking manner the property which some bodies possess, even in the most infinitesimal doses, of counteracting chemical action.

If one ounce of iodic acid, half an ounce of oxalic acid, and two ounces of water, be mixed together in a glass bottle, exposed to a moderate heat, 25 cent. (77° F.) and to the light of the sun, a process of combustion immediately commences. The oxalic acid is burnt, hydriodic acid is formed, carbonic acid is evolved, and after a short space of time the whole of the oxalic acid is destroyed. The same results, but to a less degree, are produced, when tartaric, lactic, and formic acids are used.

If in any one of these acid solutions a drop of hydrocyanic acid is let fall, the whole process of combustion is arrested.

The two acids exert no influence on each other, and the mixture may be exposed for days and weeks to the action of the sun, and a temperature of 60°, 80°, 100° C. (212° F.)

without the slightest reaction taking place or a particle of carbonic acid being evolved*.

Now, the chemical process of life is a real combustion, a combustion carried on not only in the lungs, but in every organ and tissue where the process of nutrition is going on. It is a combustion to a great extent of lactic acid, evolving vapour and carbonic acid, which are carried off by the venous blood, and poured out by the lungs. The chemical process of life may be compared to this reaction of iodic acid on the vegetable acids, which, like the phenomena of nutrition, is accelerated by light and heat. Is it so singular that a drop of hydrocyanic acid should arrest instantaneously a combustion of a similar nature carried on in a glass bottle?

The elucidation of such facts will serve hereafter to render the action of poisons upon the animal economy more comprehensible. They will not appear so completely foreign to all other chemical ideas†.

The prosecution of these inquiries may hereafter lead to more important results. If chemistry cannot at present assist us in modifying the disease, when it is once formed, it may enable us to destroy the poison in its uncombined state with animal matter, and so prevent its propagation, or if not wholly so, may weaken it in some degree, so that in the process of time a milder disease shall be generated—a fever which shall operate upon one part of the blood, and not throw the whole mass into fermentation, to carry out Liebig's views of fermentation, as regards the small-pox and the cow-pox. We must turn our attention, then, to consider the means of attacking this poison in its uncombined forms.

I shall speak of two methods which have been employed with success in disinfecting clothes which were imbued with the virus of the plague; I allude to the experiments of the late Dr. Bulard, who fell a sacrifice to his zeal in investigating the nature of this disease in Turkey, and who was employed by the Russian government in regulating the quarantine laws at Odessa.

His researches on the plague led him to the belief, that this malady never breaks out sporadically, nor bears an epidemic character; and amidst its greatest ravages, he asserts that no European habitation was ever known to be attacked, if isolated from those where the disease was raging—hence, isolation becomes a means of preventing the propagation of the contagion.

All the supposed disinfecting agents, as chlorine, or the fumes of sulphuric, acetic, muriatic, or nitric acids, as all the fumigations with myrrh and frankincense, and aromatic plants, are perfectly useless, and if

* See note, at end of the Lecture.

† Acad. des Sciences, Comptes Rendus, 1844, Oct. 14, 2d Semest. No. 16.

any effect can ever have been produced by them, it is merely from the heat employed to disengage their volatile matter. It is by two processes only, exposure to high temperature and immersion in cold water, that disinfection can be accomplished.

The extinction of the plague is entirely due to thermal changes, and depends upon a continuation of hot or cold weather for some days successively. This has been observed of several plagues which visited Europe, and more particularly the one at Moscow, where the setting in of the frost arrested its ravages.

Extremes of heat, according to the author's observations, have the same effect. At Cairo, Smyrna, and Constantinople, it was found that the disease diminished rapidly, and soon extinguished itself, when the temperature rose to 80 or 90, and continued at that elevation from six to eight days.

If these states are produced artificially, the problem of disinfection will be solved, and it only remains to establish a high or low temperature; but the former being much more easily accomplished than the latter, it is more frequently resorted to.

As regards the process of disinfecting clothes, and various substances, the temperature to which they are exposed must vary from 110 to 160, according to their susceptibility of impression. The length of time will be in an inverse ratio with the elevation of temperature, the surface exposed, and the conducting power of the materials. Cotton, which is one of the most susceptible substances, when exposed for twelve hours to 110-140 will be sufficiently purified. The same temperature disinfects houses.

M. Arago quotes the authority of Dr. Henry upon the efficacy of heat in controlling contagious influence. A temperature of 180° F. produces no change either in cotton or stuffs which serve for clothes. A temperature of 212° destroys the contagious property of the vaccine and variolous poisons; and upon analogous reasoning, the same chemist supposes that a high temperature may act in the same way upon other contagious matters. Heat, moreover, from its principle of equable diffusion throughout all bodies, is more certain in its disinfecting qualities, and more quick in performing this than gases, for these, from their gravity and greater or less density, only penetrate imperfectly the bodies or substances submitted to their action.

Note to Sir G. Lefevre's Lecture, p. 313.

ON THE REACTION OF OXALIC ON IODIC ACID.

[The reaction here referred to by Sir G. Lefevre is one of the most remarkable in chemistry. The proportions of iodic acid and oxalic acid above given, are in the ratio of about one equivalent of iodic, to one

equivalent and one third of the hydrated oxalic acid. When the solutions of the acids are mixed, there is a slight change of colour; this becomes deeper at 70°, and of a brown colour on boiling, which again deepens considerably by standing. A large quantity of the purple vapour of iodine escapes when the experiment is performed in a tube, and a gas is evolved which precipitates lime water (carbonic acid). On continuing the heat, a portion of iodine separates in dark crystalline lamellæ, and the process of decomposition continues until the whole of one of the acids is decomposed. If the iodic acid be in excess, the oxalic acid is entirely destroyed, and *vice versa*. It is remarkable that on the addition of a few drops of weak hydrocyanic acid to the mixed acids before boiling, there is no change of colour, the liquid remains perfectly clear, and no carbonic acid is evolved on boiling, for lime water remained unaffected on passing the vapour into it. Supposing the decomposition to have begun, the addition of a few drops of hydrocyanic acid arrests it; the liquid loses its brown colour, becomes clear, and no carbonic acid escapes.

The singular effect of hydrocyanic acid on iodine, was, we believe, first announced by Mr. Yorke, of the Canterbury Hospital, five years ago, and was proposed by him as a test for prussic acid. A very small quantity of hydrocyanic acid will entirely destroy the colour of a solution of iodine, probably by forming colourless compounds, *i. e.* the hydriodic acid and the iodide of cyanogen. Mr. Yorke, in a series of ingenious experiments, ascertained that the colour given to two ounces of a standard solution by one-eighth of a grain of iodine, was entirely destroyed by one minim of medicinal hydrocyanic acid, diffused in two ounces of distilled water. This would be equivalent to the twentieth part of a grain, or even less, of anhydrous prussic acid,—a reaction exceedingly delicate, but open to the objection that many other substances, (such as sulphurous acid, sulphuretted hydrogen, alkalies and their carbonates) will also destroy the colour of iodine. Hydrocyanic acid acts in a similar way upon bromine.

When iodic acid is boiled with tartaric acid, there is a very imperfect decomposition,—the liquid scarcely changes in colour, and but a very minute portion of iodine is evolved: the effect is not increased by allowing the mixed liquids to stand for an hour after boiling. A mixture of iodic and citric acids may be boiled without any apparent decomposition. These last-mentioned facts may enable the experimentalist to discover a very minute portion of oxalic acid, when mixed with tartaric or citric acid; for on dropping a small crystal of oxalic acid into the mixtures of iodic with citric and tartaric

acids, and warming them, the decomposition began immediately, the liquid became dark coloured, and iodine vapour was freely evolved. The same changes take place under the influence of light, but more slowly. As neither the iodic nor the oxalic acid contains hydrogen, hydriodic acid, if formed, could only result from the decomposition of water, but no hydriodic acid could be detected.—*ED. GAZ.*]

Original Communications.

MEMOIR ON THE SPONTANEOUS COAGULATION OF VENOUS BLOOD IN CACHEXIA, AND IN CHRONIC DISEASES, PRINCIPALLY PHTHISIS AND CANCER*.

By E. BOUCHUT, D.M.P.

Translated for the London Medical Gazette

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THE last stage of chronic diseases is often attended by the coagulation of the blood in the large veins, especially those of the lower extremities. It may be called "adhesive phlebitis," "spontaneous venous obliteration," or "phlegmasia dolens non-puerperale," &c. But the last of these terms appears the most convenient. In truth, the expression phlegmasia dolens is synonymous with spontaneous obliteration of the veins; it distinguishes the disease from traumatic adhesive phlebitis, and also from such cases as manifestly result from irritation arising from affection of a neighbouring organ. The epithet "non-puerperale" distinguishes it from that form of disease which occurs after parturition. The nature of the two affections is so similar that the same name is equally applicable to both, though it is not useless to note their diversity as to origin by an epithet. And thus "phlegmasia dolens non puerperale" is applied in the following pages to spontaneous obliteration of the veins occurring in the course of cachexia or chronic diseases.

This affection, generally little known among medical men, is well deserving of attention. A few examples have been recorded in scientific transactions, and some published, though only as

instances of rare and unknown facts. Thus, the cases recorded by M. Andral, Dr. R. Lee, M. Bouillaud, M. Cruveilhier, &c. are of great value, as they establish the existence of the coagulation in the veins in chronic diseases, without, however, pointing out any connection between them; indeed, the small number of facts, and the general inattention to the subject, prevented it.

In a lately-published memoir (on Phlegmasia Alba Dolens,) I had occasion to notice these cases; but I have since doubled the number, and therefore the value, of my observations. I brought together, in my mind, all those cases of venous obliteration which are marked by the same anatomical character, progress, and symptoms; and I was led to the opinion that there existed, in chronic diseases, an obliteration, more or less, of the veins of the same nature as that which occurs in the puerperal state.

I have since collected, at La Charité, a sufficiently large number of cases to demonstrate more completely the existence of this coagulation in all chronic diseases. I shall endeavour, then, to establish, in this paper, the connection between the state of the system and obliteration of the veins of the extremities; and leaving to others the task of discovering the law, I rest satisfied with proving the fact. The subject may be thus divided:—

1. The facts on which the proposition rests.
2. The anatomical character of the venous coagulations; the veins in which they are found, and the anatomical character of other organs.
3. The symptoms announcing the coagulation of the blood.
4. The progress and termination of the malady.
5. The diagnosis.
6. The prognosis, and its value in semeiology.
7. The etiology.
8. The treatment.

CHAPTER I.—*The Statement of the Facts.*

We find little mention of this disease among authors. It remains often unnoticed, as the surface of the body is unaffected, and the depressed state of the system in which it occurs, requires all the care of the physician. It is probable that from this cause

* *Gazette Médicale*, April 1845.

arises, in many instances, the œdematous condition of the lower extremities so often observed in the last stages of phthisical and cancerous disease. It is not necessary to look far back in order to find the names of those authors who have met with partial coagulation of venous blood in cachectic subjects. All the facts are furnished by our contemporaries, and date only from the time when pathological anatomy became the basis of medical science. Hunter makes slight mention of the occurrence of adhesive inflammation of the crural veins in phthisis; but, owing to his attention being chiefly occupied in the consideration of suppurative traumatic phlebitis, and its dangerous consequences, he attached little importance to the circumstance. This proposition was, however, reconsidered by Abernethy and Travers, and was at length published in France by M. Breschet, in his translation of Hodgson (*Diseases of the Arteries and Veins*). He founded his argument on three new cases—one in phthisis, a second in cachexia resulting from the rapid progress of caries of the vertebra, and the third in a person who, on the disappearance of an exanthem, had sunk into an adynamic state of great danger.

M. Bouillaud, in the important essay which he published on venous obliteration, could have, from the facts he possessed, resolved the question. His object, however, was higher; he sought to establish the connection between venous obliteration and dropsy of the extremities, in which he has completely succeeded. There are, in this essay, four examples of coagulation of the venous blood in the lower extremities, which took place in the progress of various chronic diseases. Two of these were noticed in persons the subjects of phthisis, one in a female suffering from cancer, and the fourth in a person who had at the same time cancer of the kidney compressing the vena cava, pleurisy, and chronic peritonitis. The last case ought to be excepted, because the vena cava was compressed; and it is evident that had the cancerous diathesis been absent, such compression could have accounted for the coagulation.

M. Bouillaud then relates two cases of obliteration of the vena porta in persons affected with tubercles of the liver; but there were attendant cir-

cumstances which complicated the cases, and on which it is useless to dwell. This obliteration may result from tubercular cachexia, but it may also arise from inflammation in the neighbouring parts. We need not, then, consider these cases.

M. Rayer has also more than once observed venous obliteration in the course of chronic disease, without, however, admitting any connection. His observations of phlegmasia alba dolens in the male, referred to by all who have written on the disease in puerperal women, were probably founded on the existence of chronic disease.

M. Andral has published two cases of venous obliteration; one in phthisis, the other in a woman the subject of cancer.

M. Cruveilhier, in his profound study of the subject of adhesive phlebitis, is said to have observed similar cases in cancerous and phthisical disease.

Two of my teachers, MM. Piedagnel and Trousseau, have met with many cases, first, in phthisis, secondly, in cancerous affection, and, what is most extraordinary, always in cancer of the stomach. Yet, though many hospital physicians have noticed this complication, it has escaped the attention of most, inasmuch as the relation which it bears to cachexia and chronic diseases has never till now been determined.

There are, besides, in the Transactions of the Anatomical Society, ten cases relating to the subject; which occurred in far advanced syphilitic cachexia, in phthisis, in cancer of the rectum, the liver, mesentery, and uterus, and in caries of the vertebra; the affection was seated in the vena cava, veins of the pelvis, and in those of the lower extremities.

I will now adduce, in support of my proposition, cases which have occurred in my own practice, or which I have collected for M. Trousseau or M. Rayer. Four of these cases have already been noticed in an *Essay on Phlegmasia Dolens after Parturition*: the others I will now enumerate. 1. Three females the subjects of phthisis; they were in a state of far advanced marasmus, and had, during the last month of their existence, painful heat of the lower limbs from obliteration of the veins of the legs and thigh. The coagulation of the blood ceased on

each side on a level with the iliac veins. 2. In a man affected with encephaloid cancer of the liver, who had œdema of the left leg only. 3. In a woman affected with nephritis from the presence of a calculus, with destruction of the tubular structure of the right kidney, and retention of pus in the pelvis;—the preparations were presented to the Anatomical Society. 4. In a woman convalescent from typhoid fever, but reduced, as is often the case, to a cachectic condition, with evident gastric affection, precluding the taking of nourishment; she vomited everything, and all attempts to afford her sustenance proved ineffectual. She died on the sixty-fourth day of the disease, after three months of intense suffering in the legs, extending on each side midway to the external crural veins. 5. In a young lad, suffering from intense agony, which extended up the posterior part of the trunk. He was oppressed by suppurative fever and had fallen into a complete state of marasmus. He complained one evening of acute pain in the calf of the left leg, which, on the following day, became œdematous; the skin pale, rather tense, painful in the course of the vessels, and pitting on pressure. There was found obliteration of the deep veins of the thigh and leg. 6. In a little girl, three years of age, who had received a burn over the whole back, and been much weakened by profuse suppuration; she had painful œdema of both legs from coagulation in the deep veins. 7. In a woman convalescing from pneumonia, for which she had been copiously bled, and reduced thereby to a state of anæmia, with a loud bruit over the carotids; she had painful œdema of the left leg, with great development of the superficial veins. In this case there was no autopsy. 8. In a woman who died of heart disease, and in whom the deep and superficial veins were obliterated. 9. In a man, likewise affected with cardiac disease, in whom there was superficial obliteration of the superior vena cava, the axillary, deep jugular veins, together, also, with the deep veins to the middle of the fore-arm. It was evident in many places, particularly in the neck, axilla, and bend of the arm; for the veins were engorged, and reduced to mere painful cords. In this person, a

tissue of innumerable veins was observed over the neck and chest, sometimes resembling erectile tissue, sometimes varices, and thus was the collateral circulation established; the face and upper extremities were livid, indeed completely cyanosed. These parts were infiltrated with serosity, and pitted on pressure; and there was hydrothorax on the left side. The dyspnœa was so excessive that every moment appeared his last. The cough was distinct and attended by pain; the expectoration abundant, liquid, frothy, at times mixed with blood, though there was no decided hæmoptys's. The upper differed remarkably from the lower half of body; the latter was perfectly white, without a trace of ascites or anasarca, while the former was livid and infiltrated. He remained in the hospital five months, during which time he was thrice bled, was frequently blistered, and went out at last as well as could be expected. The cyanosis, as also the hydrothorax and anasarca, had disappeared, but the countenance still retained a slight violet tint, and the dyspnœa was increased by the least exertion. 10. Lastly, in a woman who had in succession painful œdema of each of the upper and lower extremities. The following is an outline of this case.

CASE.—Marguerite Eléonore, aged 38, had for a long time been affected with cancer of the uterus, and had become very anæmic from excessive uterine discharge. In addition to sufferings from the above cause, she suffered from intense pain, owing to a partial but successive obliteration of the veins of the right and left leg, of the right and then of the left arm, as also of those at the base of the neck. This complication offered important points for consideration. A month before her admission, she had experienced an intense pain deeply seated in the right leg, extending to the calf and thigh, increased even by the moderate pressure of the bed. Œdema of the foot and the lower part of the leg supervened; and at the same time, the superficial veins, hitherto not visible, became apparent. In about fifteen days, the left leg was similarly affected.

She was admitted Nov. 18, 1843, under M. Rayer. In the course of a few days, she complained of a vague-

pain and stiffness in the right arm and fore-arm. Pressure, especially in the course of the vessels, increased the pain. The limb was not swollen, and there was no œdema. The ulnar vein at the elbow-joint, the only large vein of the fore-arm visible, was hard, large, and distended by a rather soft substance, which gave way under the pressure across the skin. The whole circulation in the vessel was interrupted. Along the course of the vessels of the arm there were hard cords, the consequence of this obstruction in the veins. There was nothing to be seen in the axilla, or base of the neck, as high as the jugulars. Some of the superficial veins, as of the hands, were greatly distended by fluid, and continued permeable by blood. The pallor of the skin underwent no change, neither was the temperature sensibly affected; the sensation was not impaired. The pulse remained feeble and slow, as on the preceding days, being in the morning about 76, and in the evening a little quicker, as was usual, from febrile action. At the end of two days, the (right) arm became enlarged with general swelling of the tissues, but without any appreciable serous infiltration. There was then little change for a month. The distended veins had become slightly diminished in size. The median veins were scarcely perceptible; but though the veins were smaller, they were, on this side, harder and more resisting. All at once, about this time, an intense pain was felt in the left side of the neck, in the axilla, and in the entire left arm. Coagulation of the blood was detected in the superficial jugular veins, and in those of the axilla, arm, and even fore-arm. The vein at the elbow-joint was distended with coagulated blood; it formed under the skin an enormous cord, hard and attended with great pain. There were neither swelling nor œdema of the limb; and the skin remained of a yellowish pale colour as before. In about eight days, the distended veins, lessened in size, became like hard cords, and œdema supervened.

Thus, in a space of time between two months and a half and three months, she had in succession partial affections of the different veins of the lower and upper extremities, and then of the

chest and neck. The coagulation of the blood was evident from the first, as the hard cords formed by the engorged veins were not obscured by the presence of œdema. It appears almost incredible that so extensive an affection of the venous system should exist without the circulation being in a greater degree affected. The œdema was slight, and evidently did not occur till some time after the commencement of the attack. The colour of the skin was not altered as might have been expected, so that the superficial veins, which had become dilated to supply the place of those which were distended, almost escaped notice. This is certainly an extraordinary fact.

[To be continued.]

PRACTICAL OBSERVATIONS ON MALINGERING.

BY FRAS. W. GRANT CALDER, ESQ.

Assistant-Surgeon 2nd Regiment of Life Guards.

[Continued from p. 108.]

A malingerer? An attempt to deceive doctors. Interesting cases. A case conveying a useful lesson.

THE subject of the following case was supposed to be a malingerer, and had been openly accused as such before I saw him, and that too, indeed, before anything had in reality been done for him. I was requested to see him entirely on this account, for the mind of his medical attendant (a young man of some three years standing in the service) was already made up on this point, and the lad was merely shewn to me as a malingerer. He had not even been kept in bed for a few days, to see what rest might not do for him,—that disgusting and most iniquitous *mania*, the detecting of feigned disease, having taken possession of his mind. A recruit joined the regiment of foot at Windsor. He soon after began to complain of lameness in his right knee, and by and by he sought admission into hospital on account of it. He walked remarkably lame upon it, and declared that he could not do otherwise. There was nothing to be seen to bear him out in his assertion; he looked the picture of health, and the joint felt cool, and was free from all unnatural appearances. He said that the lameness came on

suddenly while at drill, and this was all he could say about it. I recommended that he should be discharged, not to his drill, but to perform the common fatigue duties of the barrack. At the same time I advised that the non-commissioned officers should be charged to observe him when he least suspected it, and to mark whether, when he thought he was free from observation, he then walked lame or not; for by an arrangement of much the same nature we were able to detect the malingering of a man who, after a fracture of the leg, persisted in being unable to walk without limping. This lad gradually recovered; at least, although we lay together for months after, I neither saw him in hospital, nor heard anything of him; and therefore I take it for granted that the statement I have made is a correct one. Now if we carefully compare this case with the following one, which occurred in my own regiment, we shall find ample room for permitting us to believe to the full extent in what the young infantry lad stated regarding his case.

K., a stout young man, aged 19, while at sword exercise on foot, suddenly fell down as if shot, looked pale and sick, and after a few minutes recovered sufficiently to be able to walk to his barrack-room with the assistance of a comrade. While standing with both legs separated, and both feet somewhat everted, and after making some cuts with his sword to the right, the word was given to make some cuts to the left; and in order to accomplish this, the left knee was bent a little inwards, the foot still remaining on the ground in the everted position, while he carried his face and his sword towards the left: at this moment he fell. In the course of the afternoon he recovered sufficiently to be able to attend his stable in the evening. This was on the 27th May; on the 28th and 29th he was excused attending drill, but as he was still unable to walk about properly, he was sent to hospital on the 30th. When admitted, he stated that when the accident happened he felt something "pop out," and that immediately on seizing hold of his knee it "popped in" again. This sensation of "popping out" and "popping in" occurred in the region of the internal lateral ligament. There was no in-

flammation of the integuments, and he could both bend and extend the joints well. The principal complaint made was of a weakness in it, and a certain degree of tenderness on pressure in the region of the internal lateral ligament. He was confined to bed, had the joint leeches, and well fomented, and was discharged quite well on the 7th June. This accident has some resemblance to that described by Sir A. Cooper as partial luxation of the thigh-bone from the semilunar cartilages; but yet it could not have been that; it would answer rather to the descriptions given of a loose cartilaginous body in the joint, only that we could detect nothing of the kind. It is now several years since the accident, and he has remained perfectly well.

"You are a malingering rascal," is a charge easily made; but suppose that it is not true, what confidence can the men be supposed to have in him who made it? I can tell young regimental surgeons,—none whatever. Their faults fly through the ranks quick as tongue can tell them, and their patients die, not for want of attendance, but simply because they place no value on their skill. Our characters as professional men we must therefore keep dear as our lives; for hear what that excellent man, Democritus junior, says on this head:—"Galen holds, confidence and hope do more good than physic; he cures most, in whom most are confident. And Paracelsus assigns it as an only cause why Hippocrates was so fortunate in cures, not for any extraordinary skill he had, but *because the common people had a most strong conceit of his worth.*"

For the detection of malingerers the medical officer must ever have his eyes about him; and it is remarkable how slight the information shall sometimes be, which will lead to an accurate knowledge of the case. E., a private in the regiment, hung off and on, either in hospital or on the convalescent list, for several months. During all this time he complained of an enlargement of his belly, accompanied with indigestion and irregular bowels. The enlargement was very conspicuous, and was somewhat tympanitic to the touch. Various was the treatment adopted, and the case began to be thought difficult of cure, when my colleague, in order to ascertain whether his abdomen

was really getting larger or smaller, got a piece of tape, and, for this purpose, commenced measuring him every other day. While he was in the act of doing this one day, I, by the merest accident, observed that the man kept his lips together, and, by keeping in his breath, attempted to make the most of the swelling. Nothing was said at the time, but after he had gone I mentioned what I had seen, and surmised that a man really affected as he affirmed himself to be, would not do so, but would rather rejoice to hear and see that his bulk was diminishing. Accordingly, on the following morning he was told, that as little improvement had taken place latterly, he must be put to bed, and have various things done for him. In answer to this he said, that "Nothing he had yet had done him much good, and that he was of opinion he would not be able to act as a soldier any more." He was mildly encouraged to think otherwise, and reminded that he was as yet a young man, and had therefore youth on his side; he was further told by my colleague that he had no fear of curing him, for, said he, "I have cured a hundred cases such as yours in my lifetime, and I have not the slightest doubt I shall cure you likewise." He was now treated in earnest, and the greatest firmness on our part was displayed. No greater encouragement to a malingerer can be given, than for the medical officers to appear to waver in their line of conduct. A man feigning disease looks his medical attendant from time to time in the face with prying glances and arch inquisitiveness. He is constant in his attempts to read from the surgeons' countenances whether they in any degree despair of effecting a cure, and if he can glean therein any encouragement, he becomes doubly resolute, and doubly difficult to manage. However, I need scarcely add, that if he observes, for a succession of days and weeks together, in his medical attendants, nothing but countenances full of hope, energy, and courage, he soon begins to despair, and, as a general rule, gives in. In the case just related, the man after a time gave in, and subsequently remained at his duty. My opinion is, that he was in the habit of taking something which produced the tympanites: we know that peas will do this; and I do not

doubt that there are other articles of a less bulky nature which will produce a like effect. (On this subject I beg to refer the reader to pages 113 and 114 of the last edition of Mr. Marshall's book on the Enlisting and Pensioning of Soldiers.) We afterwards learned that this man, a little before he came to us, had married an old woman, with whom he either wished to return into civil life, or from whom he wished to run away. The latter version of the story, I much fear, was the true one. He was a young man, and therefore, no doubt, fancied that he could easily find his way into another regiment serving abroad, provided he were discharged by us. Desertion being a doubtful means of getting clear of the service, he did not have recourse to it. The only doors by which he could escape—for he had not money to purchase his discharge—being therefore shut against him, he took to his duty and his old woman likewise, and according to all accounts has served both faithfully ever since.

It is seldom that we meet with a case which better teaches us to guard against accusing a man, either in thought, word, or deed, of acting an improper part, than the following. Its history, up to the commencement of the last three months of his existence, was all in favour of his scheming; and yet, from its sequel, the young medical officer ought to learn the absolute necessity which exists for treating every case kindly, patiently, and with due reference as to what *may* be the result. T., aged 31, had been in the regiment for ten years. Within the first few years he deserted, and subsequently he lay in hospital for a long time, feigning deafness. I say he feigned the affection, because, being clearly detected by the orderly man of the hospital, he gave in. After this he proved himself a bad soldier, and tried "every move" in order to obtain his discharge. The commanding officers of the regiments of Life Guards have the power of discharging a worthless man at a moment's notice, and they not unfrequently do so with an incorrigible scoundrel. He fancied that by proving himself bad beyond amendment, he would be able to obtain what he was so anxious to procure, and what he had failed to obtain by all other means, viz. his discharge from

the regiment. But the regiment was then commanded by that excellent officer, Colonel Greenwood, and we had for our adjutant Lieutenant John Carr, whom the hand of death has since cut off, in the 41st year of his age, a pattern to adjutants, and a credit to the British army, and therefore so well calculated to aid and assist. Well, he was one day brought by the adjutant before the commanding officer, in consequence of his repeated bad conduct; and the colonel, with all that firmness for which he was noted, unhesitatingly told him, that he should never obtain his discharge while he commanded the regiment by following such a course, but that if he found that he conducted himself well for a few years, he should then take the matter into consideration; *but not until then*. The colonel's character was very well known; and as he said this, the man knew very well that he would not gainsay it; he therefore returned to his duty, and became what is called "a fair soldier,"—that is, he conducted himself so that there was no fault to be found with him. For upwards of two years he continued at his duty, but it was well known during this time that he still wanted his discharge; and as he was married to a woman whose relations were believed to be pretty well off, he was known to express his opinion to the effect that the colonel would not give him a free discharge, expecting that he would purchase it, but this he was resolved not to do. When the indications of disease were therefore not very clear, this man was unfortunately so circumstanced as at least to be suspected with some shew of reasoning. In the autumn of 1841, he came to the hospital complaining of feeling sick and squeamish in the mornings when he went to his stable duty; he stated likewise that he sometimes vomited, and he added that he was always well enough during the day. A malingerer's story has rarely a marked deviation in it; and the latter part of the sentence shews that his had. I did not, therefore, hesitate to give full credence to what he stated, although I confess that I could not detect a single indication of disease about him. He was admitted into hospital, and while there all sickness and vomiting vanished, and this, too, under means which could not be regarded as treatment. He

was again discharged, and again admitted with the same story, "that he could not get on with his duty in the mornings; that the stables did not agree with him," and so on. Now this circumstance of the morning stable-duty disagreeing with a man, and bringing on chest affection, is notorious, and not unfrequently leads to a man being invalided. The reason is obvious. When the doors of a stable in which some thirty or forty horses have been confined all night, are first thrown open in the morning, the air which it contains has become so vitiated during that time—notwithstanding that every care is taken to keep up its free circulation during the night—by their respiration, dung, and urine, that few young soldiers can face it; none but the old dragoon can enter without feeling his lungs disagreeably tickled, and his stomach somewhat turned. There was some reason, therefore, to suspect, that as he had had ten years of it, all was not right about this story of his, particularly as there existed no appearance of disease about him; and from his well-known character, it might fairly be conjectured that he now intended to attempt getting his discharge by means which he probably knew had proved successful with others. Nothing was said or done which tended in the slightest degree to imply that the accuracy of his statement was doubted, and he was therefore again admitted into hospital. In a few days he was again quite well; and indeed, while in hospital and under our observation, he appeared always so. However, as he accused the morning stable duty of being the cause of his illness, he expressed his reluctance to return to it; and as he was useless as a dragoon unless fit for it, he was retained in hospital. Circumstances were in this state, when one morning, while going my rounds visiting the sick women and children of the regiment, I was accosted by his wife, who begged me to tell her what I thought of her husband's case. I merely replied in a common way, that his stomach was a little disordered, but that I did not doubt of his speedy recovery. "Well, sir," she replied, "do you know I have been afraid it was his head which is affected, for I have observed that for some time back, when I have been walking with him, and hanging on his arm, that he has

now and then given an unsteady movement with either leg; and this too," she added, "at times when I well knew he had been tasting nothing of a spirituous kind." I pocketed the hint, and we parted. I now directed my especial attention to ascertain whether his head was in anywise affected; but as he made no sort of complaint of it, and, moreover, as he continued to look well, and was even detected taking in porter surreptitiously, little more was done than keeping him in hospital and watching him. Shortly after this he was out one afternoon, walking with some of the other patients to and fro in the yard of the hospital, when I accidentally called. His back was to me as I entered, and from the nature of the place he could not have seen me coming. Just as I caught sight of him, I distinctly observed one of his legs to give a peculiar twitch as it was moved forward, and from that moment I felt satisfied that there was something wrong in his head. I now treated him for cerebral disease, and he soon began to shew more decidedly that he required it, for his lower limbs became paralytic, and he died in less than two months after with every sign of well-marked disease of the brain. We opened his head twenty-six hours after death, and found the brain and membranes rather pale than otherwise, and all the ventricles very much distended with clear serum. There was a cyst, capable of holding about two ounces of fluid, situated in the upper part of the left lobe of the cerebellum. The fluid it contained was of a serous nature, and of a pale yellow or straw colour. Its colour was essentially different from that which the ventricles contained. The cyst might have had its origin in a portion of arachnoid being prolonged into the substance of the cerebellum from between its layers. The resisting nature of the tentorium strengthens such an opinion; and the fact that it, the tentorium, formed the roof of the cyst, strongly predisposes to this idea. Besides, the indentation in the cerebellum looked as if lined by expanded arachnoid; and the probability therefore is, that it was such. It had clearly no connection with either ventricle, and the colour of the fluid it contained was strikingly different. Lying on the upper surface of this cyst, and connected with the cerebellum

by some pia mater, was a small tumor the size of a hazel nut, having a thin cyst, and possessing a brain-like character both in consistence and in appearance. Its section shewed it to be cellular, medullary, and apparently very vascular. The latter appearance may have depended, however, upon its cells containing blood, which, indeed, the larger ones evidently did.

A somewhat similar case, in so far as the result is concerned, to the one just related, is the following by Dr. Cheyne; but the doctor's case contrasts most strongly with the case of somnolency recorded by Dr. Hennen, at page 469 of the last edition of his *Military Surgery*. The two cases, when read, cannot fail to impress the young medical officer with the necessity which exists for his applying himself most assiduously to his duties. "A strong and active hussar, after many an ineffectual effort, during eight months, to rouse him from a state of listlessness and inattention to his person and duties, was discharged from his regiment, being generally considered as a *skulker*. Being forwarded to Chatham, he came under the care of Dr. Burnett, of the 72nd Regiment. From an absence of every symptom of disease, Dr. B. was at first led to adopt the same opinion; in the course of a week, however, some difficulty of articulation was discoverable, greater heaviness in his look, and sluggishness in motion appeared, which in a few days ended in coma, convulsions, and death. On dissection, two tumors of a firm medullary structure were detected in contact with each other—one of the size of a pullet's egg, the other of a pigeon's egg—situated in the right hemisphere of the brain, and projecting considerably beyond its surface.

In the case of T., just related, we find that vomiting was the first indication of the existence of a disease which ultimately caused death. I saw a young man in the hospital of the Rifle Brigade, during the time the 2nd battalion of that regiment lay at Windsor, in the spring of 1840, in whom the affection was both idiopathic and hereditary, and to all appearance free from danger, although it rendered the lad unfit for the army. The minuting of the case I forget, but this much I remember, that he was about 20 years of age, fresh coloured, and well grown. There

was good reason to suppose that he had no wish to leave the service, for he did not report himself at the hospital until actually rendered unfit for further duty, in consequence of the repeated vomitings. This was Dr. White's principal ground for giving credence to the history he gave of the affection. For my part, the lad looked so well in every other respect, that I could not help strongly suspecting its truth. He said that occasionally, at uncertain intervals, he was seized with a vomiting of every article of diet he took; that this would continue for days in succession, and sometimes even for weeks without intermission; and that during this time he felt so weak, as to be quite unable to work, or to do anything particular for himself. It was quite true that he had been known to be vomiting for many days before reporting himself; and when asked to give the reason why he had not rather come to the hospital at once, he said that he had been under the care of several doctors for the affection before enlisting, but always without benefit; and on that account he thought it was of no use asking for more medical aid. He added, that his father had had the same kind of disease, and that several of his brothers and sisters were similarly affected. As he belonged to Maidstone, in Kent, I began one morning by asking him what doctors he had been under before enlisting. He accidentally mentioned the name of Dr. Sibbald. I knew that Dr. Sibbald was an old army surgeon on half-pay, and practising there. I therefore strongly urged Dr. White to write to the doctor, giving him the lad's name and other particulars, and to beg of him to try and find out, if he did not himself know, whether what the young man stated was correct or not. The doctor instantly returned for answer, that what the lad stated was quite true; that he knew his family well, and that the old man, his father, had been repeatedly, while under his care, nearly at death's door from excessive vomiting. He likewise added, that he had often had several of the young man's sisters under his care for the same distressing affection. There was now abundance of proof of his unfitness for the service, and he was consequently discharged the regiment. This ought to be an instructive case to us all, and ought to frighten us from the very idea

of doubting the word of one whose veracity we have had no good reason to call in question. Yet, what is to be done? I would have treated this lad again and again in the absence of the above evidence. He had looked well, and had his bones pretty well covered with flesh; for as the vomiting only occurred occasionally, and always ceased as it began, without an apparent cause, he was never very much reduced by it: nevertheless, as it continued sometimes for days together, it rendered him an inefficient soldier, inasmuch as his services could not be depended on. At page 116 of the last edition of Mr. Marshall's work, some excellent observations on feigned vomiting may be seen. My own views on this subject are entirely in accordance with his; but, nevertheless, this young man's case proves that to all rules there are exceptions.

From the above facts, who can say with certainty that the following case was feigned? yet we have it boldly stated to have been such. "I have also been informed by Dr. Mortimer of a case of chronic vomiting, which occurred from half an hour to an hour after taking food, and which was persisted in for six months. Notwithstanding the most vigilant and prolonged watching, continued at all times, and when the impostor was not aware of the surveillance under which he was placed, he could not be detected, and was finally discharged. This man must have possessed the voluntary power of discharging the contents of his stomach." In medicine it is next to impossible to lay down rules which shall be unalterable, yet we find it again boldly asserted by the same author, that "the food being vomited in an *undigested* form, is always a cause of suspicion;" an assertion the truth of which must be altogether problematical, since the stomach which does not readily digest its contents, but after a time rejects them very little altered, is surely more likely to be diseased, either in structure or function, than the one which sets about performing its duty well, but fails before it has completed it from some inexplicable cause. In my opinion exactly the reverse of this axiom would appear to be nearer the truth; for if the food within a certain space of time after being taken is found on ejection to be well digested, surely we

have more reason to suspect foul play than where the contrary is the case. But even in a case such as I have surmised, we may learn how little we can depend upon diagnosis, since, in the young man whose case I have related, and who may be said to have been affected with hereditary vomiting, the food was always, to all appearance, completely changed, and yet it was ejected against his will.

[To be continued.]

CONTRIBUTIONS TO THE PHYSIOLOGY OF THE HUMAN OVARY.

Second Series.

BY CHARLES RITCHIE, M.D. Glasgow.

[Continued from p. 202.]

Formative function of the Ovary.

ONE of the points of view, in which it became usual, after the period of De Graaf's discovery,—or, more correctly, after Haller's exposition of that discovery, to regard the ovary, was as a mere capsular envelope of a definite and ultimate number of vesicles appended to the uterus, rather than as itself, at least in the unimpregnated female, the primary sexual organ, endued with the power of secreting ova throughout the whole term of existence, and of influencing powerfully the development of the other sexual parts.

The writer, in reference to this latter aspect of the inquiry, would advert only to the control exerted by the ovaries in bringing out the female type of the pelvis, &c. at puberty, as illustrated by Dr. Laycock, and to the additional evidence of this, which is afforded by the resuscitation of many of the peculiarities of male development, both in women and in animals, which occurs on the destruction of the ovaries; and would limit himself here to a remark or two on the former of the points mentioned, the secreting properties of these bodies as glands.

The number of vesicles in the ovaries was stated by De Graaf to be about twenty in each, and by Roederer to be as high as thirty, forty, or even more; but Haller, who had never observed more than fifteen in any instance, and who, denying the possibility of their reproduction when once evacuated, supposed this to be the full complement ever possessed by the human fe-

male throughout life, influenced by his authority the descriptions of succeeding anatomists to the present day, when it has been shown that the number of ovarian follicles, although varying according to circumstances, is, in general, greater than had been previously believed, and is besides capable of an indefinite extension. Raciborski*, by cutting the gland into three parallel portions in the direction of its length, has counted upwards of forty vesicles in one ovary. The writer,† who has ascertained that the power of their reproduction exists to a high degree in the human female from the earliest periods of childhood to the most extreme old age, and also, with respective modifications during gravidity, (see Cases I., II., and III., at end of paper) lactation, and other suppressed forms of menstruation, has observed that their number is influenced conversely by their degree of organization. When large, vascular, and possessed of tenacious coats, and their granular fluid of good consistence, and a high colour, they are in general comparatively few in number, and appear to attain their growth, and to penetrate the ovary in a relatively gradual way; but, in amenorrhœa, whether natural or abnormal, when, according to the intensity of the cause which arrests the menstruation, the vesicles are either smaller and thinner than those just described, or are reduced to miliary sized cells, with vascular coats, or, as in the most confirmed cases, to colourless vesicular points, their number becomes proportionably great, and is sometimes incalculable.

It would appear (Vide First Series, Part II., Sections 1, 2, 3, 4, 5, 6, *passim*.) that during pregnancy, the Graafian vesicles seldom become so attenuated as they are found to do in the amenorrhœa of disease, and that, on the contrary, they are often then very vascular, large, and well organized. It is an inquiry worth making, whether the presence of abnormal phlogosis of the uterus, as in some uterine affections, has any similar effect in suspending, despite the amenorrhœa, the usual atrophy of the ovaries and their folli-

* De la Puberté et de l'Age Critique chez la Femme, et de la Ponte Périodique chez la Femme et les Mammif. p. 97, 1844.

† London Med. Gazette, 1843-4.

cles, which is incident to serious disease. (See Cases IV. and V. at end of paper.)

Another point of interest connected with the organic power of the ovary, is the capacity which it possesses of accommodating its action to existing and varying circumstances. One important exemplification of this is presented by the differences in amount of organization of the Graafian vesicles in the various periods of female life, to which reference has been in this section made, and, also, by the very opposite methods in which these vesicles are ultimately disposed of according to the degree of their organization. Thus, in early infancy, and in old age, when the ovaries are supererogatory, their vesicles are of so cobweb a texture, that in the dead subject, a few minutes' exposure to the air suffices, sometimes, to rob them of their contents, and in the living, they are fitted to give way under the gentlest pressure of the fimbriæ, or, in default of this, to be discharged with innocuousness into the abdomen. During the period of child-bearing, again, when of course the ovary is the most essential organ of the female economy, and each of its follicles has become a complex aggregation of cells, the coats of such follicles acquire a firmness of contexture which effectually preserves their important contents from being wasted on every occasion of excitement to which the ovaries at this period of life may be exposed, and which, indeed, but for the additional absorbing powers acquired by the ovaries along with menstruation, would prove an affectual barrier to the due exercise of the reproductive function. Again, in pregnancy, the physical difficulties presented to renewed impregnation by the situation of the ovum within the uterus, are not of that nature which would prevent superfetation being a frequent occurrence, were it not that the structure of the ova in this condition becomes so imperfect, that their successful fecundation is commonly an impossibility; and in lactation, again, the recurrence of gravidity would be more common at an early period than is the fact, were it not for the sanative operation of the same cause.

It is a distinctive character of the openings made in the peritoneum over the ovarian vesicles of menstruating

women, that, while those in the amenorrhœic, or non-menstruating female, are punctate, these are uniformly linear or crucial, as are also their cicatrices. The opening in the walls of the vesicle is in all cases circular, and corresponds to the minute size of the ovum, but, in the menstruating woman, that made in the walls of the ovary is greatly larger than in other women, and always affects a linear form. This difference is perhaps dependent on the greater activity of the ovaries in menstruating than in other women, and probably is intended to furnish facilities for the speedier and more frequent discharge of mature vesicles than is either competent or desirable when the menses are absent.

Such a use of menstruation is rendered feasible, not only on the grounds stated, but also from a fact which may serve to illustrate further the accommodating faculty of the ovaries at present under notice. When a crop of mature well-developed follicles has been formed in a menstruating woman, and the catamenia are suddenly arrested, the further growth of similar sized vesicles is also stopped, and those actually existing, instead of being discharged as formerly by rupture, move off in a crowd between the layers of the broad ligaments, and sometimes steal along the outside of the tubes as far even as the fundus of the uterus. In these situations their vascular connexions become atrophied, and their nutrition being consequently destroyed, their fluid contents are generally disposed of either by absorption or transudation, while their solid particles remain embedded as harmless foreign bodies in their new location; and, in the meantime, the plastic power of the ovaries being reduced to the amenorrhœic type, structureless vesicles only continue to be discharged by these bodies, agreeable to the constitution of their new condition.

Again, should one of the fallopian tubes become impervious, a similar arrest of matured vesicles has been found associated with it, but only on the corresponding side; and the writer thinks that there are good grounds for believing that when both tubes are shut, the operation of the alleged intuitive-like control of the ovaries over their own functions, to which he has referred in this section, speedily suspends menstruation, and the secretion also of any

other than such minute, colourless, and pellicular vesicles, as may burst into the abdomen with impunity.

CASE I.—Mrs. —, aged 45, a widow, with a family, the youngest six years of age. Died two days after admission into fever house, and was said to have had a sanguineous discharge from uterus fourteen days before, but no evidence of the existence of pregnancy or of an abortion could be had. Uterus about a fourth larger than natural. Orifice lay open, and occupied by a clot which filled the cavity and cervix, and which had begun to be softened and decomposed at the fundus. Tube of right side very vascular, and its veins turgid; that of left impervious, and its exterior occupied by several small vesicles, which had apparently passed to it from the ovary. Each ovary measured about two inches in its length, by about one in depth, and a quarter of an inch in its thickness. They were pale, smooth, and punctate, with vesicles of most minute size; on the posterior surface of the right, there was a yellow spot of about two lines diameter, perforated in its centre by an opening, which admitted a bristle, and communicated with a beautiful cephaloid cyst of the size of a hazel-nut.

CASE II. —, aged 42. Large family, youngest fourteen months old, and at breast. Ovaries smooth, pale, and sprinkled with delicate, transparent, and colourless vesicles of small size, some still embedded in glands, and others protruding from surface by nearly their whole circumference. Each ovary contained only the remains of a soft corpus albidum, lying under the faint vestiges of a cicatrix.

CASE III. —, aged 23. Amenorrhœa of six months' standing from granular kidney. Uterus slightly below the average virgin size. Tubes pervious, both having an antrum at their ovarian extremities, which, on being inflated, appeared, from the thinness of the walls of the tube, translucent, the muscular fibres being separated into masses collected around the brim of the antrum. Ovaries plump, and their interior full of a succulent pulp, consisting of numberless transparent vesicular points, scarcely visible to the naked eye, and containing, also, beneath the peritoneal covering, many vascular Graafian follicles of the size of mustard-

seed, and some even larger, which projected from the surface of the ovaries, which they had begun to thin and to render vascular. Anterior aspects of both ovaries occupied externally, and the posterior aspects of both tubes, and the free ends of all the fimbriæ, by transparent colourless vesicles, of the size of a grain of sago, or larger, many of which had been solidified apparently from absorption of their more fluid parts.

CASE IV. —, aged 40. Death from fever. Presumed to have been amenorrhœic, but had a brown vaginal discharge. Uterus larger than natural, its orifice and inferior labium particularly, of an ink colour, and the seat of an indentation of more than an inch across, and about an inch upwards, which was produced by an ulceration of the substance of a ragged, pulpy character, still having the mucous covering of the labium extended across it, and fallen down into it, but cribrated by numerous foramina, and capable of being raised by the blowpipe. Parietes of the uterus thickened. Tubes impervious. The right ovary somewhat enlarged, but shut up in a reduplication of the broad ligament by firm adhesions; on opening which, the ligament was seen to contain numerous small bodies of the colour and consistence of candied sugar, which suggested the idea of their being solidified vesicles. Left ovary also above medium size, and its anterior aspect and the posterior surface of the tube had several small colourless vesicles in their walls; while the interior of the gland was filled with a moist, lamellated pulp, in the layers of which numerous small pale vesicles were suspended, some of which had burst on the surface of the ovary.

CASE V. —, death from cancer of the uterus, nearly a half of which was destroyed. Ovaries large and plump. Numerous pale, transparent vesicles, of the size of a small pin-head and less, and filled with limpid fluid, were seen on the exterior of the glands; and internally the parenchyma was sprinkled throughout with similar cells, mixed over its surface, and under the peritoneum, with a number of vascular follicles as large as coriander or hemp seed, and with as many as five dense corpora albida adhering to the ovary by their pellicular envelopes.

A DOUBTFUL CASE.

DEATH FROM POISONING OR DISEASE.

(From a Correspondent.)

[The following case has been communicated to us from a quarter upon which we can rely. For obvious reasons we omit all reference to names.—ED. GAZ.]

I was sent for to see a patient, A. B., who had been amaurotic, and in some degree paralytic, for about seven years. He was suffering from general derangement of the system, without any marked symptoms, and expressed himself as suffering *no pain* either in head, stomach, or bowels. I prescribed for him an aperient and some diffusive stimuli. He continued in much the same state for about two days; and on the fourth day was attacked with vomiting of a brownish matter, but unattended with pain. The abdomen was much distended with flatus, and quite tympanitic. On the evening of this day, while sitting on the close-stool, he was seized with faintness to such an extent, as to induce those about him to suppose he was sinking; but after a short time he rallied. The next day he appeared worse; but still there was no marked symptom of disease, and in the evening he complained of a frequent desire to make water, but he was not able to pass much. He was now seen by a medical friend, who found him in such a hopeless state, that he thought any interference useless. The next morning between nine and ten o'clock, he expressed a frequent desire to micturate; he got out of bed, but soon fainted, after which a good deal of urine passed away involuntarily; and in a short time he died.

On a *post-mortem examination* all the organs of the body, except the stomach, liver, kidneys, and bladder, presented a healthy appearance. There was marked inflammation of the stomach, which was quite contracted, but free from any signs of ulceration or corrosion. It contained about two drachms of a turbid liquid, possessing no peculiar odour. The vessels of the stomach were much injected, and the lining membrane presented patches of inflammation. The same appearance of redness was met with for about four inches in the upper part of the duodenum; but this almost entirely disappeared after the third day.

The intestines contained no solid nor liquid matter, but were distended with flatus. The liver and kidneys were congested, and the bladder contained about two pints of urine. There was no sign of inflammation in the organ, nor was there any appearance of peritonitis.

I am not at all aware of any of the symptoms having been increased after any meal or administration of food, nor can I in any way account for the gastritis, of which during life the deceased had no symptom except slight vomiting. I am fully aware that the accompanying history is a very imperfect one.

A coroner's inquest was held in this case, and a verdict was returned of "Died from inflammation of the stomach;" but the cause of the inflammation could not be assigned.

After the inquest it was considered advisable to examine the stomach and the liquid taken from it. The liquid was of a brownish colour, slightly acid, and partially decomposed. It contained a turbid brownish sediment; and the whole amounted to two drachms. The liquid and the sediment were separately examined for arsenic, and the more common irritant poisons, but not a trace of any of these bodies could be detected. The mucus of the stomach was then examined, but with a like result. The whole of the organ was then cut into small pieces, and boiled in a mixture of one part of pure muriatic acid and ten parts of water, for two hours. The stomach was in this way reduced to fine shreds; the liquid thus obtained was of a dark colour, highly acid, clear, and free from viscosity. It amounted in quantity to about four ounces. A piece of bright copper was introduced into the liquid, when it had been brought to the boiling point, and allowed to remain for half an hour. For some minutes the copper underwent no change, but in less than a quarter of an hour the whole surface of the metal acquired a dark-grey tarnish, very closely resembling that produced by arsenic under the same circumstances. The copper was dried, and the grey powder scraped from the surface and heated in a reduction tube, but no white crystalline sublimate could be obtained. It should be observed, that the greater part of the powder scraped off was copper, the

coating amounting to only a very thin film. The result was therefore by no means conclusive; and as neither the liver, spleen, nor any part of the body of the deceased could be procured, in order to confirm or remove the suspicion excited by this deposit on the metal, the investigation was abandoned.

The symptoms, so far as they could be observed in the case, were not those of poisoning by arsenic; and yet it is difficult to account for the well-marked inflammation of the stomach and duodenum, and the chemical effect on the copper,—for the whole of the materials were pure, a parallel experiment having been performed with these materials on double the weight of healthy animal matter. After boiling, and half an hour's immersion, the piece of copper employed came out in this case as bright as when it was placed in the liquid.

REMARKS ON THE

ALLEGED PRODUCTION OF PRUSSIC ACID IN ORGANIC LIQUIDS, AND ON ITS DETECTION WITHOUT DISTILLATION.

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THE detection of prussic acid in the stomach of a person who has died from that poison, and in liquids containing organic matter, without resorting to distillation at a high temperature, has been for some time a desideratum in medico-legal chemistry. All medico-legal writers recommend the process originally proposed by MM. Lassaigne and Leuret, *i. e.* the distillation of the organic liquid in a vapour-bath until one-sixth or one-eighth part is collected. This is then to be tested in the usual way. An objection has been urged against this process, that hydrocyanic acid may be formed during distillation by the decomposition of animal matter. This objection, as Dr. Christison remarks, appears to rest upon conjecture, or presumption at furthest (756). One fact must strike us in relation to it, namely, that if it were valid, those who are engaged in medico-legal researches would be continually meeting with prussic acid as a product, whereas no case of the kind, so far as I am aware, is on record. The addition to an organic liquid of

any substances liable to form prussic acid on distillation may, of course, lead to its production; but this result cannot constitute any valid objection to the process of distillation. Orfila states that he has obtained, from partially decomposed matters, a liquid of a fœtid odour, sometimes precipitable by nitrate of silver, the precipitate being soluble in nitric acid. Further, the liquid gave a greenish precipitate with the sulphate of iron and potash, which disappeared entirely on adding muriatic acid, without leaving any trace of Prussian blue. (*Toxicologie*, ii. 313). There is not here a single character indicative of prussic acid; the result, therefore, proves nothing.

The production of prussic acid by the distillation of organic matter under a temperature of 212° , appears to be one of those unfounded theoretical objections which a medical jurist is destined to encounter. During the last fourteen years I have distilled the contents of stomachs in all states of decomposition—organic liquids, such as porter, milk, gruel, either mouldy or putrid—without, in any one instance, finding the least trace of prussic acid in the distilled liquids, either by the odour, or by the usual tests. In the course of these experiments, I have found that prussic acid tended to prevent the formation of mould in organic liquids, even where the poison was comparatively in small quantity. I do not find, in Orfila, Christison, or other writers, a single fact to warrant the assumption, that prussic acid is ever thus produced in the distillation of mixed organic substances; and it appears to me, that until some good proof in support of the theory be forthcoming, a medical witness would be justified in rejecting it as an unfounded assumption.

When the stomach contains matters from which prussic acid is known to be chemically produced by simple admixture with water, with or without the application of heat, the case is different. It then becomes a question whether the quantity of prussic acid which these substances are capable of yielding, bears any proportion to the actual quantity detected. One bitter almond will give a perceptible quantity of Prussian blue when the pulp is triturated with cold water, and treated with sulphate of iron and potash in the usual way; but the blue colour may

only become visible in the midst of the white pulp after some time. Distillation is not necessary for the production of the poison in this case, for the result is easily obtained at a temperature of 60° . Much stress was laid, on a late occasion, on the production of prussic acid from the seeds of apples. I have found that the seeds of ten apples, distilled with a small quantity of water at a heat far below ebullition, with their skins unbroken, yielded not a trace of prussic acid. When the seeds were reduced to a fine pulp, and distilled with a small quantity of water, nitrate of silver scarcely rendered the distilled liquid cloudy, and the quantity of Prussian blue obtained from the whole was so small that it was difficult to assign an estimate of its weight. Mr. Cooper properly described it, in his evidence, as infinitesimal: taking it at the maximum, I do not think it could have exceeded the 150th part of a grain. The experiment was repeated upon the seeds of ten other apples, with a like result; and, from these experiments, I should very much doubt whether the seeds of twenty apples would yield as much prussic acid as one bitter almond. I have also examined by distillation the bruised seeds of oranges and figs, but have found no prussic acid produced. Again, I could not obtain the slightest trace of that poison in the distilled liquid obtained from three hundred grains of the sweet almond; while the bitter almond, under the same circumstances, yielded the poison readily.

In estimating the quantity of prussic acid which is produced under these circumstances, it is, perhaps, better to decide by the use of the Prussian blue test than by the use of the nitrate of silver, since, as Orfila has shewn, nitrate of silver is liable to be precipitated by the distilled liquid obtained from many organic mixtures, although no prussic acid be present.

I shall conclude these remarks on the production of prussic acid in organic matter by reference to its alleged formation in the decay of unsound cheese. Dr. Christison states this on the authority of Dr. Witling (756). In one experiment lately I examined 230 grains of decayed cheese by digesting it in a small quantity of distilled water, and gently distilling the mixture. The liquid thus obtained had the odour of decayed cheese, but not the slightest

trace of prussic acid could be detected in it by any of the usual tests*. It is desirable that further experiments should be instituted on this subject. Large quantities of decayed cheese are sold to the poor in London, but we never hear of any effects like those caused by prussic acid resulting from its use. I have found such cheese to be of a brown colour, of a highly offensive odour, and possessing an acrid bitter taste. The decayed portions of the better kinds of cheese, in all the stages of animal decomposition, and covered by vegetable growths, are, it is well known, eaten by the epicure also without accident. It appears to me, from these facts, that Dr. Witling's statement requires confirmation. Unsound cheese may act as an irritant, but its poisonous effects cannot be ascribed to prussic acid. The ergot of rye is said to contain prussic acid by one chemist, but the statement has been denied by another; the question, therefore, remains unsettled.

It has appeared to me necessary thus briefly to allude to the circumstances under which prussic acid is alleged to have been produced by the decomposition of organic matter, whether with or without the application of a high temperature. The general opinion is, that there is greater reason for the objection where distillation is used, than where it is not; hence it is advisable, if possible, for the medical jurist to determine whether the poison be present, either by the odour or by the direct application of tests to the mixed liquid, before he proceeds to distil it. The discovery of prussic acid in an organic liquid before distillation, is supposed to afford good evidence against its production subsequently, but, from the facts above mentioned, they may just as readily be *assumed* to take place in a liquid at 60° , as in one at or under 212° .

The fallacies of testing for prussic acid by the odour alone, are now well understood. There are many circumstances which may conceal or mask the odour, and probably no case of any importance has yet presented itself in which a difference of opinion on its presence has not existed. From many experiments on this point, I have found that some persons are peculiarly suscep-

* The distilled liquid had the pungent odour of cheese. It contained only the sesquicarbonate of ammonia.

tible of this odour, while others cannot perceive it. Unless, therefore, we are inclined to adopt the view that, under all circumstances, every person must necessarily possess an equal power of smelling prussic acid, we cannot but agree with the statement of the learned judge, who presided at the trial of Tawell:—namely, that “smell was a proof of the presence of the poison, but the absence of the smell was no proof of its absence.” This appears to me to be a sound and correct view of the question: by the presence of an odour we must understand the odour of prussic acid:—not of bitter almonds, which has been perceived in cases where no prussic acid was present. The difference is sufficiently apparent to those who have attended to this subject.

In a work lately published,* I suggested as a trial test for prussic acid in an organic liquid, that a portion should be placed in a wide watch-glass, and another, containing nitrate of silver, inverted over it. If prussic acid be present, cyanide of silver is speedily produced on those portions of the glass wetted by the nitrate. The same effect was found to take place when the organic liquid containing the poison was placed in a wide-mouthed bottle,—the watch-glass with the nitrate of silver being placed over the mouth at the height of five or six inches above the liquid. It required about ten minutes, or a quarter of an hour, for the production of cyanide of silver, at the temperature of 60°. The deposit thus formed is insoluble in nitric acid, and possesses the other properties of the cyanide. The stomach of a dog, which had been killed by three drachms of prussic acid, after having been freed of its contents, and thoroughly washed in water, was placed in another bottle, twenty-four hours after its removal from the body; and the stains of cyanide of silver were produced in about ten minutes on the watch-glass. Notwithstanding that this stomach had been thoroughly washed, there was still an odour of prussic acid about it,—as usual perceptible to some, but not to all who examined it. The stomach, when cut up and distilled, yielded a liquid in which prussic acid was clearly detected: but the odour and the silver test showed that the poison was in the stomach, and most strongly imbibed

into its substance, before it was placed in the retort.

An objection at once presented itself in the supposition that muriatic acid would act in a similar way. The following experiment was therefore performed. One fluid-drachm of pure fuming hydrochloric acid was mixed with eight ounces of porter, and placed in a bottle. The watch-glass containing the nitrate of silver was then placed on the mouth of the bottle at the height of three inches above the level of the liquid. There was scarcely any perceptible film on the nitrate after half an hour; while *two-thirds of a grain* of anhydrous prussic acid, mixed with *eight ounces* of porter, gave a well defined deposit of cyanide of silver in a quarter of an hour. The proportion of muriatic acid used (1-64th) was infinitely larger than that which exists naturally in the secretions of the stomach,—so that, except in a case of poisoning by muriatic acid, an objection, founded on the deposit being chloride of silver, would be invalid. The prussic acid formed less than the 2500th part of the liquid, and yet it was readily detected. The difference is evidently owing to the far greater volatility of this poison. There is some little trouble in procuring by this process a sufficient quantity of cyanide, in order to determine its real nature by the combustion of cyanogen; and thus I was induced to try the Prussian blue test (the mixed oxides of iron) by placing a diluted solution of potash in the watch-glass, and allowing it to remain for a quarter of an hour. A solution of green sulphate of iron was then added,—the mixture well agitated, and the oxide of iron was redissolved by diluted muriatic acid. Prussian blue in small quantity was left. This experiment succeeded on repeated trials with a mixture containing one grain of prussic acid, with four ounces of porter, made five months previously. The result was also equally satisfactory when tried with a mixture containing two-thirds of a grain of anhydrous prussic acid in eight ounces of porter,—the Prussian blue being more apparent when a white saucer was substituted for the watch-glass.

It may be said, the quantity of prussic acid thus detected is very small. That objection I hold to be quite unimportant. The analyst may go on making as many experiments as he

* Manual of Medical Jurisprudence, p. 258.

pleases, and thus accumulate the Prussian blue; but that is surely as little necessary in a case of poisoning by prussic acid, as in the case of poisoning by arsenic or corrosive sublimate, where the 40th, 50th, or 100th part of a grain will give to a careful experimenter all the evidence he requires. The great point to observe, is, that no other substance but prussic acid can produce Prussian blue under the circumstances. It is unmixed with organic matter, and its colour is as clear and bright as if the test had been applied to the diluted aqueous solution of the pure acid, instead of the vapour of a complex organic mixture, possessing, to many persons at least, not the slightest odour of the poison.

When we require to know the quantity of prussic acid present, either the whole or a known fractional part of the liquid, must necessarily be distilled. The objections to this process, however, will be materially reduced, if not altogether removed, by the application of this test before distillation. The experiment will also furnish the best answer to any argument founded upon a difference of opinion among the witnesses as to the presence of an odour.

Orfila has recommended that a slip of paper should be dipped, 1st, in potash; 2nd, in the organic mixture suspected to contain the poison; 3dly, in a solution of green sulphate of iron; and 4thly, in diluted sulphuric or muriatic acid. I have found this method far inferior to the one here recommended; indeed it is much less satisfactory than the application of the Prussian blue test to the filtered organic liquid at once: in which case the precipitate requires to be washed until it is sufficiently pure to have its properties identified. But it cannot then be procured so pure as by the above process.

It may be a question whether both the silver and iron tests are necessary for the corroboration of the results obtained by either separately; or whether, in every case, there would not be sufficient proof of the presence of prussic acid by the application of one only. The use of *one* of the tests appears to me to be all that is necessary for chemical proof of the presence of the poison, provided that in the case of the precipitate, formed on the addition of

nitrate of silver, we obtain the only clear evidence of its nature by the combustion of cyanogen; and, in the case of the iron test, provided we can determine the precipitate to be Prussian blue. The colour is sufficient to identify this substance, for no other blue compound could be produced. It need hardly be said that the potash and sulphate of iron used for testing should be entirely free from prussic acid—a fact easily demonstrated, by a separate examination.

I do not claim for this process any more than a mere application of chemical principles already well known. It may, however, be found convenient to the general practitioner; and it will obviate all objections respecting the production of prussic acid by heat, as well as the non-detection of odour by those who examine the liquid. It may also be made at once, during the post-mortem examination; for all the apparatus required, will be a watch-glass, or a white-saucer, caustic potash, sulphate of iron, and diluted muriatic or sulphuric acid. The contents of the stomach without filtration may be emptied into a bottle, and the experiment performed on the spot: the stomach itself may be placed in another vessel; and as I have verified by experiment, there is even a chance of thus detecting the poison in the substance of the organ, when it has been freed of its contents and thoroughly washed in water. It is not improbable that in this way, also, the poison may henceforth be detected in the blood, secretions, and soft organs, provided the analysis be not delayed too long. If putrefaction should have commenced, and the suspected liquid possess an alkaline reaction, it would be advisable to acidulate the liquid with sulphuric acid. This process shows the great volatility of the poison, and the rapid diffusibility of its vapour. As an additional proof, I may mention that the liquid obtained by distillation from the stomach of the dog, which yielded one day clear evidence of the acid by tests, although not by odour, was examined the day following, and all the prussic acid had disappeared, the vessel having been left slightly exposed. Hence, then, no time should be lost in performing the analysis.

ON THE
EXTERNAL USE OF TOBACCO IN
PRURIGO.

By J. G. FRENCH, Esq.

Surgeon to St. James's Infirmary.

THE infusion of tobacco (which has, I believe, been hitherto used only as an enema, and which, in that mode, produces such powerful physiological effects) is a most useful, and, as far as my experience goes, a most innocent external application.

The complaints for which I have prescribed it with undoubted success are prurigo, and the purulent ophthalmia of infants. I have also found greater benefit from it as a collyrium in scrofulous conjunctivitis, than from any other remedy. In prurigo pudendi I first discovered its extreme usefulness in a case which had for some time been relieved by a strong lotion of hydrocyanic acid, viz. a drachm of Scheele's solution to six ounces of water; this at length losing its effect, the infusion of tobacco was prescribed, from which the patient found more complete relief than had ever been experienced from the hydrocyanic acid. Since then, two two years ago, I have always used this infusion in such cases, and consider it to be a highly satisfactory remedy.

Although we have already several useful remedies for the purulent ophthalmia of infants, yet in some cases these appear to produce irritation, and the complaint under their use sometimes becomes stationary. In such cases I have found the most marked benefit from the infusion of tobacco.

The formula of this remedy for these purposes, is double the strength of that generally used as an enema, viz. one drachm of the tobacco to half a pint of boiling water; and it may be remarked, that the tobacco sold under the name of "shag," was found to be more efficacious than that called "pigtail."

RETENTION OF URINE.

LUTHER is said to have died of a retention of urine in a coach, through a modest regard of the company, as did Dr. Tryon of the same forbearance in a passage-boat, the bladder being so filled as to be unable to relieve itself when he came on shore. The celebrated Marquis of Tullibardine, it is said, took also the same method in the Tower to escape a public death.

MEDICAL GAZETTE.

FRIDAY, JUNE 20, 1845.

WE think there can be only one feeling of indignation in the profession with respect to the statement put forward by the Royal College of Surgeons, and printed in our last number.* The amended Bill is likely to affect the College in a more serious way than the Council had at first anticipated; and they intimate that its provisions differ from those which they had been led to expect. We are not now going to speculate upon the nature of the compact which thus appears to have been entered into between the Home Minister and the Council; but our duty as public journalists requires, that we should not pass over this document with the few cursory remarks which were made upon it in our last. The Council complain, that in the event of the measure becoming law, "for the first time will every general practitioner be presented to the public under the title of 'Fellow,'—a title which was intended to designate the *highest professional qualifications of physician or surgeon*; but which here appears to imply that the general practitioner combines the highest qualifications of both physician and surgeon, conjoins their functions, and superadds those of the professor of midwifery, but discards the characteristic designation of apothecary!" This is certainly sufficiently insulting to those members of the College, who, with an equal right to have their claims considered, were arbitrarily set aside in the list of Fellows, for others of much more recent standing, whose claims to the fellowship could not have consisted in their having "the highest professional qua-

ifications as surgeons." There are many on that list far inferior in professional standing to others whose names are not there to be found. They could have owed their election only to private influence; for certainly their position in the profession, did not justify the Council in conferring upon them the Fellowship. Members of a few years' creation, they have become by the fiat of the College "Fellows," or surgeons of "*the highest professional qualifications*"! and the Council think themselves justified in stating that by another charter giving the title of Fellow to members not of their own selection, it "describes them under a title which can scarcely fail to mislead the public in estimating *their true character*!" We really cannot see that the public are more likely to be misled in this respect by the creation of another class of Fellows, than they are now actually misled with respect to a great number of those who are the selected of the College itself.

According to the very partial division of members made by the College, we must look upon those who have not had the Fellowship conferred upon them, as the men intended for the "*ordinary exigencies*" of surgical practice—those who have received a *minimum* of professional education, and have acquired a *minimum* of surgical knowledge; and yet it would seem that it is from this inferior class that the College expects to derive the funds necessary for its support. The men adapted for the "*ordinary exigencies*" may pay the fees, and be admitted as members of an inferior grade; they will thus furnish the means for supporting their "*alma*," or, as it has been more appropriately termed, their "*dura mater*," and in continuing the existence of a class of Fellows, which without them, it appears, would be too few in number to keep up an annual renovation of the funds. Thus, then, the whole "State-

ment" resolves itself into an "*argumentum ad crumenam*."

We cannot at all agree with the Council that the amended bill is calculated to discourage the attainment of the Fellowship in the manner prescribed by the bye-laws of the College, which require a prolonged course of laborious studies. If the wants of the public with regard to practitioners can be met by a shorter course of studies, or, more correctly speaking, by this course of studies being commenced at an earlier period of life, we really do not see why the College are to interfere. If the general practitioner is already completely a surgeon in all his functions, qualifications, and privileges, this is all that the public will look to, and all that it need require. It is probable, also, that such practitioners under the new system may be provided with more than a *bare sufficiency of surgical knowledge*, which, according to the confession of the Council, has been hitherto the main object in conducting the examination of members. This concession thus voluntarily made, in our view disentitles the College from claiming for the future the sole privilege of examining and licensing what they are pleased to consider a lower grade of practitioners—men who "supply medical aid and advice at a *moderate cost*!"

We cannot agree in the assertion that these hostile attacks are devoid of any "reasonable ground, and unsupported by any rational argument." The reasonable ground is, that the Council of the College have deserted its members, and have—we do not say in all, but in many cases—made a most unfair and partial selection for conferring the Fellowship under the Charter. Why should a single member of less than ten years' standing have been created a Fellow unless it were clear that there was no member of older standing who had stronger claims?

Have the College acted upon this principle? Assuredly not. Some of the members of the Council must be well aware that names have been most improperly excluded from the list of Fellows, and there is now no other remedy for this injustice but a supplementary charter. In the meantime, it appears to us the Council of the College have no right to cast a stigma upon a majority of the members, by electing, in many cases, their juniors, nor are they justified in claiming from the Government a monopoly for the creation of an "inferior" grade merely for the sake of supplying themselves with funds.*

THE Physic and Surgery Bill is postponed until this evening, Thursday, June 19, and, from what we hear, we think it is very doubtful whether it will be proceeded with. It would, we believe, puzzle any legislator to know what course to take in reforming the medical profession. The general practitioners require some penalty upon unlicensed practice, and the retention of a power of prosecuting offenders by the Apothecaries' Society. Our readers will remember the outcry that was raised by the abolition of all restrictions on unlicensed practice in the two earlier editions of the Physic and Surgery Bill. In the third edition, Clause 36 was added to remove the grievance—a penalty of twenty pounds being imposed upon those who practised without a license. This clause has excited the indignation of the dispensing chemists and druggists, who insist upon acting or practising as apothecaries in England and Wales without a license or any compulsory examination, and, at the same time, retaining all their rights and privileges as secured to them by the Act of 1815. They have had a meeting, passed resolutions, petitioned

the House of Commons, and produced such an effect upon the Home Secretary, that it is now currently reported that the clause will be expunged. It remains to be seen whether the general practitioners will quietly submit to this change. The College of Surgeons are opposed to the measure because it will deprive them of the principal part of their funds. The disputes between the English and Scotch Universities and Colleges on the Bill have been already made the subject of comment; and it is not hard to predict what is likely to be the fate of a measure involving opposition from such conflicting interests. If it pass at all, it will be a mere skeleton of medical reform; but the probability is, as we hinted in our last, that Sir James Graham will give up the measure, and leave the "doctors" to reform themselves.

In a legal cotemporary* we find some remarks upon the necessity of applying stringent measures to keep up the character of the Bar. It is suggested that it is not enough to punish a barrister for unprofessional practices, but the occurrence of these practices should be prevented by a little more strictness in the admission of members, whether as students or to the Bar. Previous to a call, the strictest inquiry as to *character* should be made; and "we question," so says the writer, "whether there should not be something like an assurance, that the candidate has reasonable means of subsistence until, in the ordinary course of things, he can expect business. The fact cannot be disguised, that poverty is the real cause of almost all the unprofessional practices complained of. 'I must live' is the self-defence of the wrong-doer, forgetful that there was no necessity for entering a profession by which no man can reasonably hope

* We have elsewhere printed the remarks of the *Times* on this subject.

* Law Times, June 14th.

to live for some six or seven years, unless he possessed the means of *respectable subsistence* in the interval."

Mutato nomine, the above remarks may be made in some respects applicable to the medical profession; but we cannot agree in the pecuniary view of the subject taken by our cotemporary. Necessity is the great stimulus for exertion in any profession; and we need not search deeply into the annals of law and medicine, to find that some of the most illustrious members of the two professions, have been men of "early struggles," makers of their own fortunes. We believe that it was remarked by an eminent law-authority, that there is but little chance of success for a wealthy man at the Bar, unless he runs through his fortune and begins anew. It would certainly tend to create a grand monopoly in the two professions, if every one disposed to enter either, were bound to shew that "he possessed the means of respectable subsistence for six or seven years!" There are numbers who would like to have it in their power to furnish this proof; but this good fortune is denied to them, and they have in many cases to depend on their own unassisted exertions in order to live. Poverty may be a great temptation to indulgence in unprofessional practices; but is the possession of a "respectable subsistence," either in law or medicine, any barrier against these practices? We think not; nor does it at all follow that those talents which are necessary for the success of the individual, or for doing honour to the profession, have any relation to his wealth or his means of subsistence. Provided a man have received a liberal education, and bear a fair character, the risk of success or failure should be left with himself; and if he be guilty of gross professional misconduct, it will then be time enough to think of applying a remedy.

Reviews.

On Diseases of the Jaws; with a Brief Outline of their Surgical Anatomy, and a Description of the Operations for their Extirpation: with Cases.
By RICHARD O'SHAUGHNESSY,
F.R.C.S.E. Calcutta, 1844. pp. 100.

MR. O'Shaughnessy's memoir, although not professing to convey any very novel views, contains several useful practical suggestions upon minor points; and is illustrated by some very important cases. It is written in the style in which really good surgeons almost invariably write, in a plain, concise, unaffected, and straight forward manner.

The following remarks are valuable.

"It sometimes happens that an abscess forms on the side of the inferior maxilla, either internally, between the cheek and gums, or externally, near the symphysis of the chin, or on the side of the bone close to its angle. This is at first frequently taken to be a common collection of matter, which, when opened, and emptied, is expected to heal in the usual way, but a sinus forms, and continues to discharge through a fistulous opening. If the patient happens to apply to a medical man who is ignorant of the cause of this disease, the chances are he is subjected to a variety of treatment, for scrofula, caries of the jaw, &c. when, by merely extracting a tooth, it might be cured in a few days. The crowded state of the teeth causes inflammation in the periosteum and sockets of these bodies, and until room is made by extracting one of them, the discharge continues. These abscesses generally form in persons about the age of from nineteen to twenty-four, when the wisdom teeth are coming forward. It is not in general of much consequence which of the teeth in the neighbourhood of the fistula is extracted, but, whether the teeth are sound or unsound, one must be taken out before the discharge of matter ceases, which it usually is found to do in a day or two after the tooth is drawn, although it may have existed for years previously." (P. 24.)

In cases of this description the abscess should always, if possible, be opened from within, as an external incision usually gives rise to a tedious

sinus which, upon healing, leaves an unsightly cicatrix, depressed and adherent to the bone.

In describing the operation of excising the upper jaw, the author says, "No matter how large the tumor, and how great the consequent distension of the cheek may have been, I recommend most strongly that no portion of the skin of the face, if healthy, be cut away. It almost invariably contracts to very nearly, if not completely, its natural dimensions, and if any of it has been removed with the tumor, no matter how small that portion may be, the want of skin enough is much more likely to be complained of, when the cure is completed, than of there being too much, if the whole has been left." (P. 50.)

In speaking of dividing the bone near the angle in amputating a portion of the lower jaw, he says, "the surgeon should satisfy himself well, before he proceeds to divide the bone in this situation, that it is perfectly sound: as he will find, should he make a mistake, and divide diseased bone, the greatest difficulty in disarticulating the condyle when once he removes the lever by which the jaw may be depressed, and the coronoid process brought within the reach of the knife, as the temporal muscle draws it far up under the zygomatic arch, and offers powerful resistance to its descent, so that such an error may cause great delay and apparent bungling in the operation."

"It is not always necessary to cut through the lip to expose these tumors, (of the lower jaw), and when that can be avoided I think a great object is gained, as more or less deformity, or at least disagreeable expression, is almost invariably produced by wounding the red margin of the lip."

The following is good: next to the preservation of life and limb, the highest aim of the operating surgeon is to devise means of guarding his patients against the endurance of unnecessary pain. "Many surgeons recommend that the tooth or teeth which require removal, to admit of the application of the saw, should be extracted either the day preceding the operation, or immediately before its commencement, but I think the patient is less likely to feel the full extent of that painful proceeding, while smarting from other wounds,

and therefore I prefer deferring it till I am about to cut through the bone."

The author relates five cases in all of which he operated with success. In the first the superior maxilla was removed for a fibro-cartilaginous tumor, weighing four pounds, which had begun to form only a year previously. The patient, a young Hindoo man, appears to have done well after the operation, but the report is not continued after the eleventh day. The second details a similar operation performed upon a native boy, 11 years of age. The external wound had nearly healed on the tenth day after the operation, and the cavity within was rapidly filling up with healthy granulations. In performing this operation Mr. O'Shaughnessy finds that one external incision is sufficient: the direction of this must of course be varied according to the form of the tumor: in one it was made as follows: "from the zygomatic arch, over the malar bone, then down the cheek and through the commissure of the lips into the mouth. In the third case, where the tumor was not larger than a hand-ball, the author determined on removing merely the anterior wall of the antrum, and with it the fibro-cartilaginous growth. He describes the manner in which he accomplished this as follows:—

"I made an incision from the angle of the mouth, upwards and backwards, over the tumor, about two inches in length; this enabled me to lay bare the bone, and then I had little difficulty in cutting through it, round the base of the tumor, with strong scissors. I next sliced it off with a scalpel, and when the whole was removed, I scraped the internal lining of the antrum, to which the substance strongly adhered. The wound was dressed in the ordinary way, and in less than a month the woman left the Dispensary quite well."

In the fourth case the entire right half of the lower jaw was removed, being generally affected with spina ventosa. The chief difficulty in the operation arose from the obstacle which the tumor presented to the separation of the insertion of the temporal muscle from the coronoid process. The patient had not a single disagreeable symptom after the operation.

The fifth case was one of enormous osteo-sarcomatous enlargement of the

lower jaw in a native man about forty years of age. In operating the author cut through the bone on the left side about an inch anterior to its angle, and disarticulated the right condyle from its socket. Upon dividing the muscles of the tongue, the accident which is usual in such cases occurred, the tongue was suddenly retroverted into the fauces, causing much distress and struggling. This lasted, however, but a few seconds, and it was not found necessary to transfix the tongue with a hook as practised by most surgeons.

The report is dated ten weeks after the performance of the operation. The wound was then closed, with the exception of a very small fistula upon the side of the throat communicating with the mouth. The condition of the face was not described, but it is stated that the man was comparatively in perfect comfort, and could eat and drink: we suppose by means of a tube and funnel which he made use of soon after the operation. Tumors of the above descriptions appear to be of more common occurrence among the natives of India and China than with us, and the rapidity with which large solid growths are sometimes produced in those people is very extraordinary.

On the Power of the Soul over the Body, considered in relation to Health and Morals. By GEORGE MOORE, M.D. London, 1845. Svo. pp. 305. Longman and Co.

THIS is a most interesting work, although it is likely to please only a certain class of readers, *i.e.* those who have the inclination or leisure to turn their minds to metaphysical subjects, and to contemplate the singular relations which exist between the immaterial and material parts of our frame. It has often been objected to medical studies that they tend to materialism or atheism, but that this is a popular error is proved by numerous examples—we may point among others to the late Dr. Abercrombie of Edinburgh, Dr. Heberden, and the author of the work before us. The writings of the former on various psychological subjects must be well known to most of our readers. They have stamped him with the highest character both as a man and as a philanthropist. His reputation as a physician needs no encomium from us.

Any formal review of Dr. Moore's work would be beyond the scope of a medical periodical. The author has treated in a very clear and intelligible manner numerous metaphysical subjects: such as the connexion of the mind with the body—of the senses with the mind—of the faculties of attention, volition, and abstraction—of the influence of the mind on disease, and of the psychological conditions under which insanity is likely to show itself. While he is inclined to a belief in mesmerism, he is a decided opponent of phrenology. We quote the following passage as a specimen of his anti-phrenological views:—

“According to the newest fashion of phrenology, it is asserted that intellect and emotion, which imply will, operate through the brain as developed in the front of the head; and that will, associated with intellect, emotion, and instinctive propensity, acts upon the little brain behind, and part of the spinal cord, so as to excite muscular motion and expression. These conclusions may perhaps have been demonstrated, yet all we can infer from such presumed facts is, that the instruments or organs merely constitute the media of communication between the world without and the world within—the material creation and the spiritual. Facts are really best explained by supposing a unity of all the senses with the brain, and that the spirit, or perceptive and willing power, has faculties superadded, which are in correspondence with different portions of the brain, and therefore capable of being acted upon by it and acting with it. But how do some phrenologists account for the operation of compound motives, such as we often feel? They say it is done by a sort of sub-committee of the organs—by a board of control! As Abernethy used to say, ‘Pho, pho, if they go to a board of control, I am content.’ They thereby at once declare the necessity of a presiding and individual intelligence, endowed with various faculties as the properties of one being, subject to pain or pleasure, repugnance or desire, according as the objects presented to the mind through the senses are adapted, or otherwise, to these faculties or endowments, which are all associated with the will, in as far as they are all connected with a sense of the agreeable

or disagreeable, and their very exercise consists in seeking the one and avoiding the other." p. 68.

We shall only add, that the work contains numerous interesting illustrations of the influence of the mind over the body, some of which we shall probably occasionally transfer to our pages.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Tuesday, June 10th, 1845.

MR. CÆSAR HAWKINS IN THE CHAIR.

Large opening into the anterior part of the Urethra, caused by Sloughing, and attended by considerable loss of substance, successfully treated by Operation; with Remarks and illustrative Drawings. By F. LE GROS CLARK, Assistant-Surgeon to St. Thomas's Hospital.

THE author commences his paper by pointing out the difficulty of curing urinary fistulæ generally, but much more especially so those which are situated in that part of the urethra anterior to the scrotum. In illustration of these remarks he quotes the opinions and experience of Prof. Dieffenbach, who had been repeatedly foiled in his attempts to cure even small fistulæ in this position, before he ultimately succeeded. The author then refers to the various modes of treatment which had been adopted in these cases, and gives the palm to that which consisted in renewing the lost structure by a plastic operation. This part of the subject was further illustrated by reference to Professor Dieffenbach's practice, as the author acted, in his own case, on the principle laid down by the Berlin professor, though he deviated in the mode of carrying it into effect; this principle consists in extending, as much as possible, the surface by which adhesion might take place.

The subject of the operation, in the present instance, was a wine-porter, who had permanent stricture, for which he was operated on by Mr. Clark in July last; but being of intemperate habits, and not very good constitution, he had acute inflammation of the testicle, followed by sloughing of the scrotum and penis, which, after the healing process was completed, left an aperture in the urethra one inch and a quarter in length, and occupying a small portion of the scrotal division of the passage, and extending forwards for a considerable distance

anterior to it. The following were the steps of the operation for the closure of this opening. A small inverted portion of skin was first dissected out from the scrotal extremity of the fistula; four incisions were then made, two of which extended downwards and outwards over the scrotum, and the other two upwards and outwards on the sides of the penis; a lateral flap was thus marked out on each side, which was then dissected up; and the two being brought together, *surface to surface*, over the fistulous opening, were maintained in that position by lateral splints of leather, and sutures passed through the latter and the skin. A semilunar incision was then made on each side, to relieve the anticipated tension when swelling came on. A full-sized gum elastic catheter, which had been passed prior to the commencement of the operation, was left in the bladder.

Adhesion took place throughout the whole extent of the flaps, except at two points, one being at the scrotal extremity of the fistula, the other between the lateral supports: these were freely touched with caustic, and soon closed. A small portion of the margin of one flap sloughed. The operation was performed in November; and at the present date (June 10th), the patient continues to pass his water freely, and in a full stream. There is no contraction of the penis, or any part of the passage, and the cicatrix is scarcely visible. The perineal opening still allows of the occasional escape of a drop of urine.

MR. CLARK, in reference to the remarks contained in the paper, stated that it was now three months since the operation had been performed. The patient had recently come under his observation. He now passed his water freely and naturally, and the parts subjected to the operation had so far recovered their original appearance, that it would be difficult to discover that any operation had been resorted to.

MR. BLIZZARD CURLING had seen the patient the day before, and could confirm the statement respecting the appearances which the parts presented. The opening in the perineum still, however, was not quite closed, but the few drops of water which occasionally dribbled from it during micturition was attended with but little inconvenience.

MR. ACTON believed he was right in attributing to the author of the paper the opinion that the stricture and fistulous opening were the result of the injections, rather than of the chronic inflammations, for the cure of which the injections were employed. He trusted this opinion would not give currency to such a belief generally, as it tended to raise prejudices regarding injections which were unfounded. He thought the case under

consideration illustrated the correctness of his remarks in his Treatise on the Venereal Disease, that we were not to expect to remedy fistula in these situations by one single operation, but that we could only look for success after repeated applications of the knife and caustic, as he had frequently seen exemplified in M. Ricord's cases.

Mr. CLARK, in respect to injections, observed, that his remarks went to show that injurious results followed their use, when injudiciously and ignorantly employed, and not when they were used under the direction of medical men. When used, as in this case, by the patient himself, they were probably of too great a strength, and stricture did ensue. He inquired the experience of members generally on this point, and expressed his belief that injections were now generally abandoned in the treatment of gonorrhœa in our hospitals.

The PRESIDENT inquired whether, in M. Ricord's cases, the parts were brought together by their edges, or, as in the present instance, at their surfaces?

Mr. ACTON had seen the operation performed in a variety of ways; the most successful, however, being that detailed and figured by M. Ricord, in his *Clinique Iconographique*, in which an artificial opening was first made into the membranous portion of the urethra immediately behind the bulb, the urine being allowed to pass off through a gum elastic tube fixed in the opening; the edges of the fistula situated anteriorly to the artificial opening were then pared and brought together by means of pins, or a bougie introduced into the urethra. The fistulous opening closed after repeated applications of nitrate of silver, and in three or four months the artificial opening was allowed to heal, which it did most speedily.

Mr. DAVIS, of Hampstead, had in the army employed injections in thousands of cases, and had never known any bad result follow their employment, though he had opportunities of watching the patients for a very long period after. In the inflammatory stage, watery injections of digitalis, or a mixture of laudanum, or tincture of digitalis and water, were commonly employed; in the later stages, stimulating agents were resorted to.

Mr. CLARK said, he had confined his observations to the use of injections injudiciously, and Mr. Davis explained that his remarks had reference to the subject generally, and not to Mr. Clark's case.

Mr. STANLEY thought the paper of importance, as illustrating the practicability of carrying out the principles promulgated by Dieffenbach. Many cases, which he had seen years ago, had those principles been known, might have been remedied. He re-

lated the case of a girl, who had lost part of her under lip, from mercury, in whom he remedied the defect by obtaining a portion of skin from the neck.

Mr. BROOKE said, that in the two points in which the operation failed of success, it was likely that the use of the bead suture would have succeeded. This suture he had already placed before the Society. In Mr. Clark's case, the vitality of the patient was evidently at a low ebb, and a slight degree of pressure would be sufficient to interfere with the circulation, and produce mortification. This effect, it would appear, had been produced by the pressure of the bits of leather and platina wire, in the present case. A similar result took place from the use of a pin and figure-of-eight ligature to the opening in the pericardium. This was explained by the constriction to which the portion of integument between the pin and ligature were subjected during the process of repairation.

Account of a Case of Dissecting Aneurism of the Aorta. By THEOPHILUS THOMPSON, M.D.

A GENTLEMAN, 45 years of age, having suffered for some hours from a severe attack of abdominal pain, resembling ordinary colic, after slight exertion fell down in a state of syncope. The author, who was called in, found him apparently insensible, with a pallid countenance and cold extremities, but able to swallow. Brandy was freely administered, but an hour elapsed before the pulse became perceptible either in the wrist or the cardiac region. The pulse, when first observable, was only 15 in the minute, but in a few hours, under the use of stimulants, it gradually rose to 100. The urinary secretion was suppressed. With the restoration of the circulation, the intellectual faculties in some degree revived. Two days after the fit of syncope, the circulation became feeble, the extremities cold, and the patient's countenance assumed an appearance of wildness and weakness characteristic of exhaustion. With these indications of internal hæmorrhage, an extension of dulness on making percussion in the præcordial region excited the suspicion that blood was effused into the pericardium. Death occurred suddenly after some considerable muscular efforts.

On making an examination after death, the pericardium was found distended with blood, which was partly coagulated. The cellular envelope of the aorta from which the blood had transuded into the pericardium was charged with coagulum.

Half an inch above the free border of the posterior valve of the aorta was a sigmoid rent, nearly an inch in extent, passing through the internal and part of the middle

coat of the vessel. The blood, having formed a new channel between the layers of this middle coat, had extended upwards, around various portions of the circumference of the vessels, to the carotids, downwards as far as the origin of the renal arteries; and the intruding current of blood had torn away the inner and middle coats of some of the intercostal arteries from their attachment to the aorta. The substance of the left ventricle was thicker, but less firm, than natural. The calibre of the aorta, although larger than usual, presented no special or partial dilatation. The inner arterial coat was throughout delicate and brittle; that of the aorta exhibited atheromatous deposits in almost every part excepting that in which the laceration had occurred.

The bladder contained a little urine, which became opaque on boiling. The kidneys were slightly granulated. The author attributed the fatal event to the action of an hypertrophied heart—excited by pain, alarm, and exertion—on the lacerable arterial tunics, this friability being probably owing to imperfect nutrition, the consequence of disease in the coronary arteries. He referred to the somewhat rare occurrence of escape of blood into the pericardium without rupture of that membrane, as explaining the gradual failure of the powers after partial amendment, and considered that phenomena such as those present in this instance, although somewhat obscure, were sufficient to authorise a suspicion of the real nature of the injury.

Dr. JEAFFRESON regarded the case related as an uncommon one. He briefly detailed some particulars of a case which had lately formed the subject of medico-legal inquiry. The patient was a strong healthy-looking man, thirty-five years of age, who was seized suddenly, on returning from work, with severe pain across the abdomen, extending to the back. The heart and chest were unaffected. He had picked up a piece of biscuit on his return home, and eaten of it, and it was supposed that he was labouring under the effect of some corrosive poison. As the symptoms, however, did not warrant such an opinion, he was treated for spasm, the result of the passage of gall-stones. The pulse was unaffected. The pain continued during most of the day, and towards night signs of exhaustion began to manifest themselves. He died the following morning. The pericardium was found much distended, and the arch of the aorta presented the appearance of a large aneurism; that appearance arising from the effusion of a large quantity of blood between the coats of the aorta, extending from the arch to the thoracic portion to the extent of six or seven inches. Death immediately resulted from an opening just in front of the aortic valves,

through which the blood had oozed, and distended the pericardium. It was remarkable, that, during the entire course of the case, the state of the circulation did not point to the origin of the mischief. The pain at the commencement was accompanied by vomiting.

The PRESIDENT said, that cases similar to the one related were usually under the care of the physician, as they occurred generally in the thoracic aorta. It had fallen to his lot, however, to see one case in which the abdominal aorta was the portion of the vessel implicated. The subject of the case was a woman in St. George's Hospital, with senile gangrene of the toe. Fourteen days before death, a painful pulsating tumor presented itself in the abdomen, the gangrene extended up the leg to the groin, and she died. A dissecting aneurism of the abdominal aorta was found, in which the inner membrane had been separated through its entire circumference. The canal was undiminished in size in consequence of dilatation of the outer coat. The edges of two or three apertures which existed were very ragged.

Dr. JEAFFRESON said, that there was no atheromatous deposit in his case, unless, indeed, in a very early stage. The coronary arteries were healthy; the heart hypertrophied.

Dr. PEACOCK said, that three cases of dissecting aneurism of the aorta had come under his notice. Two of these were reported in the London and Edinburgh Medical Journal, the third by Dr. Henderson. Two were similar to those before the Society, in the other a completely new canal had been formed; and, in this case, the disease appeared to have existed for a long period, not, as was usually the case, for only a few hours. The symptoms diagnosticating this lesion were, the occurrence of sudden fainting, a subsequent rallying, and a suddenly fatal termination. It usually affected the thoracic aorta, near to its arch, but he had seen one case in which the vessel was affected in its abdominal division. Laennec's first case of this kind was in the abdomen. The aneurism was usually situated between the lamellæ of the middle coat, and not between the middle and outer coats. Cases illustrative of this were on record, and a preparation exhibiting it was in the College of Surgeons' Museum. Mr. Guthrie had described a case in which the aneurism was situated between the lamellæ of the middle coat, with the addition of a few fibres from the outer coat.

Dr. MACLOUGHLIN referred to a case which had occurred in a soldier many years since, and was published in the Glasgow Medical Journal. The man was suddenly seized with syncope, and was restored by frictions of opium, and other stimuli. He

had a tooth extracted two days afterwards ; immediately subsequent to the operation he gave a loud scream, and fell into a state resembling apoplexy, from which he sunk in twenty minutes. The pericardium was found full of blood, and the aorta, near its valves, ruptured through two-thirds of its circumference, the ruptured edges being quite smooth. The aorta was ecchymosed ; the aneurism occupied a space between the middle and outer coats. There was no atheromatous deposit. The preparation was in the museum at Fort Pitt. The symptoms in this case were syncope, severe pain, and sickness.

Case of Circumscribed Arteritis. By ROBERT DRUITT, Esq. Surgeon, London.
Communicated by WM. FERGUSON, Esq.

The patient, a young man aged 22, subject to a violent and irregular action of the heart, following acute rheumatism in his youth, during recovery from an attack of acute dysentery, found on awaking in the morning his right arm cold and benumbed, and he was unable to keep it warm. The author on visiting him was unable to feel the pulse at the wrist, and found the arm cold and flaccid. The subclavian and axillary arteries beat most forcibly ; and on tracing the latter downwards, he found that at one spot, just where it becomes brachial, it felt enlarged and solid, and was tender to the touch. Down to this spot, which was about an inch in extent, the pulsation was as strong as possible ; but here it ceased abruptly ; and below it there was not the least pulsation in any of the arteries of the limb. The arm was kept wrapped up and at rest. During the ensuing week the warmth, feeling, and strength gradually improved. He afterwards went out of town for a fortnight, and on his return the circulation was completely restored. The axillary and brachial arteries were pervious throughout, and the pulse was beating as at the other wrist.

The author believes the cause of the above related phenomena to have been a subacute inflammation of a portion of the artery, with effusion of lymph from its inner surface, and slight coagulation of blood. Cases of this disease are not uncommon ; but the author never met with a case in which the effusion was absorbed, and the canal of the artery restored.

The PRESIDENT regarded the case as imperfect, as it omitted to state the exact time at which the circulation was restored.

B. G. BABINGTON, M.D. F.R.S. has been elected a Vice-President of the Society, in the place of the late Dr. Theod. Gordon.

The next and last meeting of the present session, will be held on Tuesday the 24th instant.

Hospital Reports.

GUY'S HOSPITAL.

Case of Pistol-shot Wound, in which the balls perforated the diaphragm and left lung in two places, with the post-mortem examination. [Reported by Mr. CLEAVELAND.]

— — — — — æt. 51, admitted into Accident Ward, No. 19, under the care of Mr. Key, May 7th, 1845.

He is an unmarried man, of pale and hypochondriac expression of countenance, with low retreating forehead, and mouth drawn to the right side : by occupation a law-writer, but for the last two years has had no situation, and has lived in an almost destitute manner. During the six months immediately previous to his admission he has been in an exceedingly low melancholy state, and frequently manifested symptoms of mental aberration.

Twenty-one years ago he had an attack of paralysis of the left side, attended with entire loss of vision, and deafness of the left eye and ear, from which he has never recovered in the slightest degree.

He was brought to the hospital about 11 P. M., in a cold, wet, and nearly exhausted condition, with the history that he had shot himself about half an hour before, with a pistol containing four bullets. He was placed in bed, and on examination, there appeared an oval contused wound, nearly an inch in length, and situate about two inches and half to the left of the sternum over the sixth rib.

There were considerable ecchymosis and discolouration around the seat of injury, and midway between the angle of the rib and the spine was a firm and tense tumor, as large as an orange. Some dark unhealthy-looking blood was trickling from the wound, the quantity of which was not excessive, but was increased by making pressure from the swelling towards the aperture.

Warm bottles were applied to the patient's feet, and an anodyne, combined with ammonia, was administered.

May 8th.—He has been very restless, and at times complained of great pain in the side. The hæmorrhage has been rather profuse during the night. Was seen to-day by Mr. Key, who thought he could detect some foreign body about an inch to the vertebral side of the angles of the 10th and 11th ribs, and by making a slight incision, he removed, with the aid of a pair of common dressing-forceps, two bullets of the ordinary size, very firmly united together. Mr. Key now introduced his finger into the original wound for the purpose of discovering the other two bullets, but without success : the 6th rib

was found completely shattered, and a sensation was conveyed of a soft unresisting pool, which he did not think fit to disturb.

On withdrawing the finger, and removing one or two portions of fractured bone, a gush of air apparently escaped, which naturally led to the idea that the lung was wounded, but a slight gurgling continuing, it was not deemed improbable that it arose from the costal pleura having been perforated, and from the motion of the chest a vacuum was occasionally formed.

There are no symptoms of pneumo-thorax elicited by the ordinary physical signs. The respiration in the upper part of the lung is feeble, but distinct. He has had no hæmoptysis. The decubitus is dorsal, and when he is perfectly quiet, there is no pain, but on taking a full inspiration, or on any movement of the body, he complains of the most acute pain about the seat of injury, and the oozing from the aperture is increased. The pulse is 94, regular, feeble. Number of respirations per minute, 24. He feels much inclined to dose. Ordered—

A bread poultice to be applied to the wounds. Diet, beef-tea.

He has slept very little during the night, and had considerable pain occasionally in the left side. Has expectorated some yellowish muco-purulent sputa, and with them one pellet only of dark venous-looking blood; has voided a free quantity of healthy urine. The bowels have not been moved for two or three days. Tongue slightly coated with brown fur, but moist; skin natural; pulse 90, very feeble; number of respirations, 31. Complains of great thirst. On examining the chest, there are found slightly increased resonance, and deficient respiratory murmur, but the latter is still audible in the upper portion of the lung. Owing to the great debility of the patient, and the pain occasioned, the examination cannot be very minutely made. Ordered—

Ol. Ric. ζ iv. statim. Jul. Am. Efferves. 4ta horis.

A bullet was found to-day near the spot where the act was committed, corresponding to the two removed.

10th.—He has again had a restless night, and about the same amount of pain. There has been no return of the hæmoptysis, but he has frequently vomited matter of a dark coffee-ground appearance. The oozing from the wound has been rather copious, and now has an offensive smell: it seems to consist chiefly of blood and serum. Bowels freely open; urine voided in fair quantity. The patient gets more feeble, and is at times quite incoherent. Ordered—

Carbon. Terchlorid, ζ j; Aquæ. ζ vj. ft. loti utend. Pint of Porter.

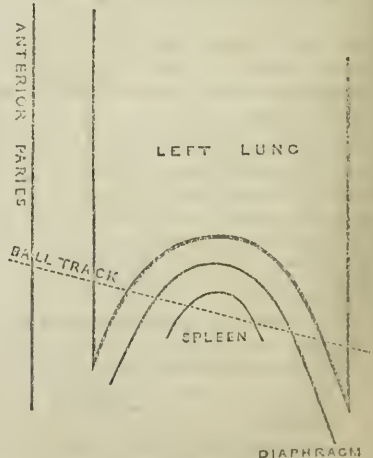
11th.—On the whole he has had a more comfortable night, but the sickness is unabated. Tongue pretty moist; skin cool; pulse 100, extremely feeble; number of respirations, 32. He was removed last night to another bed, when a copious discharge of blood and serum commenced, and has since continued. Mr. Cock removed this morning a considerable portion of wadding and other extraneous matter from the original wound.

12th.—Since last report he gradually became more feeble, passed a sleepless night, and about 7 A.M., the nurse observed that he suffered from great difficulty of breathing. There was no return of the hæmoptysis, but the sickness continued, and he died at five minutes after one A.M.

Inspection, twenty-four hours after death.—The left side of the thorax was considerably swollen, discoloured, and emphysematous. On reflecting the skin over the seat of injury, a dark sloughing, or gangrenous and clotted surface, as large as the palm of the hand, and which emitted a highly offensive fætor, was brought into view. The sixth rib was found exceedingly comminuted where the bullets had entered, and was in wrapping a piece of wadding. The fifth and seventh ribs were also fractured. A sharp spiculum of bone was projecting into the left lung, which, on the sternum being removed, presented a half collapsed appearance. There was an old and firm band of adhesion just behind the left nipple. The effusion into the left pleural cavity was scanty, and of a thick bloody or purulent nature.

The right lung was full of air. The heart small, and beginning to decompose.

Diagram of the track of the ball.



On reference to the diagram, it will be seen, that the bullets first pierced the anterior

point of the upper lobe of the left lung, which was in a ragged and sloughy state; they then passed through the diaphragm, and in their course produced a deep and ragged furrow across the upper surface of the spleen. Next they produced another and more ragged perforation of the diaphragm, and then terminated in a simple ball-track through the posterior base of the lung about an inch from the angle of the rib.

There was no trace of other track within or without the ribs.

There was no blood or fluid discovered in the abdomen, but there was considerable emphysema about the stomach.

On examination of the brain, the membranes were found to contain a more than usual quantity of serum; they were opaque, thickened, and indurated at the base of the skull. In the posterior inferior half of the grey plane of the corpus striatum of the left side, there was a large old watery cavity of vascular web, and in the convolutions external to this, which were atrophied, there was some ochrey serum, and all around induration of substance. The right pes hippocampi was irregular within. The left was dark too, cellular and watery from old changes, and in the centre a cavity.

The left optic nerve, from its decussation forwards, was very wasted and translucent.

REMARKS.—Mr. Key, at his visits to this patient, alluded to the difficulty of forming a correct opinion as to the track of the ball in this case, in consequence of the absence of direct evidence of the lungs having been wounded. For the first twenty-four hours not any bloody sputum had been expectorated, nor was there any emphysema of the surrounding tissue. Dr. Addison, after a careful auscultation, pronounced the lung to be carrying on its respiratory function in a normal manner. The only evidence of the lung being wounded occurred when the broken portions of the rib were removed, in one slight gush of air from the aperture, and which never recurred either when he took a deep inspiration, or coughed with violence. Dr. Hennen lays perhaps too much stress on the absence of blood, as indicating the integrity of the lung. The nature of the wound made by a bullet causes it to be followed by very little comparative hæmorrhage; and when the lung happens to be wounded, as in this instance, near its margin, where the blood-vessels are small from extreme subdivision, but little bleeding is to be expected. The only positive evidence that could be obtained as to the course of the ball, whether it had passed around the parietes of the chest, or in a direct course through the thoracic cavity, might have been gathered from an examination of the eleventh

rib, opposite to which the balls were extracted. If the rib had been found to be splintered, it could have been done only by a ball passing through the cavity; as the ball taking a circuitous route either within the cavity or on the outside of the thorax, could hardly be supposed to strike the eleventh rib with sufficient force to break it. Such an examination, however, of parts injured by shot, is properly not deemed advisable, as it is more likely to injure the patient by disturbing parts than lead to any thing beyond gratifying the surgeon's curiosity. One of the most singular points in the case is, the little hæmorrhage from the spleen, torn as it was pretty deeply on its surface. Its contractile tissue most probably contained but little blood at the time it received the wound; and the man did not live long enough to cast off the sloughs, which in all probability would have led to a fatal hæmorrhage.

Correspondence.

INSPISSATED OX GALL.

To the Editor of the Medical Gazette.

SIR,—A few weeks ago, I published in the *Lancet*, the result of some observations on the beneficial effect of ox gall in obstinate constipation. The certainty of its operation on indurated clay-coloured scybæ; the unirritating properties of the substance contrasted with those of the drastic stimulating purgatives generally employed; and the universal improvement produced by it in the system when evidence existed of deficiency of the natural hepatic secretion, lead me to hope that the remedy will eventually supersede our present means, by coming into general use. Will you permit me, therefore, to request that the following form for inspissating ox gall may be published in the pages of the *GAZETTE*? An open vessel, containing any quantity of perfectly recent ox gall, should be plunged into a saucepan of boiling water, and simmered until the bile is of sufficient consistence to be formed into pills. It should be frequently stirred during the operation to prevent an unequal hardening of the mass. The addition of a little calcined magnesia will expedite the process. If carefully prepared, it will keep for years, and when required for use should be gently warmed before the fire.

Two drachms, dissolved in a pint of hot water, or thin gruel, will be of sufficient strength for enemata. One or two five-grain pills may be given twice or thrice daily, according to the exigency of the case.

I am, sir, your obedient servant,

R. H. ALLNATT.

Parliament Street,
June 16th.

ON SPERMATOOZOA IN THE FLUID OF
HYDROCELE.*To the Editor of the Medical Gazette.*

SIR,—In the 27th Volume of the Transactions of the Royal Medical and Chirurgical Society, there is a paper by Mr. Dalrymple, in explanation of the occurrence of spermatozoa in the fluid of encysted hydrocele. The learned author endeavours to establish the following point, that the existence of these bodies in the hydrocele fluid is dependent on a wound either of the vas deferens or some of the tubuli testis: and, in confirmation of this idea, he states, that the spermatic cord is in hydrocele more frequently found in front of the tumor, and spread out over the sac, than is commonly imagined: in support of which opinion, he adduces the authority of Scarpa and Le Dran. There can be no doubt that such is occasionally, though not frequently, the disposition of parts. Admitting this to be proved, are we justified nevertheless in believing that, in cases where spermatozoa are found in the fluid of the hydrocele, any wound of the vas deferens or tubuli testis has occurred? I confess I much doubt it. What, then, is the explanation of the phenomenon alluded to? I cannot but believe that the explanation is simple enough.

Assuming that spermatozoa are living animalcules, which I think is yet not proved satisfactorily, they must be regarded nevertheless as a secretion from the blood of the spermatic artery, placed in a position favourable for their perfect development. Now, in cases of encysted hydrocele, there can be little doubt that the fluid is poured out from the spermatic artery; and when the artery is thus secreting the serum of the hydrocele, what is there to prevent at the same time the effusion or secretion of those bodies which under circumstances thus favourable, become evolved, and are thus perfected into those remarkable bodies to which the term spermatozoa is given, whether correctly or not? The explanation thus offered requires no alteration in the natural position of parts, and at the same time does not involve the necessity of any bungling or careless surgery.—I am,

Your obedient servant,

JOHN ADAMS.

31, New Broad Street,
June 14, 1845.**Medical Intelligence.**

THE "TIMES" ON THE RECENT STATEMENT
OF THE COUNCIL OF THE ROYAL COLLEGE
OF SURGEONS.

THE "Statement relative to certain parts
of the Bill for regulating the profession of
Physic and Surgery as amended in Com-

mittee," which has been published by the Council of the College of Surgeons, is not to be passed without notice. The Council state that the new charter and bye-laws of the College were framed in conformity with propositions submitted to them in the form of "Heads of a Bill for regulating the practice of Medicine and Surgery," and (though it is not distinctly so stated) the inference from what they say is unavoidable, that those "heads" were submitted to them by or from Sir J. Graham. "They assented to the change which the charter effects in the constitution of the College as an essential part of the measure then contemplated for the regulation of the medical profession," and they complain that the amendments of the bill differ in principle from the original bill, and are inconsistent with the new charter and bye-laws. It is evident enough that the Council find themselves in a very awkward predicament. Relying on the Government for acting on principle, and taking it for granted that what was proposed by the Home Secretary in 1843 would be his rule of conduct in 1845, they went to work with their new charter to secure to themselves under the expected act as close a monopoly of surgical practice as they could well manage; and having "imagined" that any college of general practitioners was to be nothing more than a new society of apothecaries, "they cannot help expressing their surprise, that *without any official communication to those most affected by it*, a new college is about to be established, which is intended not only to embrace medicine, surgery, and midwifery, but to be co-ordinate in professional rank and importance with the existing Colleges of Physicians and Surgeons." By "those most affected by it," the Council of course mean themselves; and so it seems that they consider that Sir James Graham has thrown them overboard, and deems it sufficient to make his official communications to 12,000, instead of to 21, out of the members of the College! We cannot screw ourselves up to sympathize with the 21. Had they taken our advice, repeatedly urged upon them last autumn, to do justice to their brethren, they would now have been in an entirely different position. They might then have secured the cordial co-operation of the great majority of the members of the College, and have effected a virtual separation between those who are members of their College and those who are merely apothecaries; but the contemptuous tone with which in this statement they refer to the general practitioners, evidences their having no desire to take a new and better course. What do the Council mean by "Apothecary" being the "characteristic designation" of the "general practitioners"? He is as much a surgeon,

so far as examination and diploma are concerned, as any one of themselves; inasmuch as he has passed an examination to which they have not submitted, he is professionally more highly qualified than they. The logical ability of the Council we have already had occasion to notice, and they have now given us a specimen of their algebraic accomplishments. $S + A = A$, is their formula for the general practitioner, and for themselves $S = A + S$. After this specimen of the mathematics taught in Lincoln's-inn-fields, we hope that the Council will publish a new edition of Hutton as an appendix to the *London Pharmacopœia*. The value of "pure" surgery had an illustration in Mr. Seton's case, and when the inquest is concluded we have something to say on the difference to the patient between "pure" surgery with its scalpel, and medical surgery with its compress, in the treatment of aneurism. At the head of medical surgery we, perhaps, may place Mr. Abernethy, remembering his repeated denunciations of the use of instruments except as the last resort, and of operations wherever they could by any possibility be avoided as "the opprobrium of surgery;" but during the pendency of that inquest we shall content ourselves with referring to the evidence already given on it, as containing matter of great importance at the present juncture. A more instructive case as to the necessity of regularly educating surgeons in something beyond mere anatomy and dexterity with the knife, could scarcely have been brought under the notice of the Home Secretary. The Council object to the new college having the power of rejecting at their examination a candidate who has been passed by the preliminary examiners as duly qualified. They fear that such a rejection would place the surgical examiners at the joint board in a "degrading position." Can they have forgotten the "degrading" avowal in their notorious letter, that they have conferred the diploma of surgeon on "professional paupers and persons of notoriously bad character, puffers and vendors of nostrums and secret remedies, and the writers of indecent advertisements?" For the advantage of the public, what could be better than that those examiners should be deterred, by the fear of degradation, from palming off, as fully qualified surgeons, men possessing "not necessarily more than that amount of information and skill which is absolutely required for the ordinary exigencies of surgical ministrations?" We think that the Committee of the National Association are too well satisfied with the amended bill, and that the Council apprehend from it some consequences injurious to themselves which it will fail to produce; but we must protest against its being in any respect

altered to suit the views of the Council, and we must still urge on that Committee the importance of securing to the fellows of the new College a designation which shall preserve to them their ancient and honoured name of surgeon. The Council admit that under the bill the general practitioner, who will have to pass the ordeal of two distinct examinations, each embracing surgery, before he can be admitted to practise, will be "completely a surgeon in all his functions, qualifications, and privileges;" and there cannot therefore be any doubt of the injustice of depriving him of his right to be known by that name which is now conferred on him on his passing the mere examination of the College.

What effect this statement will have on Sir James Graham it is of course impossible to predict. There was an ominous silence on the subject last Monday, when the bill ought to have been committed; and no official announcement of the Home Secretary's intentions with respect to it has been made. The celebrated letter of the Council so thoroughly exposed the impropriety of intrusting them any longer with the education of the surgeons of England and Wales, and this "Statement" so clearly shows their eager desire to prevent there being that rivalry which is essential to the progressive improvement of this education, that the welfare of the nation requires any alteration which may be made in its provisions to be of a character opposed to those required by the Council. Whether or not Sir James Graham may escape from the difficulties with which he is beset by throwing up the bill, we shall probably soon know. In case he should do so, it may be as well that the general practitioners should not forget that the Council have, by the admissions with which their statement commences, given to their members at large an indisputable claim to such an amendment of the last charter of the College as shall place them on a proper footing with the arbitrarily chosen fellows. Let this be done, and the rejection of the bill will be borne by the large majority of the members as far from an unmitigated evil.

NITRE IN AFRICA.

A VERY important discovery has been lately made of extensive deposits of the nitrates of potash and soda, in the neighbourhood of Angra Pequena, on the western coast of South Africa. Whether they will suffice to supply the place of the nitre (nitrate of soda) which has hitherto been derived from Atacama, in South America, is yet unknown. These salts are so largely employed in chemistry, the arts, and in agriculture, that the discovery of new deposits nearer to Europe than Ceylon and Peru, is likely to be productive of great benefit.

COMPARATIVE MORTALITY IN 1842, FROM SMALL-POX, SCARLATINA, AND CHILD-BIRTH.

THE mortality in 1842 was nearly the same as in the previous year. The mortality by diseases of the Zymotic class was 4062 in 1842, and 4049 in 1841 to a million living. In 1840 it was 4947.

Small-pox and *Scarlatina* present the greatest variations in the five years over which the Abstracts extend: for 16,268 persons died of small-pox in 1838, and 2715 in 1842. The epidemic of scarlatina attained its maximum in 1840, and afterwards declined.

Total Deaths registered in	1838	1839	1840	1841	1842
From Small-pox . . .	16,268	9,131	10,434	6,368	2,715
From Scarlatina . . .	5,802	10,325	19,816	14,161	12,807
Deaths to 1,000,000 living.					
From Small-pox . . .	1,101	604	679	408	172
From Scarlatina . . .	393	683	1,289	908	809

The reduction in the mortality from small-pox since 1840 was probably the result, at least in part, of the Vaccination Act; which has not, however, yet effected all the good that may be anticipated, as an epidemic has since 1842 broken out in the metropolis, and proved fatal to great numbers. The deaths in France from small-pox were 3317 in 1842, or not more than 91 to a population of 1,000,000. The deaths in Austria from small-pox were 4619 in 1840, 5189 in 1841, and 4411 in 1842, out of a population of 21,571,594; while the deaths in England, where vaccination was discovered by Jenner, were 10,434 from small-pox in 1840, and 16,268 in 1838, out of a population under 16 millions! *Diarrhoea*, *Dysentery*, and *Cholera*, were fatal to 7622 persons, which is considerably above the average, and the excess may be ascribed, perhaps, to the higher temperature of the year. *Influenza*, on the contrary, and probably for the same reason, was less prevalent than in

the previous year; 1659 deaths were referred to that head in 1841, and 883 in 1842. Fifteen deaths from *Hydrophobia* occurred in 1842, while 7 only were registered in 1841; but 24 persons died of hydrophobia in 1838.

The deaths from *Childbirth* in 1842 were 2687, which is a considerable reduction on the mortality of the four previous years. Many deaths caused by "Childbirth" are registered under the several diseases which follow, or are the direct result of that state. It is not uncommon, upon inquiry, to find that a case simply returned as "inflammation of the bowels," or inflammation of some other part, has occurred after childbirth, and been a sequel of, or concomitant disease with, "Puerperal Fever." "Childbirth" should be invariably registered in such cases, as well as the secondary diseases. The ages at which 244 deaths from puerperal fever occurred, were—

Ages.	17—20	20—25	25—30	30—35	35—40	40—45	45—47
Numbers .	15	62	63	48	34	18	4

It is to be regretted that the return of deaths from this cause is so imperfect, and that we do not know the ages of the mothers who survived childbirth."—*Sixth Report of Reg. Gen.* 1844.

TESTIMONIAL TO MR. DODD, OF CHICHESTER.

[We extract the following paragraph from the *Sussex Chronicle*. It is always a matter of great gratification to find that the arduous services of a medical practitioner thus meet with a substantial reward after a long course of practice. It is not often that such rewards are distributed among members of our profession, although no one is more called upon than the medical practitioner to

render gratuitous services, to his own loss and discomfort. Mr. Dodd has been a frequent contributor to our pages, and we believe him to be eminently deserving of this testimonial, which marks the estimation in which he is held by those to whom he has rendered professional services.]

Testimonial to Mr. Dodd, late Surgeon of the Chichester Infirmary.—It has been to the infinite regret of the numerous friends and patients of this excellent surgeon, in West Sussex and East Hampshire, that during the last two years he has been compelled by ill health to withdraw himself, in a great measure, from the active duties of his profession. We are happy to learn, however, that his temporary retirement

from labours that were too great for his strength, has been the means of restoring his strength sufficiently to enable him to resume the practice of his profession in a less extensive field. A man like Mr. Dodd could not be permitted to leave the scene of his long labours without receiving from the community which he had so long benefited, some mark of the love and respect which his presence had inspired, and of the gratitude which his departure had left behind. Accordingly, at a meeting of his friends and well-wishers, held at the apartments of the Chichester Literary Philosophical Society, on the 5th instant, a handsome silver inkstand, with an appropriate inscription, and a purse of gold, were presented to him, amid the mingled gratulations and regrets of his numerous friends of Chichester and its vicinity. These sentiments were well embodied in a feeling speech addressed to Mr. Dodd by the Chairman of the meeting, the Rev. Vernon Harcourt, of Westdean House. This poor memorial, Mr. Harcourt said, was presented to Mr. Dodd as a testimony of the sincere esteem of his numerous friends for his private character, as well as of their high opinion of his scientific attainments and professional skill. The occasion (he added) gave rise to emotions of pleasure, chastened by no slight pain. Whilst Mr. Dodd's friends and fellow citizens felt sincere gratification in having so public an opportunity of bearing testimony to his worth, and in thus presenting him with a lasting memorial of their affection and esteem, they could not but deeply regret the departure from the city of one who for many years had devoted himself, with such zeal and effect, to the promotion of the good of its institutions and the best interests of its inhabitants; and their regret was enhanced by the cause of the separation, viz. the ill health of their excellent friend.

In conferring on Mr. Dodd this public mark of their esteem, the citizens of Chichester have only vindicated the character which they have always shewn—at least within our knowledge,—viz. a readiness to acknowledge merit, and a spirit to give unequivocal evidence to the world that they did so. We believe they never had a better cause for action than the present occasion. In honouring Mr. Dodd as they have done, they have paid homage due to intellectual and moral worth of no ordinary stamp, and in honouring him they have done honour to themselves.

Selections from Journals.

SEMEIOLOGY.

ON THE COLOUR OF THE VELUM PALATI IN ICTERUS. BY J. D. LONJON, D.M.P.

THE colour of the mucous membranes in jaundice, with the exception of the conjunctiva, has been only generally alluded to by authors. I have observed the icteritious tint on all the mucous membranes except on the free border of the lips, and, I think, even here also. The colour, however, is less intense than that of the skin, and never of the greenish hue which this sometimes presents. This colour, which has been but vaguely alluded to by Portal, as existing in some cases of hepatic obstruction, merits, and form, some attention as a special sign of icterus. If the interior of the mouth be inspected, a yellow tint may be observed inside the lips, gums, inferior surface of the tongue, palatine arch, and lateral and posterior fauces. It need not be present in all these parts at one time, nor is it constantly found in any one of these situations. But on the velum palati, a yellow tint, constant, uniform, always deep, is spread over the surface of this region: posteriorly it is lost in the natural colour, more or less altered at the edge of the velum, uvula, and pillars of the fauces; but anteriorly it terminates by a well-marked transverse line, connecting the last molars of the upper jaw. If once seen, this sign will never be found to fail, even in the slightest cases; and in all stages it is decided and limited. I have also verified its presence in cases of lead colic, cancer of the liver and other organs, after intermittent fever, where the lengthened disease has imprinted on the skin a cachectic tinge peculiar to their respective natures. The only instance in which I failed to find it was the case of a man who, after comminuted fracture of the tibia, became jaundiced in some parts of the face and conjunctiva, and after death was found to have been the subject of two large hepatic abscesses. But its absence in this single instance must not be allowed to weaken its general value. Its presence in all, even the slightest cases of icterus, and also of pseudo-icterus, where the conjunctiva is rarely tinged, and its intensity, which is in proportion to that of the skin, claim for this sign some semeiological value. It is of value especially when the other symptoms fail, or in cases where the natural colour of the skin prevents the morbid hue from being so readily recognised.

The rationale of this sign may be understood by reference to the anatomical characters of the part: the softness and excessive vascularity of the velum favours the icteritious

effusion, which again becomes suddenly changed where this tissue is changed for the less vascular fibro-mucous tissue of the palatine arch.—*Gazette Médicale*, Avril.

[REMARKS.—It is proper to state, that in this country it is a common practice to inspect the inferior part of the tongue, not so much as a point of diagnosis, but in illustration of the fact which M. Lonjon here seeks to establish.]

PHYSIOLOGY.

ON THE AGE AT WHICH MENSTRUATION COMMENCES.

MR. ROBERTON, of Manchester, who has employed much laborious research in determining the actual average period of life at which puberty commences in the females of various climates, has adduced some interesting statements with regard to the time at which the Esquimaux women arrive at maturity*. The opinion was broached by Haller, and still generally prevails, that, while in warm climates women reach puberty at the ages of 9, 10, and 11, and in the temperate zone in the next four or five years, the same does not happen in high northern latitudes till the age of 18 or 20. In disproof of this conclusion, Mr. R. adduces tables which go far to shew that there is no very remarkable difference between the age of puberty in the Esquimaux and in the women of our own country; the average age at which puberty commences in the former being rather under sixteen years. The earliest age at which he ascertained that an Esquimaux woman has been known to bear a child is 15½ years. It does not appear that the women of Labrador continue to menstruate later than is usual in England. The fecundity of the Esquimaux, judging from the table given by Mr. Robertson's correspondent, is remarkably great, the average being about six children to each woman; and it is stated that, out of 66 women (married women, no doubt), only two had failed to be mothers.

In a previous communication to the same work (vol. 58), Mr. R. brought forward some important facts with regard to the time at which menstruation commences in the Negro females. Communications which Mr. R. received from Dr. Nicholson, long resident in the West India Islands, shew that, in this climate—(1) menstruation has not been known to commence before the 12th year, either in whites or blacks, but some few instances were met with at that age; and (2) that menstruation commences most frequently in the 14th or 15th year. Dr. N. knows no difference in this respect between the whites and blacks.

In the number of the same work for July 1844, Mr. Robertson gives the result of an inquiry instituted for the purpose of deciding the truth or incorrectness of statements relative to the alleged age at which female puberty commences in Greece. The reports of his correspondents do not afford very satisfactory or definite results. Out of 36 instances menstruation commenced at the age of 9 years in 1 female, at 11 in 5, at 12 in 6, at 13 in 3, at 14 in 4, at 15 in 3, at 16 in 4, at 17 in 4. In one menstruation had not commenced at 17; this was also the case in one at 18. Three had menstruated at this age; and in one female 65 years of age the catamenia had never appeared.

The average age, drawn from 33 of these instances, is 14 years. Mr. Robertson fixes the average age at which menstruation commences in England at 14 years and 6 months.

M. Brierre de Boismont, in his work, "*De la Menstruation considérée dans ses Rapports, Physiologiques et Pathologiques*," endeavouring to ascertain the period of life at which menstruation usually commences in European females, gives the most extensive table yet published on the subject, as it affords the results of 2352 instances. This table shews that the greatest number of women arrive at puberty during their 14th and 15th years, and that the proportion diminishes both above and under that age. Among the examples of the earliest puberty cited in the table are, 1 at 5 years of age, 1 at 7, 2 at 8, 11 at 9, and 34 at 10. The latest are, 9 at 22, 5 at 23, 3 at 24.

SURGERY.

PRACTICAL CONSIDERATIONS UPON THE CAPITAL OPERATIONS OF SURGERY, AND THE MEANS OF AVOIDING, IN A GREAT DEGREE, THEIR DANGERS.

AFTER having endeavoured to establish the fact, that the favourable result of an operation depends much less than has been supposed upon the method adopted in its performance, the author attempts to prove that the regimen to which the patient is subjected cannot be considered to have much influence. "I have seen," says M. Ballard, "patients who have been operated upon die under a debilitating regimen, as well as under a fortifying one: I have only remarked that death took place at different periods,—those who were allowed abundance of food, and to whom tonics were given, dying from the fifth to the tenth day after the operation; whilst those who underwent free depletion, and were restricted to a spare diet, died from the thirtieth to the fortieth day. On the other hand, the convalescence in the first class of cases has been rapid, whilst in

* Edinburgh Med. and Surg. Journal, Jan. 1845.

the second it has been tedious and protracted."

From these facts, M. Ballard concludes that medium degree of support is best calculated to favour recovery: he then proceeds to a consideration of those agencies which have appeared to him to be the most injurious in the circumstances referred to, and states that by acting upon the conclusions which he has drawn he has met with a degree of success which has surpassed all his expectations,—being able to refer to twenty-eight amputations,—twenty of these being of the inferior extremities, and eleven of these of the thigh, without a single failure, *i. e.* without a single case of death before complete cicatrization of the wound, nor until upwards of a year had elapsed after the operation.

The first cause of death in those who have been operated upon is fear of the operation, and dread of the period when it is to take place. This cause affects patients in a manner much more powerful and injurious than might be supposed; under its influence, the pulse, previously quick and full, becomes small, concentrated, and intermittent; colic, nausea, and other phenomena supervene, and these continuing to act upon the patient after the operation, add materially to his dangers.

The first indication to be fulfilled is consequently to allow patients, even those possessing the strongest moral courage, to remain in ignorance, not only of the time of the operation, but also of its necessity.

The second cause of the mortality is pain; it is from the nervous shock which it occasions that those patients die who perish under the knife, or immediately after the operation, and before the development of inflammation. The pulse becomes small, the skin changes its colour, and is covered with a cold clammy perspiration, and if the capillary circulation cannot be re-established, there will soon arise some fatal congestion of the heart, brain, or lungs. When the first cause has been avoided, it is rare that this exerts so dangerous an influence; but when both are united this unfortunate termination is but too frequent.

The second indication, therefore, is to diminish or destroy sensibility, so as to render tolerable the pain of the operation. This may be readily effected by the exhibition of small doses of some narcotic; *e. g.* one-third to two-thirds of a grain of hydrochlorate of morphine, in divided doses, during the twenty-four hours, for two or three days previous to the operation.

The third and most frequent cause of death is the state to which the name of traumatic or suppurative fever is given, and the corresponding indication will be, not to

attempt to combat it, for when once developed it is not within the resources of art either to arrest its progress or avert its consequences, but to prevent its occurrence by guarding against the development of heat and pain, which are the chief elements in that vital action denominated inflammation. We may accomplish this by the employment of bladders containing cold water, which may be removed as often as its temperature rises to that of the surrounding parts.

The fourth cause of mortality is an excessive purulent discharge from the tissues which have been inflamed,—with all its consequent train of evils,—such as burrowing under the integuments, exposure of bones, &c.

If the former indications have been fulfilled, this is not to be apprehended, as no more pus will be secreted than the quantity requisite for the cicatrization of the wound.

Lastly, as causes of mortality, we may enumerate the pernicious influence attending collections of sick persons together, that of malaria, imperfect ventilation, &c. Dessault often said that he had never seen the operation of trepan save the life of a single patient at the Hôtel-Dieu, and the records of the hospital at Besançon also furnish abundant confirmation of the statement just made. Four capital operations were performed, during the past winter, by a skilful surgeon, upon individuals in the civil wards, and in the midst of patients suffering under diarrhoea and typhus fever. All terminated unfavourably after the 30th day, whilst in the military wards three operations equally severe were followed by a rapid cure.

RESTORATION OF THE PERINEAL PORTION OF THE URETHRA, OBLITERATED IN CONSEQUENCE OF INJURY. BY GORDON BUCK, M.D.

THE subject of this case was a boy 14 years of age, who, four months previous to his admission into hospital, had fallen, with his legs across, upon the edge of a flour barrel. No external wound was produced, but the injury which the parts had received was followed by complete retention of urine. Thirty-six hours after the accident, the bladder was punctured above the pubes. The urine continued to be drawn from this opening; none flowed from the natural passage, and attempts to restore it were ineffectual. With the exception of a knotted induration around the membranous portion of the urethra, the perineum was supple and sound. The patient had contrived to draw off the urine in an imperfect manner. The bladder was ascertained, by examination per rectum, to be habitually distended by the residuary urine that could not be discharged through the elevated artificial opening. A catheter introduced into the urethra passed

over a callous fold of the lining membrane before it reached the closed portion.

All attempts to pass an instrument by the obstructed passage failing, the following operation was performed on the 13th of November:—The patient being secured as in the operation of lithotomy, and a full-sized catheter passed down to the closed portion of the urethra, and held steadily in that position, an incision was made in the perineum, along the raphe, nearly two inches in length, opening into the urethra, so as to expose the end of the instrument. A steel sound was then introduced above the pubes into the bladder by the artificial opening, and, with the aid of the finger in the rectum, the end of it was brought forwards, and made to press against the closed portion from behind. The catheter was then withdrawn, and, with a narrow-pointed scalpel, the closed portion was divided from before backwards, the end of the steel sound serving as a guide to direct the track of the incision. A full-sized catheter was at length passed into the bladder, and a large quantity of residuary urine drawn off, though he had made water just before the operation. A compress was placed over the perineum, and secured by a T bandage; to which the catheter was attached by threads passing through the rings. Inflammation and oedema of the scrotum followed the operation, but yielded to appropriate treatment. The catheter was not disturbed until the third day after the operation, at which time inflammation had agglutinated the layers of the divided tissues, and shut off the openings in which the end of the instrument might become engaged in replacing it. The parts had also moulded themselves, and acquired a degree of firmness, so that in returning the catheter it passed easily through them into the bladder. After the first removal, the catheter was changed every day or two, as the case required. Dr. Buck's experience leads him to prefer, decidedly, a silver catheter to a flexible one, as giving more steadiness and support to the parts. The wound above the pubes was closed on the 15th of December, and that in the perineum was healed on the 13th of January. For some time the patient had worn a full-sized catheter at night only, and he became able to retain his urine the full time without dribbling. On taking his discharge he was still continuing the use of the catheter.—*New York Journ. of Medicine*, Sept. 1844.

TRAUMATIC TETANUS—TREATED WITH EXTRACT OF INDIAN HEMP.

In January last, Dr. James Inglis, of Halifax, attended a patient with traumatic tetanus, in whom symptoms of trismus had presented themselves two days previously. The treat-

ment consisted principally of enemata of turpentine and castor oil, to remove the obstinate constipation from which the man suffered; and the administration of the extract of gumjah, in doses of from one to four grains, at varying intervals. In this manner about 28 grains of the extract were taken by the mouth in 64 hours. Latterly the patient became unable to swallow, and three enemata were administered (at intervals of about three hours between the first and second, and five hours between the second and third), containing severally eight, twelve, and six grains of the extract. A few hours before death, a scruple of the extract was applied to a vesicated surface along the cervical spine. The remedies do not seem to have produced any very apparent effect upon the paroxysms.—*Provincial Med. and Surgical Journal*.

[In a patient treated for tetanus, at Guy's Hospital, about a twelvemonth since, 248 grains of the extract were taken in about 135 hours, with almost equal ill success. The extract used, in this case, was procured from three sources, and each kind was used in nearly equal proportions. A single grain from one of these samples produced symptoms of intoxication of a very severe kind in the gentleman who furnished the drug.]

In a case of traumatic tetanus successfully treated by Mr. Solly at St. Thomas's Hospital, (recorded in our pages in April last), about ten drachms of the tincture of Cannabis were administered in four days, in doses of from twenty to thirty drops every hour or two. The medicine was discontinued from a belief that the patient was not deriving any benefit from it. The other means of treatment in this case consisted in the use of tobacco enemata, for the purpose of clearing out the bowels, morphia at night, the application twice of blisters along the whole length of the spine, and free allowance of stimulants, and nutritious diet as the disease advanced.]

PATHOLOGY.

FATAL EFFECTS OF THE MOTHER'S MILK UPON A CHILD EIGHT MONTHS OLD.

A WOMAN, who was suckling her child, gave it the breast, at a time when she was in a state of violent excitement. At first the child rejected the breast, but was subsequently compelled by hunger to take it. Soon afterwards, the child was seized with violent vomiting, and the whole of the milk was rejected. After some hours had elapsed, the child took the other breast,—convulsions supervened, and in a very short time, although medical assistance was at hand, and every attempt was made to save it, it died.—*Casper's Wochenschrift*, March 1845.

LONDON MEDICAL GAZETTE.

Lectures.

LUMLEIAN LECTURES,

Delivered at the Royal College of Physicians.

By SIR GEORGE LEFEVRE, M.D. &c.

IMMERSION is the method most in vogue in the Levant for the purification of suspected materials. It is used in all cases where substances are capable, from their nature, of being submitted to this process—as all animal, vegetable, and mineral productions, coins, jewels, porcelain, linen garments, provisions, fruits, &c. These are soaked in water for a certain time previous to being used. Every house is furnished with its water-vessel, its perfume box, its tank, and its stove.

The following is advanced in proof of the specific action of water in disinfecting these articles. The plague was hardly extinguished in Cairo, for sixty convalescents were still in the hospital, when the same beds, the same shirts, drawers, and coverlids which had served for two or three thousand plague patients, were distributed, in the same establishment, to such as were labouring under fevers, wounds, dysentery, venereal diseases, without having undergone any other purification than immersion in cold water, in which there was neither soap nor alkali. As regards our personal experience, says Dr. Bulard, we have given our linen to be washed out of the hospital, and we have taken no other precaution than allowing it to remain soaking in water for the space of an hour. It was afterwards squeezed by the washerwomen without ever communicating the disease to them, notwithstanding there were hospital aprons, stained with the pus of buboes, serosity, and blood of infected patients. Such is the faith of the Levantines in this procedure, that they deem it no act of courage to wear the garments taken off the bodies of infected people, if they have been previously subjected to immersion.

These two methods—artificial heat in a confined air, and immersion in pure water—constitute all that may be considered rational practice; as regards prophylactic measures, applicable to individuals and to effects suspected of containing the pestilential principle.

Since I have been occupied with the subject of these lectures, a pamphlet has been published by my friend Mr. Key, in form of a letter addressed to the Duke of Buccleugh, upon the practicability of preserving the refuse of drains and sewers for the purpose of manure. It is not with this view that I introduce the subject at present, but upon

the principle of preventing pestilential influence, and the striking coincidence which exists between the processes of immersion and Guano streams in decomposing animal matters.

Mr. Key observes, that nature often performs tasks, and conducts operations, which man, with all the appliances of art and science, is unable to perform; and that chemistry has hitherto failed in rendering cloacine available for the purposes of manure. Nature performs this operation in two different ways; in both through the instrumentality of gases in causing decomposition. If hydrogen is the power, offensive exhalations are the result of the operation; if oxygen, inoffensive combination is effected.

In the decomposition of manure on the dung-hill in the farm yard, the ammoniacal gas is formed by the combination of the hydrogen of the decomposed water with the animal nitrogen; but this process is arrested if free access of oxygen be admitted either by turning over the manure, or by water passing through it in the form of rain. The principle is established that aerated water decomposes the gaseous compounds of hydrogen, and that streams passing over cloacine decompose it by chemical processes, and effect this without giving rise to noxious exhalations. I merely insist upon the fact, without discussing the chemical theory of the operation. Mr. Key says: if the refuse of drains flow into a pool, and remain at rest, there is an exhalation of sulphuretted hydrogen; but if water in a stream, however slow, be allowed to pass over the mass, the results of the decomposition are changed by the oxygen which the water holds in solution.

It is upon this principle that the melting of snow, after a hard frost, serves to decompose the foetid gases which arise, and which, when there has been no fall of snow, are sometimes the causes of fever. The fact is indisputable, that a current of aerated water, in passing over a mass of putrescent animal matter, prevents the formation of offensive odours, and saves the whole of the fertilizing matters. Hence, upon these views, Mr. Key proposes the establishment of guano streams. It is not within our limits to speak more at large upon the subject, but, convinced of the fact that local nuisances tend to aggravate the forms of scarlatina, and that this very substance does so, we listen to any suggestion that will counteract such influence.

There are several facts corroborative of the opinion, that aerated water does decompose animal and vegetable matter, and this to the exclusion of noxious exhalations. The late expedition to the Niger afforded a proof of this fact, and offers an interesting but melancholy truth to those who investi-

gate the influence of noxious exhalations on the animal œconomy.

The advantages of steam navigation experienced a great drawback in the increase of mortality in the crews, compared with that when sailing-boats were employed. The sulphuretted hydrogen abounding in the bed of the river was disengaged by the commotion of the paddles, which, in shallow parts, disturbed a greater quantity of noxious gas than under other circumstances. The superficies of the mud was decomposed by the running water, as far as it penetrated, but beneath this the noxious matter lay harmless till it was disengaged by the commotion of the wheels.

"Another species of effluvia, which is the source of epidemic diseases in camps and in towns, when ill-constructed and neglected, arises from the ground being contaminated with human and other excrements, the remains of victuals, the water used in cookery, for washing, the foul straw rotting in tents. Whenever a camp remains long on the same ground, especially in hot and moist weather, fluxes and intermitting fevers seldom fail to become epidemic, unless great precautions are used to bury all excrementitious matters, and proper receptacles and drains under ground are prepared for the urine, water of cookery, &c." To these evils guano manure may be added.

Now it is stated by army surgeons that when an army has been encamped in a malarious district, and when the troops have been more or less suffering from diseases generated under such circumstances, a continuation of such rains as frequently occur in a tropical climate suspends the sickness suddenly. A circumstance of this kind came to my knowledge during the siege of Varna. The soldiers had been decimated by agues accompanied by cerebral congestions. I had an opportunity of treating several of the officers who escaped from the bogs and swamps of the Turkish coast, and who were suffering from this disease. They came over invalided from the camp to Odessa, where I was then resident. A sudden change of weather, with torrents of rain, deluged the country where the troops were quartered, and put a sudden check to the fever. It was precisely at this moment that our embassy, with its suite, arrived at the seat of war; and it was to this fortunate circumstance that they attributed their escape from any attack of fever.

Whether these rains, accompanied, as they mostly are, by strong wind, effect the good by mere mechanical dislodgment of the malarious poison, or whether, as Mr. Key states, the water decomposes the poison as it does cloacine, the matter is well worthy of investigation.

favour of the aggravation of scarlatina from the vicinity of choked drains and sewers, and the presence of animal miasms, such means should be put in requisition as will at all events modify such causes of ill, and certainly none would be more effectual than bodies of water thrown over them. It may not be in our power to inundate a whole district, as they do in Holland, but a drain running near a house may be disinfected; and if we find that scarlatina is endemic in certain places, which I have known it to be, these causes should not be overlooked, for with the animal poisons in particular, endemic may pass into epidemic maladies.

Dr. Marshall Hall has proposed the use of chlorine water externally and internally, as a prophylactic and a remedial agent.

I have seen it most extensively used in Russia, in the form of vapour in the apartments, aspersions over the bed-linen, and floors of the room; a solution at hand to wash the skin of those who have touched the patient, the same to rinse the mouth, and all with no avail, as far as stopping the progress of the disease was concerned.

If chlorine be ineffectual, it does not follow that no means remain of which we can avail ourselves. Two points demand our attention,—the possibility of counteracting the progress of the poison, when absorbed into the constitution, and the prevention of communication to others.

Hitherto we have failed in the first: we have not presented matter in such a form to the contagious fluid, as shall form an inert chemical combination; nor would that avail, if the disease were once formed, and the nervous system implicated. As regards the latter, there is more hope of success; solution will do much, but the propagation by fomites may perhaps be arrested by the same system of immersion as used in the plague. That the disease is communicated by clothing there are sufficient proofs.

It is, therefore, most imperative, that, when the disease breaks out in a family, the healthy children should be isolated, and no communication should be allowed between those who are in the sick-room, and the rest of the family. It would be well for all nurses to be provided with a long dress, which they might quit upon leaving the chamber. The linen of the patient should be soaked in water as soon as removed from the body, and when convalescence takes place, the patient should go through several baths, before communication with those who have never had the disease. As regards the rooms, it is of importance to make them red-hot, if possible, and, for this purpose, the doors and windows should be tightly closed, till the room has been subjected a sufficient length of time; then scouring and white-

All that applies to the plague, applies, I believe, to most contagious diseases, of which this is the most formidable.

It is a subject of constant inquiry, at what length of time may it be considered safe to approach a patient who has been affected with scarlatina?

There is nothing more unsatisfactory than the reply which can be given to such a question. One thing is ascertained, that the disease may be propagated by inoculation. It is a question of visible, tangible matter, that we have to deal with, and, as the epidermis is the chief seat of the disease, it is probable that as long as any of the old cuticle remains, it may retain part of its morbid qualities. Hence washing and scrubbing are of paramount importance in a prophylactic sense.

With respect to clothes, linen, &c., we propose heat or immersion, as in cases of the plague.

There is another question of importance which is difficult to solve—viz., how long the contagious matter may stick to the walls of a house?

These, sir, are questions, which are daily put to us by a public which is becoming daily more inquisitive, and what reply can we make?

I have alluded to a malignant form of scarlet fever, which I met with in Paris, where all the different species presented themselves in the same family.

In this case I could trace the infection to communication with a neighbouring house where the disease had raged two months previously. Unless, therefore, the furniture and walls of a room be not subjected to purifying processes, it is difficult to say how long this poison may lay dormant.

When the honour was conferred upon me by you of delivering these lectures, I had intended to take up the subject of morbid poisons upon a more extensive scale, and to introduce scarlet fever, to serve the purpose of illustrating their action upon the animal economy.

The time allotted me has not been sufficient to do that justice to the subject which it demands, and which is worthy of your patronage.

I could not in any case have compressed the subject in so dense a form as three lectures would afford.

Sufficient will have been gained from the few observations with which I have abused your patience, to convince you that it is to the chemical laboratory that I look to explain to us the various ways in which poisons act upon the system.

Till something like an atomic theory, a system of definite proportions, come to our aid, we must shelter ourselves, and seek

idiosyncrasy, epidemic influence, offer, to satisfy our inquiries. This idea, however, which you may look upon as morbid, has long haunted me, and has waited for the combination of causes, which has now presented itself, of assuming a sporadic form. I doubt whether it will take an epidemic character.

It must be allowed, that nothing can be more unsatisfactory than have been all attempts to unravel these mysteries; and, far from supposing that I have been able to untwist a link of the entangled chain, I must shelter myself under the maxim of Lord Bacon, "that it is easier to elicit truth out of error than out of confusion."

CONTRIBUTIONS TO MICROSCOPICAL MORBID ANATOMY,

*Selected and Translated from the German
Work of*

DR. JULIUS VOGEL, of Göttingen,
Entitled "Erläuterungstafeln zur pathologischen
Histologie."

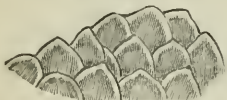
By W. S. KIRKES, M.R.C.S.L. &c.

CASE I.—*Pneumonia; grey hepatization, with incipient gangrene of the pulmonary tissue.*

A SOLDIER, aged 44, had suffered for a considerable time from pain in his left side, accompanied with cough, palpitation, and the expectoration of abundant greyish yellow sputa; hiccup supervened, and after lingering some days longer, the man died. Upon examining the body, very important pathological changes were found to have taken place in the left lung. Commencing from above, the upper lobe had a peculiar greyish green colour, and was emphysematous on its surface, numerous small air bubbles arranged in clusters immediately beneath the pleura being visible to the naked eye; also in the interior of this portion of the lung, the marks of emphysema were present. The pulmonary tissue itself appeared to the naked eye of a greenish grey colour, dotted over with small patches of black colouring matter. When viewed under the microscope, it presented numerous bubbles or vesicles of air, but scarcely any blood; the bundles of fibres composing the pulmonary tissue were very apparent, and of a greenish colour. When all the air was removed by washing, the pulmonary tissue presented nothing abnormal, with the exception of its greenish colour; the bundles of fibres were rendered very distinct, and their interstices quite free. The cause of the green colour of the pulmonary tissue was not discovered; whatever it was, it was

though it affected some parts more than others, producing patches here and there of a more intense green colour than the rest of the tissue; in no place could any granular pigment be discovered, by the presence of which the green colour might be explained. The emphysema of the pulmonary tissue was characterised by the presence of an immense number of air-bubbles, with a simultaneous diminution in the quantity of blood present; whether these bubbles or vesicles were the normal pulmonary air-cells considerably dilated, could not be determined. The tissue of the emphysematous parts was tough and leathery, and contained a tolerably large quantity of black colouring matter. Upon examining with the microscope those portions of the surface of the lung, where, immediately beneath the pleura, numerous air bubbles could be seen with the naked eye, it was observed very distinctly that these bubbles were contained within pulmonary cells. These cells had a roundish, somewhat pointed form, and were arranged together side by side, slightly overlapping each other, like so many tiles (vide fig. 20);

FIG. 20.



they were $\frac{1}{3}$ to $\frac{1}{4}$ of a line in diameter, being thus dilated considerably beyond their natural size. The above description applies to about the upper third of the superior lobe of this lung, in which all the above characters were observed, viz. dilatation of the air-cells, little or no blood, together with a greenish colour, and a tough leathery condition of the pulmonary tissue. The middle of the lobe possessed very different characters: it had a tolerably compact bran-like consistence, was of a greenish-white instead of a greenish colour, contained no air, and readily sank in water; in short, it constituted that condition to which the term grey hepatization is applied.

The line of demarcation between this condensed hepatized portion of the lung and the upper emphysematous part was very distinct, the transition from one portion to the other being quite abrupt. In the hepatized portion there were observed several pervious bronchial tubes, having a diameter about equal to that of a crow-quill; from these could be squeezed out a viscid mucous fluid, which, when examined under the microscope, was found to consist almost entirely of cylindrical epithelium cells, many of which were still adherent to each other, (vide Fig. 22.) Upon the addition of acetic acid to this

cells were rendered pale and transparent, so that the nuclei, which themselves remained unaltered, became very distinctly visible. From the fact of these epithelium cells being thus so perfectly unchanged from their natural condition, it would appear that the bronchial tubes lined by them were not in the least affected by the changes going on in the pulmonary tissue by which these tubes were surrounded, changes which were doubtless the result of inflammatory action. Upon examining portions of this condensed hepatized pulmonary tissue beneath the microscope, not a particle of air, and hardly a trace of blood, was discernible; it appeared entirely composed of an amorphous granular substance made up in great measure of roundish granulated corpuscles from $\frac{1}{30}$ to $\frac{1}{60}$ of a line in diameter (the majority being about $\frac{1}{30}$) which were intermixed with a finely granular pulverulent substance, and with small drops of fat. Upon treatment with acetic acid, these corpuscles became broken up, and their place was then occupied by numerous small irregular granules, many of which were seen clustered together into little heaps, each made up of from two to four component granules; around some of these clusters, a fine circular outline or areola was observed. It would appear from this that the mass in question consisted of degenerated pus. Between the pus corpuscles of which this mass was mainly composed, a few scattered granule cells were observed. Upon washing away the degenerated pus from those hepatized portions of lung, the normal fibrous bundles composing the pulmonary tissue came into view, and by long-continued washing almost all the meshes formed by these bundles became free. The exudation material was thus already converted entirely into pus. To all appearance the lower portion of the upper lobe of this lung had exactly the same characters as the middle portion; thus, it was perfectly condensed and solid, did not crepitate, and sank readily in water; it was of a greyish colour, and contained a large quantity of greyish white thickish fluid, which could be readily squeezed out: a microscopic examination, however, proved that it was essentially different to the middle portion. Thus, whilst in the middle portion, as described above, the granule-cells were mixed with the pus corpuscles in but a very small proportion, here, in the lower part, the proportion in which they existed was greatly increased, and towards the very lowest parts pus corpuscles were no longer to be seen, nothing but granule cells being discoverable. The results obtained so far in the post-mortem examination of this case, proved clearly that the formation of pus corpuscles, and of granule cells,

tant information concerning the mode of formation of granule cells was obtained, which may be comprised in the following conclusions:—1. That, in their early formation, granule cells commence as simple nucleated cells, containing at first scarcely any granules, but as they become more matured, the granules increase in quantity, and eventually the cavity of each cell becomes completely filled with them, and the cell assumes the appearance of a dark round mass of aggregated granules. In proof of this view, there were observed in this case cells in all the various stages of development, from the one extreme in which were very pale cells, with distinct nuclei, and containing but very few brownish granules, (vide Fig. 21, *a a*) to the opposite extreme, in which were granule cells perfectly formed, the cavity of each cell being completely filled with granules, (Fig. 21, *b b*)*

2. That the granules with which granule cells are filled are not confined merely to the interior of the cells, but may also be irregularly scattered or arranged in heaps external to them; for in this case, besides actual granule cells, there were also observed other granular heaps, the granules composing which differed in no respect from those with which the cells were filled: it can scarcely be supposed that these granules had escaped from burst granule cells, and had then arranged themselves into heaps, for the size of these heaps was often very considerable (Fig. 21, *c c*)

3. That the granular contents of the granule cells are in all probability composed of fat; for, both contained within the cells, and deposited external to them, there were observed all the transitional stages from ordinary small granules to distinct drops of fat, having a diameter of from $\frac{1}{400}$ to $\frac{1}{300}$ of a line.†

Besides granule-cells and pus corpuscles in the hepatised pulmonary tissue, there were also observed a few compact round, or spirally curved corpuscles, with a central depression, and marked with concentric striæ, (Fig. 21, ** ? fat). The pulmonary

tissue within which the granule cells were situated was unaltered from its original and healthy structure, but it contained neither air, nor blood, nor yet any amorphous exudation matter. After the granule cells had been washed away, the fibrous bundles of the pulmonary tissue appeared very distinct, and their meshes or interspaces were free.

It was in the lower lobe of this left lung that the most serious structural lesions were found; between it and the upper lobe there was no regular line of demarcation. Complete gangrene of the pulmonary tissue of this lower lobe had taken place, the substance of the lung being reduced to a pulsataceous chocolate coloured mass of a fetid, sweetish (süsslichen) odour. Upon examining a portion of this substance beneath the microscope, it was seen to consist of an amorphous granular powdery mass, containing many drops of fat; it resembled very closely a portion of gangrenous cellular tissue. The pulmonary tissue itself was found to be completely destroyed, being reduced to an amorphous granular mass of a yellowish brown colour; not a trace of the normal histological elements of the tissue of lung, neither blood, nor fibres, nor epithelium cells, could be seen. This completely gangrenous appearance was most evident towards the apex of this lobe; in the middle and towards the exterior of the lobe, the destruction of the pulmonary tissue was less marked: the tissue in these places was less of a chocolate or earth colour, being more of a reddish brown tint; it contained not a particle of air, but was filled in all its interstices with dissolved and decomposed blood, whereby it was reddened throughout; this blood no longer presented any blood corpuscles, but was in irregular grumous masses. Scattered here and there within the pulmonary tissue were found some crystalline particles; they had no determinate form, were not affected by water, but were soluble in acetic acid. After the blood was completely washed away, the tissue of the lung became tolerably distinct, and all its elements were easily distinguishable, but it was already softened, and was covered partly with irregular particles of various sizes (fat?) and partly with a fine powdery substance of a dark colour, so that it appeared as if strewed over with dust or soot. Between the pulmonary tissue in this condition, and that where it was completely destroyed by gangrene, all the intermediate stages were observed.

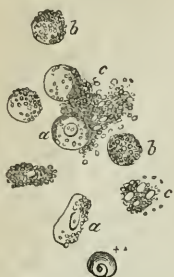
Fig. 21* illustrates the granule cells in their various stages of development as described above. *a a* shows the early stage in their formation, in which they are simple nucleated cells containing a few granules. *b. b.* shews them when fully developed into perfect granule cells. *c. c.* illustrates the

* [A different view to this, regarding the formation of granule cells, is entertained by Henle, who considers that in the first stage of their development a number of granules become aggregated together, and are retained in heaps by a gelatinous material, and that around each such heap, a cell wall gradually forms itself, and thus a perfect granule cell is produced. The pale nucleated cell with but few granules in its interior, which Vogel considers as the earliest stage of development, is regarded by Henle as a retreating stage in the metamorphosis, and in which, by the process of degeneration, almost all the granules have disappeared, the cell wall and the nucleus remaining.—See the Report on inflammation by Mr. Wharton Jones, Brit. and For. Med. Rev. July 1844, p. 272.—TRANSLATOR.]

† [The fact also of these granular particles being usually soluble in ether, favours the opinion

cells; besides small granules, these heaps contained also some distinct drops of fat.

FIG. 21.



At ** are represented some peculiar corpuscles, which were observed scattered between the granule cells. They were curved in a spiral manner, had a depression in their centre, and presented concentric striæ: some of them were round: possibly they were composed of fat.

FIG. 22.



Fig. 22 illustrates the cylinder epithelium cells of which the fluid compressed from the bronchial tubes which traversed the hepatized portion of the lung was chiefly composed. Some of the cylinders exhibit the nucleus contained about midway between the base and apex, others do not. At the free and broad extremity, or base of each of them, is observed a membranous appendage (*): may this be a vibratory membrane, upon which the movements of the ciliary processes attached to this free surface depend, or is it simply the outer membrane of the cell separated by incipient putrefaction?

CASE II.—Pneumonia in the progress of cure; tissue of the affected portion of lung filled with granule-cells.

A very aged woman was admitted into the Munich Hospital, suffering from pneumonia: the sputa were rusty, and she had other symptoms characteristic of the disease. Upon her admission numerous small crepitations were audible over the lower half of the right lung; later on, all respiratory sounds in this region ceased, and there was very marked dulness upon percussion. In a few days the pneumonia subsided, the sputa became very abundant, yellowish-white, and puriform;

crepitations became again audible over that portion of the lung where all respiratory sounds had previously been absent, and the resonance upon percussion improved. In spite of this improvement in the condition of the lung, however, the patient gradually sank, and died with symptoms of general debility and exhaustion. Upon examining the body, tubercles were found in the upper lobes of both lungs: the pulmonary tissue between these tubercular deposits was atrophied. The bronchial tubes generally were much dilated; the mucous membrane lining them was of a livid red colour. The lower lobe of the left lung was infiltrated with serum. The lower and middle lobes of the right lung were much condensed, did not crepitate, and sank completely in water. The tissue of these parts had a greyish-brown colour, and was dotted over with numerous black spots. The bronchi of these lobes were considerably dilated. The fluid with which the pulmonary tissue was infiltrated was of a reddish colour, and when examined under the microscope exhibited many blood corpuscles, (Fig. 23, a.), and a very large quantity of granule cells, (b), but scarcely any bubbles of air. Many of the granule cells were of considerable size, some being round, others oblong, and others again of an irregular form; they varied from $\frac{1}{10}$ to $\frac{2}{10}$ of a line in diameter. Neither by water nor acetic acid was any change effected in these cells, whilst the blood corpuscles were dissolved in both of these fluids. The condensed hepatized pulmonary tissue exhibited scarcely any air under the microscope: here and there some blood contained in vessels was seen: there was also observed scattered about, a large quantity of black colouring matter. The pulmonary tissue itself was almost universally beset with brown heaps of granule-cells, which were deposited in such quantities as quite to conceal the proper tissue of the lung, except in a few places here and there, in which the normal fibres of the pulmonary tissue could be discerned. When this condensed pulmonary tissue was washed with water in order to remove as much as possible of the blood and granule cells, it assumed the appearance of an imperfectly fibrous substance, but in which neither the fibres themselves of healthy pulmonary tissue, nor the meshes which they form, could be clearly discerned. Nothing else was brought into view upon treating the substance of the lung with acetic acid; on the contrary, the pulmonary tissue became shrivelled up, and was more or less destroyed. Ammonia acted upon it in an almost similar manner; but by this reagent it was rendered more certain than by acetic acid that the whole pulmonary tissue was made up of imperfectly formed fibres intimately woven together.

* This and the next figure are magnified 220

FIG. 23.

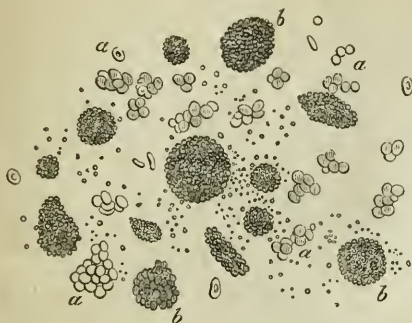


FIG. 24.

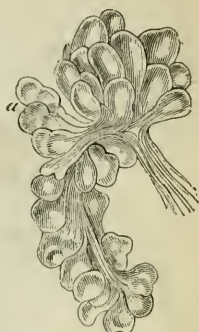


Fig. 23* illustrates the blood corpuscles and granule cells contained in the serum with which the inflamed lung was infiltrated. *a a* the blood corpuscles partly scattered, partly aggregated together; some preserved their natural appearance, with the saucer-like depression in their centre; the greater number were distended into globules. *b b* granule cells of different forms; they seemed as if composed simply of an aggregation of granules, and not as if each of these granular heaps was surrounded with a cell membrane: the component granules were not, however, dispersed on the addition of acetic acid to the heaps, which favours the idea of their being surrounded by a cell wall.

CASE III.—*Typhous pneumonia; no granule cells or pus corpuscles in the affected pulmonary tissue; pulmonary air-cells filled with exuded matter.*

A female, whilst lying-in, became attacked with typhus, of which she died: her lungs were especially affected, and during life she had all the symptoms of a person labouring under typhous pneumonia. Upon examining the body there were found numerous typhous ulcers in the ileum, chiefly affecting Peyer's glands, and having elevated edges. Both lungs were hepatized, the right especially. With the exception of its middle lobe, which was sound, the right lung was quite condensed, and did not crepitate; it was very heavy, sinking completely in water; it had a greyish-white colour, was rather soft and friable in texture, and its cut surface presented a granular aspect. Upon a microscopic examination there was scarcely any air or blood discoverable in this condensed pulmonary tissue; it was made up almost entirely of a granular amorphous colourless substance, without any trace of pus corpuscles or granule cells: in those places where this substance was softened and broken down, it appeared to consist of irregular granules and fragments of cells. Upon treat-

ment with acetic acid, this substance was rendered pale and transparent; the normal fibres of the pulmonary tissue came into view, with here and there some traces of imperfectly formed cells; but no where appeared the characteristic nuclei of pus corpuscles. Upon washing with water some bits of the condensed pulmonary tissue, many clustered heaps of roundish granules were brought into view: examined with low powers under the microscope, each of these clusters was found to consist of the terminal cells of the bronchial tubes, and all these cells were filled with exudation matter, (Fig. 24*). These cells were from $\frac{1}{4}$ th to $\frac{3}{4}$ th of a line in diameter, the greater number being about $\frac{1}{2}$ th. They were united to each other, and held together in clusters by fibrous bands (*b*.) Upon examining these fibrous bands with higher powers, they were found to consist in part of blood-vessels lined by very fine epithelium, and in part of the usual fibrous bundles of pulmonary tissue. The exudation material was not confined exclusively to the interior of the air cells. It was also poured out into the pulmonary tissue between and surrounding the cells. In order to render these groups of cells very clearly discernible, it was necessary to wash away with water the soft exudation material by which they were surrounded, or, what answered still better, to remove it by means of a soft pencil: in this way the preparation was made from which the above sketch was taken.

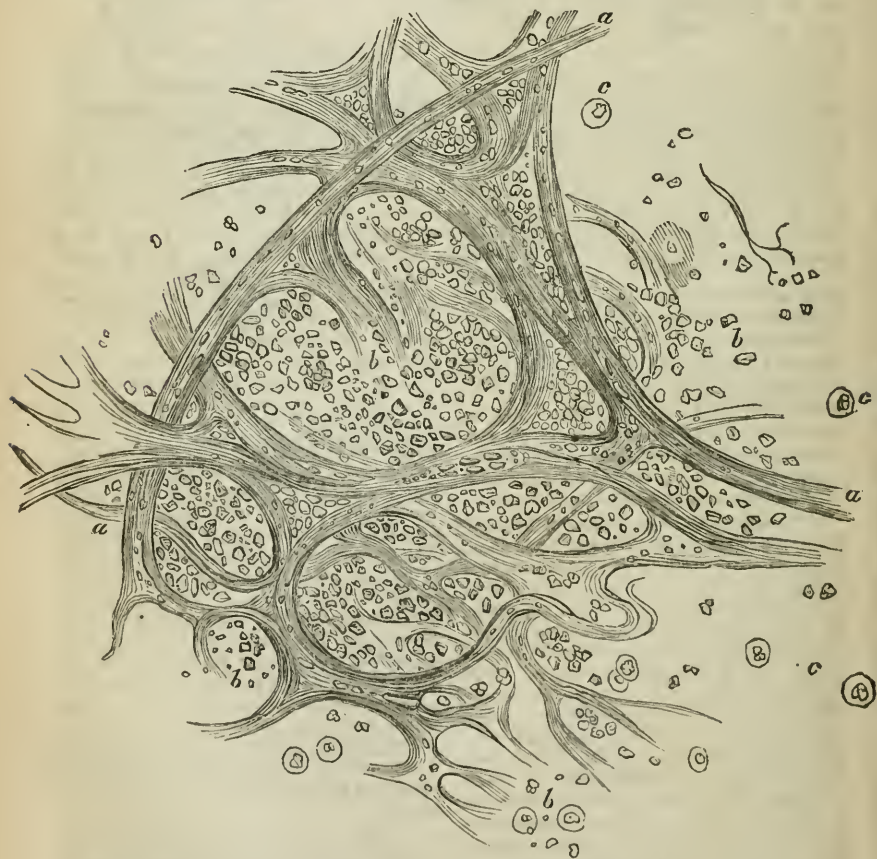
Pneumonia: pulmonary tissue infiltrated with pus, constituting the grey hepatization.

A woman, aged 38, who was affected with organic disease of the heart, died of pneumonia. Upon examining the body, the left side of the heart presented organic changes; the left auriculo-ventricular opening being much contracted, and the walls of the left

ventricle and the columnæ carneæ considerably hypertrophied; the right side of the heart was healthy. The lower half of the right lung had the appearance of grey hepatization; its tissue was condensed, contained no air, sank readily in water, and presented a greyish red colour. Examined under the microscope, this condensed tissue exhibited hardly any air, but a large quantity of blood. When washed, and the blood thus cleared away, the tissue was observed to be universally covered with an immense quantity of pus corpuscles, which were so abundantly

and thickly strewed that nothing but a mass of pus corpuscles could be seen on the pieces of tissue placed beneath the microscope. These pus corpuscles presented nearly the usual size and form. Upon treating the portions of tissue with acetic acid whilst under the microscope, the appearance of them became entirely altered; the pus corpuscles were completely dissolved with the exception of their nuclei, which, with the twisted fibrous bundles of the pulmonary tissue, now came distinctly into view (Fig. 25* a a.), the meshes or interspaces formed

FIG. 25.



by these fibrous bundles were seen to be filled with the nuclei of dissolved pus corpuscles (*b b.*) Towards the margin of the specimen, under the microscope, there were observed a few pus corpuscles, each of which still retained a fine half dissolved cell membrane through which its nucleus was visible, (*c c.*)

CASE V.—*Grey hepatization of the lung occurring in typhus—no pus corpuscles or granule cells found in the pulmonary tissue.*

In a stout, previously healthy man, who died of typhus, both lungs were found greatly altered from their natural appearance, being condensed, quite deprived of air, and sinking completely when placed in water.

peared of a greyish colour, was very firm, brawny, and somewhat granular, having exactly the characters peculiar to grey hepatization observed in ordinary pneumonia. The lower lobes of both lungs were loaded with blood. When examined under the microscope, portions of the condensed hepatized part of the lungs appeared to consist of a greyish-brown granular amorphous mass, deprived of air and blood, and containing traces of cell formation, though as yet in an imperfect stage. The fibres of the pulmonary tissue were indistinct, being covered by a granular cellular substance. Upon treating portions of this pulmonary tissue with acetic acid, they became more transparent, and the fibrous bundles entering into the composition of pulmonary tissue, came more distinctly into view; also deposited within the meshes of these fibrous bundles, some pale nucleated cells became distinctly visible. Genuine pus corpuscles and granule cells were entirely absent. The mode of cell formation which took place in the matter exuded into the tissue of these lungs accorded exactly with the process usually observed to occur in the material deposited in the lungs during typhus; it was also quite dissimilar to the process observed in acute tuberculosis.

Cases of pleural adhesion—microscopic examination of the tissue composing the adhesions.

CASE I.—In the case of a soldier who died of typhus, pleural adhesion of the left side was found. The lung was so firmly adherent to the costal pleura that it could not be separated without considerable difficulty. The tissue by means of which this firm adhesion between the pulmonary and costal pleura was effected had the appearance of an almost transparent colourless membrane. When examined beneath the microscope, this membrane was found to be made up of densely interwoven bundles of fibres; upon separating these bundles from each other, and drawing them out individually by means of a needle, they presented a wavy appearance, like so many hair-curls. Upon treating a portion of this membrane with acetic acid whilst under the microscope, almost all the fibres disappeared, a few only being left here and there, and these were more distinctly visible than before the addition of the acid (? nucleus-filaments of Henle). When thus acted on by acetic acid, a new and very beautiful structure was brought into view (Fig. 26)*. The appearance presented was that of a network which had its form given to it by numerous cell nuclei, disposed in regular rows. This network was in all probability made up of capillary vessels (a view favoured

by its regularly reticulated arrangement), and the nuclei were doubtless those of the epithelium cells lining these capillaries, brought into view by the addition of acetic acid, which had rendered the walls of these cells pale and transparent, probably had dissolved them, and thus allowed the nuclei to become distinctly visible. Besides being thus arranged in regular rows, many of these nuclei were also observed scattered irregularly over the portions of membrane examined.

Fig. 2



CASE II.—In another case of pleural adhesion, found in a soldier who died of typhus, and in which the adhesions were most marked at the apex of the lung, the tissue by means of which the surfaces of the two pleurae were adherent to each other appeared, to the naked eye, to be made up of fibres, of greater or less thickness, and possessing a bright satiny lustre. Microscopically examined, this tissue was found to be composed of perfectly formed fasciculi of fibro-cellular tissue, which had the same twisted or curled arrangement as noticed in the last case, and were disposed, for the most part, in a parallel direction; between these fasciculi there were also observed a few blood-vessels, which ran in a direction parallel to the fasciculi. Here and there, a few scattered cell nuclei (cyto-blasts) were seen, though not distinctly. In some places, the bundles of fibro-cellular tissue were arranged in a reticular manner, producing a very beautiful network.

* Magnified 220 diameters.

Original Communications.

OBSERVATIONS AND EXPERIMENTS ON THE

RAPIDITY OF THE PASSAGE OF SOME FOREIGN SUBSTANCES THROUGH THE KIDNIES,

AND ON SOME POINTS CONNECTED WITH
THE EXCRETION OF THE URINE.

BY JOHN E. ERICHSEN, F.R.C.S.

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It is my intention in this paper to record the results of some observations I have made on the excretion of the urine, and on the rapidity of the passage of foreign substances through the kidneys, in a case of extroversion of the bladder, that has been under my notice for some time past.

Before proceeding to a detail of these observations, I will, as briefly as possible, relate a few particulars of the case itself, which was in the first instance brought under my notice by my friend, Mr. Alford, at present the Resident Surgeon of the North Staffordshire Infirmary, who assisted me in some of the earlier experiments that I performed*.

Thomas Furley, æt. 13, a very intelligent, but sickly-looking lad, a fringemaker by trade, has been afflicted with extroversion of the bladder from birth. Immediately above the symphysis pubis, the abdominal parietes, as well as the anterior portion of the bladder, are deficient to an extent of about three inches in an horizontal, by two in a vertical direction. The inner surface of the posterior aspect of the bladder protrudes through the opening thus made, forming a tumor about the size of the half of a large orange. This tumor is of a vivid scarlet red, very sensitive to the touch, and covered by a viscid glairy mucus, which has invariably a strong alkaline reaction. The size of the tumor varies considerably at different times, being, in all probability, dependent in this respect on the condition of the abdominal viscera be-

hind it. At the under surface of the tumor, on either side, and close to the junction of its lower angles, with the abdominal parietes, are the orifices of the ureters. These appear when closed to be small irregularly oval depressions about a line in diameter, situated on the summit of a conical papilla of the mucous membrane. The orifice of the left ureter is placed more anteriorly than that of the right one, and can consequently be more readily observed. A probe may be passed up the ureters for several inches without any sensible inconvenience being produced. The penis, which is about an inch and a half in length, is affected with epispadias; the testicles are retracted within the inguinal canals, and the serotum, which is contracted, is constantly in an inflamed state from the dribbling of the urine over its surface.

I eagerly seized the opportunity that this case afforded of making some observations and experiments on several points connected with the secretion of the kidneys, about which some discrepancy of opinion exists amongst physiologists. These were:—1. The phenomena of the passage of the urine from the ureters into the bladder; 2. The length of time that elapses between the introduction of different substances into the stomach, and their appearance in the urine; and 3. Some points connected with the influence of exercise, food, &c., on the secretion of the urine.

The mechanism of the passage of the urine from the ureter on to the bladder in this case is as follows. A drop collects within the papillary termination of the ureter, which becomes somewhat distended; the orifice of this canal then opens to an extent of from two to three lines in diameter, and, as soon as it has allowed the drop of urine to pass, it contracts with a sphincter-like action. The distension of the lower end of the ureter before the drop of urine escapes is very distinct, and the relaxation of the orifice of the canal has the appearance of being occasioned by the accumulation of the drop of fluid that collects above it. The closure of the vesical termination of the ureter, after the escape of the drop of urine, is accompanied by a slight retraction of the papillary fulging of the mucous membrane on which it terminates, and the whole act resembles ex-

* A full account of the case, and a description of the apparatus used to collect the urine, will, I believe, shortly be given to the profession by my friend Mr. Norman, of Duchess Street.

actly the ordinary sphincter actions in animals.

When the patient had not taken any food or drink for twelve or thirteen hours, the quantity of urine that escaped was found to be very uniform on the different occasions that I examined it. Each ureter opened on an average about three times in the minute, and the small quantity of urine that escaped trickled over the under part of the mucous surface of the bladder, and joining with that from the opposite side, formed a large drop, which fell from the middle of the lower part of the viscus. About three of these usually fell per minute under the conditions specified.

Although the whole amount of urine that escapes under similar circumstances during any given time appears to be pretty uniform, yet the action of the same ureter is very irregular, two or three drops of urine sometimes flowing from it in rapid succession, whilst at other times a comparatively long interval elapses between the escape of any two drops. The two ureters do not open at the same time, but with an irregularly alternating action.

The effect of posture on the excretion of the urine is very marked. When Furley lays upon his back, the urine does not escape at all for a considerable time, and then dribbles out of the ureter in a very slow and gentle manner, without so distinct an opening and shutting of the end of the tube as when he stands upright. On assuming the erect posture after lying down for some time, the urine flows in a full stream from the ureters until these tubes have emptied themselves of the quantity that had collected in them. During a deep inspiration, as in yawning or coughing, or whilst straining at stool, the flow of urine is suddenly increased, and the fluid then escapes in a small stream, or in several large drops, in rapid succession.

The urine was invariably acid, usually very strongly so, and the specific gravity of that which was contained in the Macintosh bag, that he wore to collect it, varied on the different occasions that it was examined, from 1021 to 1029.

That certain substances, after being taken into the stomach, are very rapidly absorbed into the circulation, and are again secreted unchanged by

the kidneys, is a fact that is well known to every one. There is, however, much difference of opinion amongst physiologists as to the shortest time required for this absorption and secretion. Mayer states, as the result of his experiments, that, on injecting a solution of prussiate of potass into the lungs, it could in eight minutes be detected in the urine. Westrumb, after dividing the ureters of animals, and fixing tubes in them so as to collect the urine as it flowed, detected the same salt in this fluid two minutes after its introduction into the stomach. Whereas Stehberger, who instituted experiments with reference to this question, on a boy who had *inversio vesicæ*, did not detect the presence of this salt in the urine until after a lapse of sixty minutes from the time it was swallowed. It will be seen by the experiments that will immediately be detailed that these different results can easily be reconciled with what actually occurs.

The substances that I experimented with were the yellow Ferrocyanuret, or Prussiate of Potass, Infusion of Galls, of Rhubarb, of Madder, of Uva Ursi, and of Logwood; the Citrates of Soda and Potass, the Tartrate of Soda, and the Acetate of Potass. I should have increased considerably this list of substances experimented on, had it not been that Furley refused to take several that I much wished to have made observations upon, and, indeed, exhibited an extreme reluctance to take those that I did experiment upon; a reluctance that could only be overcome by bribing him according to the more or less disagreeable taste of the substance given.

The experiments on the Prussiate of Potass, the Infusion of Galls, and of Uva Ursi, were all performed in the same manner; namely, by receiving each drop of urine as it fell from the under surface of the tumor, or from the ureter, in a glass containing a solution of Persulphate of Iron. Those with Rhubarb, by collecting the drops of urine in a dilute solution of potass, and those with the citrates, tartrates, and acetates of potass, by testing it at regular intervals with litmus or turmeric paper. The urine was in these experiments most generally collected from the left ureter, as being most convenient, both on account of the extre-

mity of this tube being turned somewhat more forwards than that of the other, as well as from the position in which the boy used to stand, rendering it more easy for me to collect accurately each drop as it fell.

The following is a concise account of some of the experiments that were performed upon the boy Furley. The general results have been arranged in a tabular form for convenience of reference. The experiments were for the most part performed during the months of August, September, and October last, and a few were repeated in February of the present year.

EXP. 1.—Breakfasted, at 7 A.M., on meat, potatoes, and bread, without any drink. At 9h. 10m. drank a solution of 20 grains of Prussiate of Potass in 4 ounces of water. At 9h. 22m. the salt appeared in the urine.

EXP. 2.—Breakfasted, at half-past 9 o'clock, on bread, butter, and coffee. As nearly as possible four hours after he had finished this meal, he drank a solution of 40 grains of Prussiate of Potass in 4 ounces of water. In two minutes the salt could readily be detected in the urine that flowed from the left ureter.

EXP. 3.—Breakfasted, at half-past 8 o'clock, on half-a-pint of tea, with bread, butter, and mutton. At 10h. 5m. he drank a solution of 40 grains of Prussiate of Potass in 4 ounces of water. At 10h. 11½m. the salt appeared in the urine.

EXP. 4, 9h. 15m. A.M.—Has not taken any food or drink since about 10 o'clock last night, when he had some potatoes for supper. At 9h. 45m. drank a solution of 40 grains of Prussiate of Potass in 4 ounces of water. In two minutes the salt was distinctly passing from the left ureter. During the day the urine was tested at intervals of from three to four hours, and found to contain the salt. On the following morning it was tested at 8 A.M., and again at 9 A.M., at both of which periods the salt was passing, though in but very small quantity. At 10 A.M., when it was again tested, no trace of the salt could be detected. It had therefore continued to pass for at least 23¼ hours.

EXP. 5, 9 A.M.—Has not had any food since last night, with the exception of a very small piece of dry bread, about two hours ago. At 9h. 15m. drank a solution of twenty grains of

the Prussiate of Potass in 3 ounces of water. In as nearly as possible one minute, the urine from the left ureter gave most distinct indications of the presence of the salt, and continued to do so until half-past 9 o'clock, when he breakfasted on three thick slices of bread and butter, and a pint of tea. On examining the urine again at 9h. 50m. there was no appearance of the salt. At 10 A.M. he took 20 grains more, dissolved in the same quantity of water, and in less than a minute and a half it reappeared in the urine; which fluid continued to furnish evidences of its presence until 2 P.M. on the following day—a period of twenty-eight hours from the time he first took the salt.

EXP. 6.—Dined, at half-past 1 o'clock, on potatoes, and at half-past 6 had about a pint of tea and some bread and butter. At 6h. 54m. drank a solution of 30 grains of Prussiate of Potass in 4 ounces of water; the salt did not make its appearance in the urine until 7h. 10m., sixteen minutes after it had been taken, and then continued to pass off for nearly the whole of the following day.

EXP. 7.—Dined at 2 P.M. on plum-pie. At 6h. 15m. drank a solution of 40 grains of the Prussiate of Potass in 4 ounces of water. At 6h. 17½m., two and a half minutes after it had been swallowed, the salt began to pass, and was still doing so at 6h. 15m. on the following day—twenty-four hours after it had been taken.

EXP. 8.—Dined at half-past 1 o'clock. At 7, had a pint of tea and some bread and butter. At two minutes to 8 o'clock, drank a solution of 40 grains of Prussiate of Potass in 4 ounces of water. At 8h. 12m., fourteen minutes after it had been taken, the salt began to pass.

EXP. 9.—At a quarter past 9. breakfasted on about a pint of tea, and several slices of bread and butter. At 9h. 32m. immediately after he had finished his meal, he drank a solution of 40 grains of Prussiate of Potass in 4 ounces of water. The salt did not make its appearance in the urine until 10h. 9m.—twenty seven minutes after it had been taken.

EXP. 10.—At half-past 1, dined heartily on bread, mutton, potatoes, and water. At 1h. 46m. drank a solution of 40 grains of Prussiate of Potass in 4 ounces of water. The salt made

its appearance at 2h. 25m., thirty-nine minutes after it had been swallowed.

On analysing these experiments, we find that the earliest period at which the Prussiate of Potass made its appearance in the urine was about one minute after it had been swallowed; and that

the longest time that elapsed before it could be detected was 39 minutes. The reason of this difference in the rate of the passage of the salt through the system will, I think, on referring to the accompanying table, be found to be tolerably obvious.

TABLE I.—EXPERIMENTS WITH PRUSSIATE OF POTASS.

Number of Experiment.	Quantity Taken.	When first appeared in Urine.	When last Meal taken.	Nature of last Meal.
1	20 grains	12 minutes	2 hours	Meat, potatoes, and bread
2	40 "	2 "	4 "	Bread and butter, and coffee
3	40 "	6½ "	1½ "	Mutton, bread and butter, and tea
4	40 "	2 "	11½ "	Potatoes
5	20 "	1 "	11 "	
6	30 "	16 "	24 minutes	Bread and butter, and tea
7	40 "	2½ "	4¼ hours	Plum-pie
8	40 "	14 "	1 "	Bread and butter, and tea
9	40 "	27 "	2 minutes	Bread and butter, and tea
10	40 "	39 "	2 "	Mutton, bread and potatoes.

On looking over the tabular results of the experiments made with the Prussiate of Potass, we shall find that the rapidity of the absorption of this salt by the stomach, and its appearance in the urine, were connected with, if not dependent upon, the condition of the stomach at the time at which it was taken. Thus, in Experiments 2, 4, 5, and 7, the digestive process being finished, and the stomach empty, the salt could be detected in the urine at periods varying from one to two and a half minutes after it had been swallowed; this very brief interval of time sufficing for its absorption by the stomach, its circulation through the system, its secretion by the kidneys, and its excretion by the ureters. Whereas in Experiments 1, 3, 8, 6, 9, and 10, in which it was swallowed respectively 2, 1½, and 1 hour, and 24, 2 and 2 minutes after a meal, it required periods varying from 6½ to 39 minutes for its passage from the stomach to the kidneys. And although the longest time that intervened between taking the meal, swallowing the salt, and its appearance in the urine, did not bear an equal proportion in all the experiments, yet, on allowing for the difference in the size of the meal, the condition of the system at the time, and for other modifying circumstances, the correspondence appears to be sufficiently close to enable us to deduce the inference that the rapidity of the absorp-

tion of the Prussiate of Potass was dependent on the condition of the digestive process at the time it was swallowed; being less when the stomach was full, and proportionately greater when that organ was empty.

[To be continued.]

NEEDLE IN THE GALL BLADDER. BY J. ALLEN TEBBETS, M.D.

A BOY, two years of age, who had previously been remarkably healthy, was attacked with abdominal disease, the exact character of which it is impossible to learn, so imperfectly is the case recorded, but which terminated fatally in about ten days. On examination after death, the stomach and small intestines shewed appearances of congestion, with slight inflammation. The spleen, pancreas, kidneys, and bladder, appeared perfectly normal; the liver was nearly twice as large as natural, highly congested, and also shewing some appearances of inflammation. The gall-bladder was distended, to more than twice its original size, with very dark-coloured bile, and contained a common sewing needle, highly polished, about one quarter part of its length (the pointed extremity) being gone. There was no appearance of the needle being corroded, the point merely shewing signs of recent fracture. The inside coat of the gall-bladder was completely disorganised, from the inflammation which the needle probably produced. When or how the needle came there is altogether unknown.—*Boston Med. and Surg. Journ.*, and *American Journ. of Med. Sciences.*

MEMOIR ON THE

SPONTANEOUS COAGULATION OF
VENOUS BLOOD IN CACHEXIA,
AND IN CHRONIC DISEASES,

PRINCIPALLY PHTHISIS AND CANCER*.

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Translated for the London Medical Gazette

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[Continued from p. 318.]

CHAPTER II.—*Anatomical Characters.*

IN order that my readers may understand the whole subject, I purpose to consider the following propositions:—

1. The seat of the change.
2. The condition of the coagulated blood.
3. The change in the parietes of vessels in connection with the clots.
4. The changes in the adjacent parts, and especially those of lymphatic vessels.
5. The condition of the cellular tissue, and the disposition of the collateral veins, which have not been obliterated.
6. Lastly, the condition of the organs generally affected in diseases of the venous system.

The seat of the change.—The coagulation of the blood is always partial; it cannot take place in more than a certain number of vessels without so affecting the circulation as to endanger life. But this has never been known to occur. It takes place in the deep veins of the upper and lower extremities; more especially, however, in the pelvic vessels, and more rarely in those of the neck and head.

I may here mention, as it is one of the cases in the preceding chapter confirmed by a case related by Abercrombie, in which obliteration of the sinuses of the dura mater was found in the body of an infant, previously cachectic and worn out by suppurative fever resulting from caries of the internal ear. Coagulation of the blood has been also observed in the pulmonary arteries and hepatic veins. Yet, as in these cases there was a change either in the lungs or liver, the coagulation might possibly have resulted from inflammation communicated by contiguity, and could not be referred to the influence of the cachexia. I think it proper to allude to these facts, yet without attempting at

present to make any application of them in support of my proposition.

The coagulation of the blood almost always takes place in the lower extremities, being rarely, and as it were by exception, found in the veins of the upper extremities, neck, head, or internal organs.

Of the 51 examples of spontaneous venous obliteration, exclusive of those occurring after parturition, 44 occurred in lower extremities, from the inferior cava to the tibial veins: one in the superior cava and veins of the neck and arms; one in the veins of the neck, arms, and lower extremities at once; one in the sinuses of the dura mater; two in which the destruction was seated in the pulmonary artery; and 2 in which it existed in the hepatic veins. I may infer, then, that coagulation, with very few exceptions, takes place in the lower extremities. I have, however, seen many exceptional cases, and have recorded them in the preceding chapter.

When the deep veins are obliterated, the circulation is carried on by those which are superficial. When both classes of veins are obliterated, there are then vessels of a third class, which, with the capillaries, serve to establish the collateral circulation. This sometimes renders the skin of the limbs livid and black. The superficial veins alone are rarely filled with these clots; but this may be so, and then the œdema in the cellular tissue is less considerable.

The vessels affected are nearly all at a distance from the disease on which the cachexia depends, so that there is no immediate relation, either by vessels or contiguity, between the obliterated veins and the diseased organ. Thus, the pulmonary arteries are never affected in tubercular phthisis, but, on the contrary, the veins of the inferior extremities. The same holds good in cancer of the stomach, where we do not find the neighbouring veins affected, but rather those of the arm and leg.

This is an important anatomical fact: it shews that in the majority of cases the venous coagulation occurs spontaneously, and does not depend on the irritation transmitted to the affected veins by the diseased organs; for in such cases, the clots would reach in a continuous line from the distant part to the diseased organ. They ought, for example, to extend from the veins

of the leg to those of the thigh, and then to those in the neighbourhood of the lungs. The communication, then, between the obliterated veins and the diseased organ is of rare occurrence, but yet it has been sometimes observed. Thus, I have traced, in cancer of the uterus, the irritation from the veins of or near that organ to those at the lower part of the leg. If the coagulation of the blood in the veins of the extremities is rarely connected with the change in the organs from whence the hectic fever and general cachexia arise, it does not resemble those obliterations which are found around a diseased organ.

We cannot examine necroscopically a case of cancer, wherever it may be situated, without finding clots more or less numerous, and in every stage of transformation, in the adjacent veins. This peculiarity gives rise to a general error. At a certain time, the venous clots undergo ordinary discoloration, assume a greyish appearance, and are occasionally reduced to a greyish-white pulp, resembling in colour cerebral matter, so that it might be imagined that encephaloid matter had been developed in the brain. This is, I repeat, an error, as cancer finds no admission into veins, unless by the destruction of their walls—though cancer is not the only affection in which these small venous clots are so limited. It has also been observed in phthisical lungs around tubercular masses. These clots are common in cows; and M. Rayer has noticed their transformation with the greatest care.

The extension of the clots is less variable. Sometimes they are found in one only of the lower extremities, and when they extend to the inferior part of the vena cava, they pass to the other. At other times they commence in succession on either side at the lower part of the leg, reach the thigh, and stop at the bend of the groin without extending to the common iliacs. Occasionally they are observed in the axillary vein, in the veins of the arm and forearm, and in those at the back of the neck. This is an important disposition with regard to the clots. It is such as would easily serve to establish collateral circulation. The veins obliterated are always large; indeed, the change is arrested at the mouths of the smaller branches. In the lower extremities, there is no obstruc-

tion in the veins of the foot, nor of those of the hand below the metacarpal veins. Hence the smaller veins, from this permeability, and from their connection with the capillaries, are enabled to continue their functions, and, notwithstanding the great obstruction, to carry on the circulation. Otherwise, if the obliteration were to reach the capillary veins, such an arrest, would ensue in the corresponding arteries, that the red blood would soon coagulate, and the tissues become mortified.

Clots.—The product of the coagulation of the blood, *i. e.* the clots, present different appearances according to the time which has elapsed since their formation. They ought to be examined at every stage of their existence.

First stage.—When first formed they are homogeneous, black, and similar to the clots formed in the heart at the moment of death. Fragments of fibrin are found here and there of a yellowish or greyish white colour. They break down under the finger with ease; in consistence, like the clots in the heart, they resemble currant jelly. In form they are elongated and cylindrical, resembling the vessels which contain them, but when produced in veins furnished with valves they occasion considerable enlargements. They do not adhere to the walls of the vessels, which, at this stage, are unaffected, but at a later period, as will be hereafter shown, the internal coat of the vessels becomes affected.

Thus this coagulation occurs in some manner spontaneously, and without the occurrence of inflammation of the venous walls. If there be inflammation of the vein, it is only consequent on and perhaps excited by the presence of the clot; and hence the adhesions, which we find at a later period.

After these anatomical characters, confirmed so often in our necroscopic examinations, in which we have observed clots of all ages at one time formed almost in a moment, at another in eight days, fifteen days, a month, and even more, we have considered it right to trace the history of the coagulation of blood, before describing adhesive phlebitis. The solidification of the blood is here the principal phenomenon, and the venous obliteration consequent on the adhesion, or the adhesive phlebitis is only secondary. The walls of the

veins are then white, thin, transparent, without softening or capillary injection, whilst more gradually they become thickened, and assume the appearance of arterial tunics.

Second stage.—At a period a little more advanced, viz. from about the fifth to the eighth day, the clots gradually lose their colour and size, acquire greater consistence, and become adherent to the walls of the veins. The black colour disappears at various points, sometimes on the surface, sometimes in the centre. The colouring matter is absorbed, and the clot consists of a reddish and even a perfectly white fibrin. This change does not take place uniformly throughout the clot, but rather, as stated, at different points.

The diminution of the size of the clots bears some relation to their loss of colour. The fibrin loses the colouring matter and serosity; it no longer fills the cavity of the vein. At the point of junction between veins, the clots remain for a longer time infiltrated, and are at once larger, softer, and of a deeper colour.

The consistence of the clots varies much. At first it is very slight and uniform throughout; then resembling broken down currant jelly; but it is changed remarkably within a few days. The consistence increases insensibly according as the colouring matter and serosity are absorbed. The surface is often consistent, while the centre is soft, diffuent, and formed of a reddish grey thick pulp, similar to bloody pus. The consistence is greater at certain points, especially where the vein admits no collateral branches; but, on the contrary, as the points of communication, it is less marked. Lastly, it is relatively less after a given time in the larger than in the smaller veins.

After the clots have been formed some days, they contract adhesions to a great or less extent to the internal coat of the veins. This agglutination leads to a very thin deposit of coagulable lymph, which is more or less solid; but sometimes so strong, that the conglum cannot be entirely separated from the vessel.

The venous walls undergo a slight change. There is no appearance of redness, injection, softening, nor adhesion to adjacent tissues: they are manifestly thick, and resemble arteries. This

change, although evident, may escape attention; in order to discover it, the affected vein ought to be cleaned, and compared with the one in the opposite limb, if healthy; when the difference of texture is most evident. I have made this observation at La Charité, under M. Rayer, on the veins of a female, who had died of chronic pyelitis, (inflammation of the pelvis of the kidney), in a state of confirmed cachexia, and in whose body the blood was coagulated in the veins of the lower extremity. Further, this is the only change in the walls of the veins, and even this is secondary to the coagulation of the blood.

It would be difficult to determine day by day the conditions of the changes going on in the venous clots and their envelopes. I feel that it is impossible to set any limit on these changes. In relation to the anatomical characters of venous coagulation, I have spoken of a first stage, lasting for some days, during which the coagulation takes place without interfering with the changes in the vein. In the second, which lasts for one or two months, I have considered the modifications which take place in the tissue of the vein, together with the internal changes of the clots. And it will remain for me now to trace these clots to their disappearance; although this, the third stage, is quickly terminated by the death of the patient. These clots are seldom found of longer duration than two months. Nevertheless, we must speak of the third stage, in which nature favours the establishment of collateral circulation.

Third stage.—When the venous coagulation is of longest duration, the clots are of a yellowish white tint, very tough, elastic, occasionally adherent to the walls of the vessel, which is then obliterated; occasionally free in the interior, having connection with the inner coat, at least by little filaments, the last vestiges of newly formed capillaries, which have been obliterated. Unfortunately, we rarely have an opportunity of witnessing these changes. The bridges between the clot and the inner membrane resemble those between opposite serous surfaces. But these are at first produced by a capillary vessel, of new formation, filled with blood, which is moveable by pressure, and then converted into

fibrinous bands. We see this continually in pleurisy and peritonitis, where the filaments are from 2 to 7 or 8 centimeters. The same applies to the bridges between the clots and the venous coats. The phenomenon is not so evident, as it takes place in a very small space; but this is the only difference.

At a still later, but by no means definite period, the fibrin of the clots, completely blanched, and resembling cartilage in appearance and density, is infiltrated with calcareous matter, and presents here and there very hard earthy patches. This change is generally termed ossification, but I prefer the word petrification.

Collateral circulation.—The mechanism of the establishment of the collateral circulation in this affection does not differ from that which takes place in phlegmasia dolens of puerperal women. The phenomena are absolutely the same; but are subordinate to the anatomical seat of the obliteration.

When the coagulation exists in the deep veins of the lower extremities, the collateral circulation is effected by means of the large superficial veins, which dilate and become apparent beneath the skin. The number and size of the superficial veins is in proportion to the degree of obstruction to the circulation in the deep veins. They empty themselves into the superficial veins of the belly, chest, and thence through the medium of the intercostals into the vena azygos, of which I have recorded an example in my essay on phlegmasia dolens. M. Bidault has also observed an instance.

When the coagulation exists both in the deep and superficial veins,—the veins of the third class, with the capillaries, carry on the circulation, and become apparent on the surface of the skin. I have elsewhere recorded a very remarkable example, and I have recently observed two others, one under M. Delarrouque, in a phthisical subject, where the left thigh was violet-coloured, and entirely covered by a well developed network of veins, with large meshes; and the other under M. Rayer, in a man affected with organic disease of the heart. The latter had an obliteration of the superior cava extending to the axillaries, deep jugulars, humeral, and lastly to the deep veins of the fore arm. The upper half of his body became of a violet colour, and the

skin was furrowed, especially over the chest, by the much enlarged superficial veins, and here and there were observed masses of dilated capillaries, forming blackish spots, resembling venous erectile tissue. It is through the medium of these vessels that the circulation is continued in persons affected with this complaint.

Such are the phenomena which I have noticed in relation to the complication of the collateral veins, when the large venous vessels are obliterated. They are all the same, only modified according to the seat of the coagulum.

Secondary changes in organs or tissues, produced by venous coagulation.—The cellular tissue is most affected in venous coagulation; this fact was determined by M. Bouillaud, who has shewn that there is a rapid tendency to serous infiltration of the cellular tissue by serosity, wherever there is an obstruction to the venous circulation. This infiltration always exists in the change of which we are now speaking. It is observed in the deep seated parts, in the intermuscular cellular tissue, in the superficial parts, beneath the skin, and sometimes in all these parts at once. It always bears a relation to the extent of the coagulation of the blood, and increases in proportion as the latter extends to a greater number of important veins.

Infiltration of the cellular tissue differs but little from the serous effusion into the cavities of the pleura or peritoneum. Ascites is observed in connection with œdema of the lower, and hydrothorax with œdema of the upper extremities. The one is common, the other very rare. This latter condition was observed in the patient of whom I have spoken, in regard to the establishment of the collateral circulation. This man had had during the whole of his residence in the hospital very manifest œdema of the lung, and subsequently well-marked hydrothorax on the left side. The liquid eventually disappeared.

The lymphatic ganglions in the neighbourhood of obliterated veins are always red and swollen, but without softening or suppuration. The lymphatic vessels appear to be unaffected.

The viscera, with the exception of the lungs, undergo no prejudicial change from this coagulation of the blood; but the œdema of the lungs ought to be referred to the general

rous infiltration, and not, properly speaking, to any organic change.

There does not exist, then, as far as appears at present, any well-marked visceral change consequent on venous obliteration. This is an important fact. We see, indeed, on one side, the coagulation of venous blood taking place without a trace of inflammation in the vein, or appearance of suppuration; and on the other side we see the viscera exempt from these changes, or purulent deposits, which so frequently accompany phlebitis.

Now, in respect to the visceral changes, whence arise the depraved diathesis, the hectic fever, and the cachexia, under the influence of which these coagulations occur, it is sufficient to point them out without giving the details of each. What signifies this or that change, seeing that we ought to trace it to that condition from which the cachexia and marasmus spring? The marasmus and cachexia are entirely the same. We find, in the bodies of those patients who have died with venous coagulation,—cancers of the stomach, liver, uterus, &c., the varieties of tubercular phthisis, affections of the heart, of which we have recorded two examples, disease of the kidney, or suppuration of that organ, and other lesions, which lead to the slow absorption of pus.

CASE OF

DEATH FROM INJURY TO THE SKULL—AIR FOUND BENEATH THE DURA MATER.

By THOMAS HAWORTH, MD. Ed. M.R.C.S.

THE notes of the following case, perhaps the first hitherto noticed, were kindly furnished me by my friend, Mr. Sharp, House Surgeon to the Bolton Dispensary. There were present at the post-mortem examination, Mr. Denham, Mr. Ferguson, and myself.

—, æt. 28, was injured by a quantity of earth (several tons) falling upon him while stooping, from a height of about five yards. Countenance was pale and anxious; forehead and left eyelid much bruised; blood flowing freely from right ear and nostril; fracture of the right humerus, and compound fracture of the left tibia; pulse just perceptible; breathing short

and laborious: he is quite sensible, and complains of his back. He died about an hour after the injury.

Examination of the head, eighteen hours after death.—Forehead exhibits marks of violence; scalp easily separated over that region, there being effused blood; skull moderately thick. The calvarium being removed, underneath the dura mater was found a quantity of air, amounting to four or five cubic inches, extending over at least the anterior third of the surface of the brain, and disappearing on steady pressure with both hands. On removing the brain it exhibited no laceration; its structure was healthy; the anterior lobes appeared to be compressed at the base; fluid blood was effused beneath the dura mater, over the cerebellum and posterior lobes of the cerebrum, inferiorly, extending into the fissures; sero-sanguineous fluid in the lateral ventricles; anterior portion of the cerebrum pale as far as the air extended; a rent appears in the dura mater, over the sphenoid bone, in front of the sella tureica. Removal of the dura mater from the base of the skull shows a fracture extending from near the external angular process on the left side of the frontal bone through all the bones to the point on the right side of the occipital protuberance, on a level with it, and about an inch distant, the internal table being more extensively fractured; the right petrous bone fractured through twice, and the carotid canal injured; æthmoid bone fractured, and spicula loose.

I may add, that when the dura mater was exposed, it was distended like a bladder, and felt elastic, so as to leave no doubt of the existence of air underneath. To the best of my recollection the upper surface of the anterior lobe was also depressed.

It now becomes a question how the air found its way into the skull. It must have found its way either by the fracture of the æthmoid bone, or from the pharynx, by the fracture at the base of the skull; for in these two places the external air might have access to within the cranium. The latter situation is the most likely, as a rent was observed in the dura mater, opposite the sphenoid bone, through which the fracture passed, and which is situated over the pharynx. But we must inquire further, and ascertain by what

power the air passed from the pharynx through the fracture of the base of the skull, and through the rent of the dura mater to the upper surface of the anterior lobe of the brain, so as to blow up the overlying dura mater like a bladder. The air under ordinary circumstances could not force its way.

In the MEDICAL GAZETTE, Feb. 25th, 1842, and in some of the subsequent numbers, I have endeavoured to point out the physical effects of shocks upon the head. To this subject I will revert.

In respect to its physical circumstances, we may look upon the head as being in the condition of a globular vessel, provided with a neck, filled with water, and turned upside down,—the pressure of the atmosphere preventing the water from running out,—so the head is a bony cavity, filled with brain, blood, and serum, having outlets chiefly at the base for the transmission of nerves and vessels; it is through means of these outlets that atmospheric pressure finds access to the interior of the skull. This pressure under usual circumstances retains the brain *in situ*, and causes the surface of this organ to press upon the interior parietes of the skull with a force equal to fifteen pounds to the square inch. Thus guarded by a strong bony spheroidal case, and retained *in situ* by such an amount of force, one would think that the brain was secure from displacement; but it is not.

It sometimes happens that this atmospheric pressure is overcome. When rapid movement of the head is suddenly arrested, or suddenly commenced, as by a fall or a blow, the tendency of matter to continue in the same state, whether of rest or motion, otherwise *vis inertiae*, will produce the following effects:—In the case of a blow, the brain will have a strong tendency to remain in the same place, and the cranium to proceed onwards in the direction of the blow; in the case of a fall, the reverse will take place at the moment of its being arrested, the brain will tend to continue the fall, after the cranium is at rest. We will endeavour to ascertain the effects of this disagreement between the brain and its protecting case.

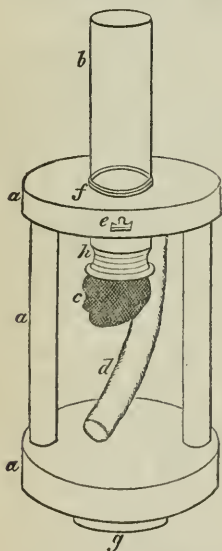
We must bear in mind, that, though the substance of the brain itself is incompressible, or nearly so, yet that its

volume may be diminished to a considerable extent, when by any means the blood or serum is expelled from its vessels and cavities. When, therefore, after the completion of a fall, *i. e.* after the cranium is at rest, the brain, through the operation of the *vis inertiae*, still tends to fall with an acquired momentum, its surface recedes from the parietes of the skull, and there leaves a vacuum—the atmospheric pressure upon the outlets of the skull being overcome, the blood and serum of the brain expelled, and its volume diminished. If it should sometimes happen that no actual vacuum is formed, there will always be a tendency to one.

The idea of a vacuum being formed within the head is startling, and liable to ridicule; but let us examine the matter more particularly. The momentum acquired by falling bodies is known to be immense. Some notion of its force may be gathered from the calculation of Mr. Airy, which I extract from the Penny Cyclopædia, article "Pressure." "If a column of iron three inches high be let fall on an anvil two feet high, from a height of eight feet, the compression of both hammer and anvil is about one-thousandth of a foot, and the pressure exerted at the moment when it is greatest, is that of a quiescent column of iron similar in its action, but of no less than 4000 feet high." Thus we see, by suddenly arrested motion, the virtual weight of a body is enormously increased. According to the calculation of Mr. Airy, the column of iron, *i. e.* the hammer, only three inches long, possess at the moment of impact after a fall of only six inches (for in the height of eight feet, the height of the anvil, two feet, is included), a force equal to 85 atmospheres; for 4.7 feet of iron is equal to a column of the atmosphere, therefore 4000 feet are equal to 85 atmospheres. But this great force exists only for a moment, that of impact; if it continue any length of time, the force is diminished in proportion.

Since sending my first communication on this subject, I have made some experiments to show how far the inertia of matter might be made available in producing a vacuum. I fixed a two-ounce bottle in a frame in such a manner that it might be allowed to fall

from a height upon the ground with the mouth downward, without breakage. To the mouth of the bottle was adapted a valve of sheet lead, or copper plate, covered with wash-leather, and held fast to its place by a thin slip of India rubber passed tightly over it, and attached to the frame. The bottle is filled with water, the valve applied to its mouth, previously ground quite flat, and the India rubber slipped over it, and the apparatus is then allowed to fall from any height. I should mention that the apparatus is weighted, in order that it may fall in the direction of the length of the bottle. On examination of the bottle after a fall, we shall perceive a vacant space above the surface of the water. That a vacuum exists is proved by plunging the



a, a, a, Frame-work made of wood.

b, Bottle.

c, Valve.

d, Slip of India-rubber.

e, Nail to which India-rubber is attached, after being brought upon valve *c*.

f, h, Piece of strong calico, made to fit the mouth-end of bottle, and secured to neck by thread, and tied round it.

f, is a roll of same calico, resting upon edge of aperture, through which the bottle passes. The bottle is thus suspended in the calico, and as it fits rather loosely in the aperture of the frame, is not liable to be broken.

g, Weight of lead, that the apparatus may fall steadily.

neck of the bottle under water, and slipping the valve from its mouth; the water instantly rushes into the bottle, and fills the empty space. By repeatedly allowing the apparatus to fall, I have succeeded in expelling the water to one half, and the vacuum has been extensive in proportion. Of course the expulsion of the water becomes more difficult as the column of water diminishes in length.

The facility with which a vacuum is formed by this apparatus is astonishing; a fall of less than six inches is sufficient to produce one, or even a slight tap upon a table. The apparatus, if properly made, will bear a fall of twenty feet or more. It is curious, that, if the bottle be made to suit the circular aperture of the frame too tightly, the bottom is apt to break clean off after a fall,—illustrating, we may suppose, *contre coup* in injuries of the head.

In respect to the pressure of the atmosphere and the inertia of matter, what holds good in the case of the bottle, also applies to the head and its contents; in one instance a column of water of about 4 inches in length is enabled by momentum to overbalance the atmospheric column, and, as the water escapes, a vacuum is formed, the valve preventing air from entering; in the other instance, a column composed of brain, blood, and serum, altogether of greater specific gravity than water, and varying in height according to the diameter of the brain, which is in a line with the direction of the fall, is enabled, by suddenly arrested momentum, to do the same, the brain sinking and squeezing the blood out of the skull. It will be understood that what we have said of falls will apply also to blows.

Having proved, satisfactorily I think, that a vacuum, and a tendency to a vacuum, may, and do occur within the skull, in consequence of injuries, we now proceed to describe their effects. The results arising from shocks to the head are precisely such as we should anticipate from a vacuum, or a tendency to one; in fact, no other cause could account for some phenomena of concussion.

After a shock, the brain may recede from the dura mater, blood may be expelled from the cavity of the skull, in quantity proportionate to the size of

the vacuum, and there may be insensibility and unconsciousness, yet the circulation may be gradually restored, the brain resume its volume, and recovery take place; or, death may take place before the brain resiliates the vacuum still existing. It is probably in cases of this kind that the brain has been found more dense than usual, and diminished in volume. There are many authorities for this fact, and it will not surprise those who acknowledge the *modus operandi* of concussion above advocated; it is precisely what we should look for. The dense and diminished volume of the brain affords evidence of the brain having undergone pressure, if I may use the word to express the effect of suddenly arrested, or suddenly commenced movement. The effect of the pressure is to squeeze blood from the cavity of the skull, and render the brain denser and paler than natural. Dr. Howard, in his work on the Effects of the Deficiency of Food, states, that Mr. Watson Beaver found the brain almost destitute of blood in two cases of simple concussion, when the examination was made with great care. No mention is made of the brain being reduced in size; this might have escaped notice, or the vacuum might have been filled up with serum, in the manner mentioned below.

If a fracture takes place at the moment of the shock, atmospheric pressure may force air into the empty space caused by the recession of the brain from its bony case. This brings us to the case of injury of the head, with which we commenced. We can more easily understand how air found entrance into the skull. It cannot be imagined that the unassisted external air could insinuate itself through the fracture, distend the dura mater, and compress the brain till bloodless;—we must have the operation of some force. The mass of earth, with the immense momentum acquired during its fall, would suddenly communicate its own motion to the head of the man stooping underneath, and this motion would suddenly cease when the head reached the ground; there would therefore occur a vacuum, or a tendency to one, at the beginning or end of the movement, or at both. While this state of things is existing, a fracture takes place over the pharynx, where air has access, with laceration of the dura

mater opposite the fracture; the air consequently rushes into the cavity of the cranium through the fractured rent of the membrane, and fills the vacuum. The anterior lobe of the brain was pale and compressed, as if pressure had been applied to it so as to squeeze out the blood; this was to be expected, on account of the brain contracting upon itself. It is quite possible, that, if the head were examined in cases of concussion, with a view to the detection of air, it would be oftener found. In the above case, if the dura mater had been injured while sawing the bone, it is very likely the air would have escaped unobserved.

Though we have disposed of the main object of this paper, we will consider the subject further.

At the moment the vacuum is forming, or tending to be formed, by the contracting brain, the pressure of the atmosphere may distend the blood-vessels of the dura mater, which becoming ruptured, pour out blood; hence we have extravasation. Sometimes it may happen that the receding brain may carry along with it the dura mater; the vacuum thus formed between that membrane and the denuded skull would soon be filled with blood supplied by the same vessels. There are cases in which the middle meningeal artery is ruptured without there being any injury of the skull itself; there is no satisfactory way of accounting for this, except by the suction power of a vacuum, or of a tendency to one. The receding brain itself cannot furnish any blood to the vacuum at the moment of its separation from the dura mater, because the blood itself, as well as the brain, is also at the same time retiring from it. It is remarkable that often extravasation of blood takes place at a point diametrically opposite to the external injury: this fact adds weight to our theory of shocks, for, according to it, the recession of the brain from the parietes of the skull takes place at that very point. If a man falls on the right side of his head, the brain will separate from the left side, and there tend to form a vacuum.

The blood displaced from the head during the contraction of the brain may be replaced by serum from the spinal marrow, for the atmosphere may press upon it through the medium of

the ligamenta saphena, which are yielding and elastic.

A little consideration will show us that the filling up of the vacuum by blood from the veins and arteries is liable to be retarded. Instead of the valve attached to the mouth of the bottle in the apparatus above described, the finger of a wash-leather glove was fixed with the end snipped off. When the bottle was made to fall, a vacuum was formed as usual, but the sides of the leather tube were brought into close apposition, and the upper part forced into the bottle. In the same manner, the atmosphere may press upon the blood-vessels going to or passing from the anterior of the skull, and bring their sides together, forcing the contents of a certain portion of their length into the cranium. The emptied blood-vessels afterwards act as valves, presenting an obstacle to the entrance of more blood; but I cannot conceive it likely that the vessels would be entirely disabled from transmitting blood. If thus the vacuum should continue some time after the injury, it would then concern the whole cavity of the skull, and not that part only from which the brain is retiring, as is the case at the moment of the shock. The weight of the atmosphere would therefore endeavour to force blood to any part of the brain most ready to receive it; hence, extravasation may occur in the substance of the brain, ventricles, &c., or parts remote from the original seat of the vacuum.

Sometimes there is laceration of the brain, but what are the circumstances which determine it I do not know; it proves, however, that an empty space has been formed in the brain, for there could not be laceration, or a tearing asunder, without one part of the brain being separated from another; *i. e.* without a space being formed between them.

Hæmorrhage from the nostrils, ears, and mouth, may perhaps be ascribed to the sudden expulsion of blood from the cranium in those cases of concussion where there is no fracture to account for it. This expulsion would abruptly distend and rupture the vessels supplying those parts, and having, at the same time, communications with vessels within the cranium.

I will now describe what appears to me a remarkable provision of nature to

ward off danger. The power of a column of water, as in the bottle of the apparatus above described, to overcome the pressure of the atmosphere, depends upon the height of the column, not on the diameter. A column of water, about thirty-three feet high, however small the diameter, short of being capillary, balances a column of the atmosphere. The longer, therefore, the column of the falling water, the less fall is required to overbalance the weight of the air; the longer, also, the column of brain in a line with the direction of a falling head, the brain is displaced to a greater amount, and the more fluid is expelled from the cavity of the cranium. There is a part of the brain on which the slightest pressure is productive of alarming symptoms, and is sometimes immediately fatal—the medulla oblongata, well known as giving origin to nerves which are directly necessary to the continuation of life: the functions of other parts of the brain may be suspended for a short time without the result being necessarily fatal. Now, if this part of the brain had to sustain the whole weight of the superincumbent cerebellum, and the posterior lobe of the cerebellum, the slight shocks to which the head is frequently exposed would be attended with disastrous results. But there is a provision for this: between the posterior lobe of the brain, and the cerebellum and the medulla oblongata, there is stretched a tense and strong membrane—the tentorium cerebelli—which protects the medulla oblongata from the momentum of the brain. We can thus explain why, in concussion, the functions of the cerebral hemispheres are generally affected. Sight, hearing, and the intellectual faculties, are lost, while the patients generally retain the power of swallowing, breathing, &c.; in short, all the functions of animal life dependent upon the medulla oblongata, spinal marrow, and sympathetic nerve, are still carried on." On the other hand, the pressure arising from extravasation being permanent, extends to all parts of the brain, and there is not only uneasiness, but difficulty of breathing and swallowing. The cat, a great jumper, has a bony tentorium, which may, perhaps, help to render a reason for its numerous lives.

The explanation here given of the

mode in which concussion operates in producing the phenomena arising from it, is quite independent of any direct mechanical violence inflicted upon the head; all that is required is, that the inertia of the brain should be suddenly called into action. "Concussion may take place when the head has received no injury *ab externo*, but has only been violently shaken; nay, when only the body, or general frame, has seemed to sustain the whole violence." Falls upon the fat, or posteriors, have caused concussion. As bearing upon this subject, I will give the evidence of Mr. Sibson, of Nottingham, on a railway accident, as taken from one of the newspapers of the day. "Mr. Sibson is of opinion, that death arose from the body of Mr. Dean having been suddenly arrested whilst proceeding with great velocity and immense momentum, whilst the large viscera had retained their motion, and which thus dashed against the parts which lay anterior to them. Thus, the liver was torn from its ligaments, and all the large vessels which run into it ruptured, producing great internal hæmorrhage; whilst the brain was dashed against the skull with such force as to cause considerable effusion on the substance of the brain. There was *scarcely any external injury*, with the exception of a few scratches, and a contusion of the lumbar muscles." Here Mr. Sibson agrees with the opinion above advocated, to the extent that the brain, by inertia, tends to move onwards after the case is at rest, but attributes the injury of the brain to its being consequently dashed against the sides of the skull, and not to any vacuum, or a tendency to one, on the opposite side. Can it be properly said that two things which are in such close apposition as the brain and parietes of the skull can be dashed against one another? It is certain, however, that the brain may be made to *press* much more powerfully than natural upon the dura mater in consequence of suddenly-arrested movement of the head, and that is what Mr. Sibson meant.

There are some injuries of the head to which our theory will not apply. A man may fall from a height, and the vertex of the head may be the first to touch the ground, and the brain may have a tendency to continue the fall; but in such a case this tendency is inopera-

tive, as the brain cannot be reduced in volume, inasmuch as there are no outlets at the vertex through which the blood might be exhaled from the cavity of the skull. A blow upon the top of the head, as it produces no rapid motion, cannot cause a tendency to a vacuum within the skull.

It seems to be generally agreed that some degree of pressure is requisite that the brain may perfectly perform its functions; the effects of inanition, and of loss of blood, upon the sensorium, are supposed to prove this, as also the experiments of Majendie, of suddenly drawing off the natural serum within the cranium, the effect of which was to produce dulness and stupor. May not the nervous symptoms of hypochondriacal and hysteric patients be owing to the sudden action of the absorbent powers, causing the absorption of the serum of the various cavities of the body, including that within the skull? The large quantity of pale urine passed in such cases seems to indicate something of the kind: of course, if the quantity of serum within the skull is diminished, the quantity of blood must be increased, probably in the form of congestion, as lately pointed out by Dr. Burrows. This withdrawal of serum and congestive accumulation of blood would diminish the natural pressure sustained by the brain.

But there is another kind of pressure to which the brain is exposed, to which the attention of physiologists has not been sufficiently, if at all, directed; I mean atmospheric pressure, which acts upon the brain through means of the outlets of the skull for the passage of nerves and blood-vessels. This pressure performs an important duty; it retains the brain *in situ*, undisturbed by slight causes. We have seen that this pressure may be overcome by suddenly-arrested or suddenly-commenced momentum of the brain: we will now endeavour to point out the consequences of diminishing this pressure. I do not know whether variations of the barometer have been observed to precede nervous symptoms; these variations, as they occur in the ordinary abodes of man, are perhaps too slight to produce any sensible effect upon the brain. But we have abundant evidence to show that a very low state of the barometer, as it exists at great heights above the level of the sea, is attended by very

marked effects upon the nervous system whenever man ambitiously aspires to physical elevation. This is no more than we should expect, if a vacuum may be formed in a bottle attached to the apparatus above described by a momentum acquired by a fall of about six inches at a height little above the level of the sea: how much more marked the effect must be, when it is made to fall in a rarified atmosphere, as in the receiver of an air-pump, or at the top of a high mountain, when the barometer drops to 15 inches, or lower! The result is so evident that it is scarcely worth while to try the experiment. Suppose the apparatus to be let fall when the barometer stood at 15 inches, indicating the ordinary atmospheric pressure to be diminished one-half, the momentum of the column of water in the bottle would be almost exactly the same as at the level of the sea, while the force to be overcome would be only one-half. At a height, therefore, of 14,000 or 15,000 feet, when the pressure of the atmosphere would be diminished about one-half, a fall of three inches would cause a vacuum in the bottle, supposing a fall of six inches necessary to produce one at the sea level: *à priori*, therefore, we may anticipate well-marked cerebral symptoms to occur to those who ascend the lofty mountains of Switzerland, India, or South America. The act of walking is attended by an up-and-down motion of the head, and one might almost say that on the summit of the Andes every footfall becomes a slight concussion; but there is not much simple walking on the sides of a mountain, the surface is generally rocky, broken, and irregular and pathless, and to make progress over it a series of leaps and jumps are requisite, which, in a highly rarified atmosphere, must cause in some persons subsidence of the brain; I say some persons, for there are others whose step is so elastic that the body sustains no shock: this circumstance may account for the conflicting reports of mountain travellers. We may also suppose that a brain possessed of a vigorous circulation, and therefore plump and well replenished with blood, will not so readily collapse as one in an opposite condition.

In walking over the higher passes of Switzerland, 8,000 or 9,000 feet high, there is experienced greater muscular

weakness and general exhaustion than the bodily exertions will account for: this, I think, may be attributed to the diminished pressure upon the brain rather than to the rarified state of the air entering the lungs. In a description of the ascent of a party up Mont Blanc, in one of the monthly periodicals, I forget which, it is said that one guide could not keep his head upright, some swayed from right to left, some staggered and fell every step. One man was stretched out senseless; Atkinson lay for more than half an hour on the knee of one of the guides in a half fainting, half sleeping condition. A French lady felt exhaustion and drowsiness, and suffered from difficulty of breathing, bleeding of the nose, and blindness.

On the same subject, Captain Gerrard, in his account of the Koonawur, in the Himalaya, states—"When I have been the least unwell, I have been troubled with headaches at 13,000 feet. At from 17,000 to 19,000, headaches are almost constant, and a person can hardly take half a dozen steps without a rest."

From Dr. Smith, in an article on the Diseases of Peru, in the Edinburgh Medical and Surgical Journal, April 1842, I extract the following:—

"Whatever bodily or mental exertion excites the circulating system under the various circumstances of altitude, atmospheric rarefaction and cold, is observed to affect the lungs and the head, in most persons not adapted by their physical form to enjoy perfect health, and breathe freely in the frigid table lands; and hence it is that strangers to these climates are so subject to sickness at stomach, dyspnoea, apoplexy, and various hæmorrhagic disorders when they visit the ranges that border on the passes of the Cordilleras.

"Cattle that feed near the snow line, where pasture is very fattening, are, when in high condition, prone to sudden death. I recollect that in Cerro Pasco, (13,000 or 14,000 feet high), a fine bull terrier, belonging to one of the Cornish miners, fell down dead, probably from apoplexy, when in the act of fondly jumping up. A peculiar throbbing headache, with great sense of fulness at the temples, attended by much oppression and tension at the chest, and frequently sickness of stomach, are symptoms usually experienced for the few first days after crossing the

Cordillera, or residence in Cerro Pasco. This affection is called by the Spaniards *mareo de la Cordillera*, from its resemblance to sea-sickness. By walking fast, especially up hill, a great fulness is felt in the lungs, the temples throb violently, and headache is induced. Some young persons become accustomed to the rarified atmosphere; some, however, especially those of a full plethoric habit, never can pass the Cordillera, or reside in Cerro Pasco, without headache, or more or less difficulty of breathing. Such individuals, when crossing the breaks of the Cordillera, or travelling along the high and frigid plains which the natives call Puna, are exceedingly apt to be attacked with epistaxis."

The nervous symptoms above described as occurring at great altitudes, confirm, in a remarkable manner, our theory that the brain is kept in close contact with the dura mater by atmospheric pressure, and that this pressure may be overcome, and the brain collapse by shocks, and the more easily in proportion to the rarefaction of the atmosphere. Aeronauts who have attained greater height than terrestrial travellers, have not experienced the nervous effects above described obviously because they have not been exposed to any abrupt movements amounting to a shock. The sickness at stomach mentioned by Dr. Smith is, without doubt, to be attributed to cerebral disorder. The name of *mareo*, or sea-sickness, given to the illness arising from rarified air, is very appropriate, as it indicates its nervous origin, it being generally understood that sea-sickness depends upon a disordered state of the brain. The dog which was seized with apoplexy while jumping is a very striking example in support of our theory.

Though not quite connected with the subject, we will say something about the hæmorrhages which sometimes take place at great elevations. It has been generally the custom to ascribe them to the expansion of the blood, after diminution of atmospheric pressure, rupturing the vessels; but I have always thought that this expansion is so very small, and the elasticity of the vessels so great, that we must look elsewhere for an explanation. There is no doubt that the small bronchial tubes are liable to be blocked up by

spasm, mucus, or swelling of the lining membrane from congestion, inflammation, or interstitial deposition. I should think that few people, even in apparent health, have all their bronchial tubes patent to the air. The consequence is, retention of air beyond the point strictured or blocked up, and an elevation from the level of the sea to a height at which the barometer stands at 15 inches would cause the confined air to expand to twice its original volume. The result is obvious—rupture of the membrane of the tubes and air-cells, and hæmoptysis. If there are many blocked-up bronchial tubes, the expansion of the pent-up air will encroach upon the patent air-cells and blood room of the lungs, and thus diminish the quantity of air inspired, and cause congestion of the lungs; so that we have a very sufficient cause for dyspnœa.

Much in the same way we may account for epistaxis. It is possible that many of the cells and cavities connected with the organ of smell might, from turgescence of lining membrane, &c., be cut off from the external air; the consequence would be, at a great elevation, expansion of the air within them, and rupture of their sides.

To conclude, I think the arguments in this paper are sufficient to prove that we have not been indulging in a groundless speculation; and I cannot see how any one admitting the truth of the physical principles, can refuse his assent to the deductions derived from them; but, at the same time, I do not deny the possibility of the brain receiving injury from a blow on the head, causing vibrations, *i. e.* alternate elongation and contraction of alternate diameters of the head, but that does not prevent the operation of the vis inertiae of matter as described in this paper.

USE OF THE ACTUAL CAUTERY IN ARTHRITIS FOLLOWING PARTURITION.

DR. DOHERTY calls attention to the benefits capable of being derived from the employment of the actual cautery in combating the arthritic complications which occasionally attend that most dangerous form of puerperal fever where the veins become engorged. He has now seen five cases in which this destructive form of disease has been arrested by this remedy.—*Dublin Hospital Gazette*, May 16, 1845.

ON THE
USE OF ELECTRICITY IN EXCITING
UTERINE ACTION DURING
DELIVERY.

By W. F. CLEVELAND, Esq.

I WAS requested to see Mary Cook, æt. 39, in her sixteenth confinement, on Friday morning, the 6th of June.

On my arrival at the house, I learned that her previous labours had been tolerably good, with two or three exceptions, when they had been considerably protracted from want of pains. Her health has always been delicate, and for the last few weeks she has had a troublesome cough, attended with copious expectoration; emaciation and occasional night-sweats — symptoms which naturally led to the opinion that she was suffering from phthisis, although subsequently this diagnosis was not confirmed by a physical examination of the chest. On the Sunday evening prior to my visiting her, she was first attacked with premonitory symptoms of labour, soon succeeded by regular and frequent pains, which, on the following morning, abated, but never entirely left her till the Wednesday night, when the liquor amnii was discharged.

At 1 A.M. on the Friday, the pains returned with considerable vigour, but did not last above an hour, and at 6 were again renewed for a short time. It was about four hours after this period that I found Mr. T. with the patient, to whom he had given a dose of the tincture of ergot, and also some spirit and water; but these measures were followed by only a few slight and ineffectual pains.

On making an examination, I found the vagina freely lubricated, the os uteri dilated, the head of the child small, presenting in the right oblique diameter, and in the pelvic cavity; in fact, there appeared no obstacle whatever to the completion of the case but uterine inertia, which I considered was owing to constitutional debility, arising chiefly from the state of the chest. She had now rather an anxious countenance, a small and frequent pulse; complained of great thirst and languor, and of having had no sleep for several nights.

It was obvious that if uterine contraction could not be somehow induced,

and it must be remembered that the ergot had been already tried, the alternative would eventually be instrumental delivery; and this, considering the weak state of the patient's health, and the not improbable and unpleasant result of hæmorrhage from atony of the womb, was not desirable.

At the suggestion of Dr. Lever, who kindly lent me his electro-galvanic apparatus, I resolved on a fair trial of galvanism, and accordingly, with my friend Mr. Richardson, proceeded to its application externally and obliquely across the anterior surface of the uterus. In a few minutes the effect was very apparent. Regular, strong, and frequent pains came on, and in a quarter of an hour from the first application of the remedy, a living male child and placenta were expelled, attended with the least degree of hæmorrhage I ever witnessed.

The uterus was immediately firmly and permanently contracted, and, with the exception of slight soreness of the abdomen, the patient expresses herself as quite comfortable, and, up to the present time, setting aside debility, she has progressed favourably.

June 1845.

POISONING BY A SMALL DOSE OF THE
MURIATE OF MORPHIA APPLIED EXTERNALLY.

A YOUNG woman, labouring under scirrhus of the uterus, and suffering from vomiting, and pain in the stomach, was ordered to apply to the epigastrium, from which the skin had been previously removed by a blister, the 1-32d part of a grain of the muriate of morphia. The same dose was repeated by the endermic method the following morning. Some time afterwards, the woman fell into a state of complete narcotism. She suffered from pain in the head, stupor, ringing in the ears, dizziness, and incoherency, a hot and dry skin, and a strong and frequent pulse. Among the symptoms was one somewhat remarkable, namely, that she saw only the half of surrounding objects:—for instance, in the case of a person standing before her, she could only see the right or left half of the body. The cerebral congestion was followed by convulsions. Venesection was performed, but this only produced a stronger attack, followed by another. A compress, soaked in vinegar, with ice, was applied to the forehead, followed by mustard poultices to the lower extremities. The symptoms gradually abated, but it was three weeks before vision and speech were perfectly restored. —*Oesterreichische Medicinische Wochenschrift*, April 1845.

MEDICAL GAZETTE.

FRIDAY, JUNE 27, 1845.

WE have nothing to record with respect to the Physic and Surgery Bill, except, as we had anticipated in our last, that the consideration of it has been postponed by Sir James Graham until this evening, the 27th instant. We cannot say that we feel there is much prospect of its being then brought forward, and the end will probably be, its postponement until another session. In the meantime, the profession is completely divided with respect to it—some thinking it a beneficial measure, and others the contrary. It is opposed by the English*, but supported by the Scotch and Irish Colleges, while the general practitioners give it a partial support. Mr. Guthrie, who is adverse to the exclusive proceedings of the Council of the College, has announced his views respecting the Fellowship. He proposes that under a supplementary charter, or an act to extend the powers of the present charter, all the Members of the College of Surgeons of *twenty years'* standing, should be made Fellows on complying with such conditions as the Council may require relative to their general respectability, and the estimation in which they are held by their professional brethren; and that all those who subsequently attain this standing, shall be annually advanced to the Fellowship. It should, in his opinion, be optional with those who are of less than twenty years' standing to obtain it earlier by exami-

nation and on the payment of a fee. All precedence should be removed, and every Fellow should be eligible to the Council who had been more than twenty years a Member and Fellow, subject to the usages with respect to election which have existed from time immemorial. The number of members of the College of twenty years' standing, not already Fellows, is said to be nearly two thousand; and in answer to the objection, that the addition of this large number to the Fellows would swamp the College, he expresses his belief that there is no reasonable ground to suppose that such an effect would follow—in which opinion we perfectly coincide.

We consider that there is great fairness about this scheme, and that much of the bitterness of feeling which exists in the profession against the Council of the College, would be at once removed if it were adopted. All Members would have an equal right to the Fellowship upon fair and reasonable terms; and those who wished to attain the honour without waiting for it by seniority, would have it in their power to do so. It has been objected, that the Council would be able to exercise a partial and unfair influence by the reservation,—that seniority of standing will not convey the Fellowship, unless certain conditions, to be determined by the Council, are complied with. It would be advisable, as far as possible, to have these conditions specified: we perfectly agree, however, in the propriety of such a regulation, since in no other way could the Fellowship be considered an honour, or a mark of respectability. It is not to be supposed that every man holding the diploma should acquire, *ipso facto*, a right to the title of Fellow: there are some members of the College who are engaged in trade as chemists and druggists, who deal in soda-water, soap and tooth-brushes. It would be

* We have just received the Memorial addressed by the Royal College of Physicians to Sir James Graham. It indicates as much hostility to the measure as the recent Statement of the College of Surgeons, but on somewhat different grounds. We shall probably notice it next week.

preposterous to assert that such members should have an equal claim with others who have really maintained the respectability of their profession as general practitioners of medicine and surgery. To imagine that the College would cede the Fellowship to its members without some restrictions, is absurd; and it is a delusion to suppose that any government would attempt to coerce them into such a proceeding.

This plan, if adopted, need not, in our view, interfere with the formation of a College of General Practitioners, which might have a distinct charter, and exercise most of the privileges at present enjoyed by the Apothecaries' Society. We believe that there is a large and respectable body of members desirous of retaining their connexion with the College of Surgeons, who would rejoice to see some measure of this kind adopted by the Council; and there is every reason to believe that the Government would, on the application of the Council, grant a new charter to allow of the creation of an additional number of fellows.

As the matter at present stands, it is a struggle for absolute power between the College of Surgeons on the one hand, and those who advocate the principles of the present Medical Bill, without change or modification, on the other. Neither party seems disposed to make any concession. If the bill pass, it must, as we have shewn in our last, be attended with ruin to the College: and while we wish to see an amicable adjustment of these differences by some such plan as that proposed by Mr. Guthrie, we cannot but condemn the Council for obstinately persisting in a course of injustice, against the views of a disinterested minority of their own body, and against an overwhelming majority of Members and Fellows. While, moreover, they refuse to make the least

advance to conciliate those of their members who are disposed to uphold the College, they claim from the Crown, in their recent "Statement," a power to license an "inferior" grade, not for the advancement of the science of surgery, but for the sake of supplying the institution with funds! Until they show themselves disposed to give only an equivalent of justice, by revising the principles upon which they have hitherto selected members for the Fellowship, we do not think that this claim is deserving of the smallest support.

WE insert elsewhere (p. 385) some documents respecting the case of the late Mr. Seton, who died lately at Portsmouth, from the effects of an operation, rendered necessary by a pistol-shot wound, which he had received in a duel. The question involved in this case is one of considerable importance to the profession, since there is no doubt that the operation was the cause of death, and the responsibility of the party who inflicted the wound, will materially depend upon the question, whether the operation was *absolutely necessary for saving the life of the deceased*. All the medical men who attended Mr. Seton, agreed in the necessity for its performance. The writer, signing himself M.D., who states that he attended the post-mortem examination in a medical capacity, dissents from this opinion; but it does not appear that he saw the patient during life. Mr. Potter's statement of the diagnosis clearly shows that there was some uncertainty respecting the artery which had been wounded by the ball. The opinion seems to have been, that the femoral artery itself was probably slightly injured. The post-mortem examination, however, showed that this was not the case. According to M.D. it was a small and superficial branch

of the femoral, without a name; and we should draw the same inference from Dr. Allan's evidence at the inquest. This is really a most important part of the inquiry, so far as it relates to responsibility; since the question is not, whether most surgeons would not have tied the external iliac from the indications during life, but whether this operation was absolutely necessary for saving life, judging from the condition of the parts on a post-mortem examination. It was a case of difficult diagnosis, and most surgeons would probably have acted like Mr. Liston. But the question is:—would this operation have been performed, had it been known that the femoral artery was uninjured, and that the wound had only involved a small and superficial branch of that artery? There was some difference of opinion at the inquest on the absolute necessity for the operation, judging from the inspection, and we apprehend that, without at all impugning the grounds upon which the diagnosis was founded, many surgeons would hesitate before tying the external iliac for a wound in a small branch of the femoral. M.D. is, however, in a very different position to the surgeons who attended Mr. Seton: he is on the safe side in giving an opinion after all is over, and from a post-mortem examination alone! Had he been taken into consultation before he knew that the injured artery was "a comparatively small one," he would most probably have joined the others in advising the performance of the operation which has unfortunately led to death.

WE have received a Report of the Seaman's Hospital at Howrah (the Deptford of Calcutta), which gives satisfactory evidence of the value of this institution. It was founded ten years since by Dr. Duncan Stewart, and is

conducted on the plan of a Sanatorium, being open to the sick of all vessels, whose commanders pay a certain fixed sum. It is stated that this plan,—while it considerably adopts the system of contract to which they are attached, and makes provision for the sick at the least possible cost,—deprives the commanders of all excuse, on the ground of economy, for retaining their men on board when incapacitated for duty by sickness. It appears that this hospital was rendered necessary chiefly on account of the great distance of the General Hospital from the shipping, and from the great increase of the shipping frequenting the port of Calcutta. The latter proposition has been fully established by published tables; the former is enforced by the fact, that it appears there died in four years and eight months, on their way to Calcutta General Hospital, 27; and, within a few hours after their admission into hospital, not fewer than 57, making a total, in less than five years, of 84 casualties; of these, the report suggests, it may be fairly inferred that some, allowing even a tithe, might have been rescued by a shorter journey and earlier assistance. The greater advantage of removing the sick seamen to an hospital on shore, in preference to allowing them to remain in their own confined berths, is self-evident. It is much to be regretted that, owing to the great competition for River practice, the stability of this institution is placed in jeopardy. We trust that those who have influence upon the spot will perceive the necessity for maintaining an establishment which offers the advantage of being at all times prepared to give almost immediate medical aid to the sick seaman—a service which should never be permitted to depend upon any contingency.

Reviews.

A Physiological Essay on the Thymus Gland. By JOHN SIMON, F.R.S. 4to. pp. 100. London: Renshaw. 1845. (This essay obtained for its author the Astley Cooper prize.)

SOME moral philosophers have insisted very disdainfully upon the utter uselessness of posthumous fame; but it surely can be neither a kindly nor a wise endeavour to discountenance the feeling which lies so deeply within the heart of almost every really worthy man—the good ambitious hope of handing down his name less to the admiration than to the gratitude of future generations,—of being remembered as one who not only conferred benefits on mankind in his own day, but transmitted to posterity both the example of his beneficent actions, and the power of imitating and extending them. This, indeed, is essentially true posthumous fame—the absolute good which survives the physical death of its originator.

The time may probably arrive when new modes of investigating and reasoning will render the discoveries of Sir Astley Cooper matters rather of history than of present applicability; but the influence which his example and his teaching wrought upon the profession during his long and useful career, will, we believe, never cease to exercise a good effect. The teacher dies, and his discoveries are superseded or slurred over; but his wise system, and his great truths, continue to be transmitted onwards, long after the source from which those truths and principles originated have passed from remembrance. And the influence of his honest and good example, and of the tone which he strove to impart to the feelings of his class, are, it is trusted, in a great measure perpetuated in the same manner.

The style of teaching, and of original research, adopted by Astley Cooper, have done much towards directing the course of anatomical inquiry into the track which, if steadily followed, must certainly tend, at no very distant period, to place our knowledge of the structure of the human body among the exact sciences: and his noble personal example, which so felicitously combined the acute phi-

losopher with the polished and considerate gentleman, the profound student with the active and intelligent man of the world, could scarcely have been present for so many years before his contemporaries and his pupils, without commanding alike their admiration and their imitation, and grafting in their minds the resolution of teaching their successors how brightly distinguished and generous personal qualities illustrate the worth of sterling professional character.

In the plan adopted by Sir A. Cooper, of inducing others to pursue, after his death, those anatomical studies which he so improved and delighted in during his life, the judgment, kindness, and consideration so essential to his character, have alike been shewn. He knew that certain questions remained obscure and undecided as opprobria to anatomists;—he did much to elucidate several of them while he lived, but “art is long and life is brief;” so he left a noble encouragement to his successors to win honour for themselves in the course of research which he had opened. He knew, too, that these questions were matters of remarkable difficulty, and would require much research and labour for their elucidation, and were not to be decided upon in weeks or months; he therefore made arrangements which enable the candidates to employ years in investigating them. He, doubtless, reflected also, that to pursue such a course of inquiry much loss of time would be incurred, and considerable sums spent in the purchase of instruments and specimens, as well as in the subsequent publication of the successful essays, and he determined that the prize should not be of the parsley-crown description, but of a substantial and remunerative kind.

We sincerely congratulate Mr. Simon on being the first who has claimed the distinction of receiving the Astley Cooper Prize, for a very great distinction it certainly is. All who knew or studied under that great surgeon must treasure up the remembrance of every mark of approval received from him. It was no small thing for any man—much less for any *young* man—to gain his commendations; and we believe that the time will come when the surgeon will point out to his children the signature of Astley Cooper upon his diploma or

school certificate with feelings akin to those with which the veteran soldier of the Empire now displays the faded ribbon and the little cross which he received in his best days from Napoleon's own hand.

Mr. Simon's work is certainly a very valuable addition to our knowledge of the structure of the thymus gland; and his speculations upon its uses are consistent, and appear to be, in great measure, borne out by facts. The anatomical details seem to have been cautiously elicited from an extended series of dissections and microscopical examinations, and they contain much that is original.

Commencing his observations upon this structure as it exists in the embryos of swine and oxen (in specimens where the foetal animals measure from about half an inch to an inch and a half in length), he traces its development through its various phases. In the earliest state in which he has distinguished the gland, its rudiment appears in the form of a simple tube lying (in the animals already mentioned) along the carotid vessels, and surrounded by the faint indications of nascent areolar tissue. The contents of the tube are seen (with a magnifying power of 400 diameters) to be granular and dotted, but do not, as yet, shew distinct corpuscles. Its figure is defined by the abrupt outline of the membrane which constitutes the wall—an exquisitely delicate, transparent, homogeneous tunic, presenting at intervals slight elongated thickenings of its substance. The author thinks he has reason to believe—although he has not been able to demonstrate the fact—that the first rudiments of the gland would be found in a series of primordial cells, arranged in a line along the cervical vessels and pericardium, and coalescing on each side of the neck to form the tube he has described. In a foetal pig, $1\frac{1}{2}$ inch in length, this primary tube measured nearly $\frac{1}{600}$ in. in diameter; and in one $\frac{3}{4}$ in. in length, about $\frac{1}{1500}$ of an inch. The author's investigations have not enabled him to countenance Arnold's opinion, that the thymus is a development from the respiratory mucous membrane. The second stage in the progress of its development is in analogy with the mode of growth attributed to the true glands; the tube bulges at

certain points of its length, on one side or the other, and gives rise to diverticular follicles, which have precisely the same contexture as the parent tube. The steps of development are not the same in all parts of the gland; they advance most rapidly at certain particular points, namely at those which ultimately attain the largest size. For example, in a foetal calf, there are three centres of early development, occurring in those points of the tube which correspond respectively to the pericardium, to the upper part of the trachea, and to the angle of the jaw. The third distinct step of advancing development is made by the commencement of ramification in the follicles. Almost always the follicle branches without having undergone any previous lengthening, so that the secondary portions of the gland are connected with its primary tube by the shortest possible stems; they are, in fact, sessile: the type of development essentially consisting in the lateral growth of branching diverticula from a central tubular axis. In the mature thymus, the primary tube, although it has increased *pari passu* with the growth of the region to which it belongs, is yet so hidden by the disproportionate bulk of its follicles, that many anatomists have overlooked its existence or real nature. But Haller and Puteus demonstrated its continuous cavity, and Sir A. Cooper gave the general characteristics of its structure, when he described the gland as formed of "two ropes which can be with care unravelled; these ropes being of considerable length, and constituted of small and large lobes, which appear as knots upon the rope." Many interesting particulars are adduced in confirmation of the important fact, announced by Haugsted, that the thymus gland is not largest during embryonic life: but, on the contrary, increases rapidly and greatly for a certain time after birth. Thus he has ascertained that, while the weight of a dog's thymus at birth may range up to *ten* grains, we find it subsequently increasing with such rapid paces, that, after five months, it weighs nearly *four hundred*. A similar progression, he believes, obtains, without exception, in other brutes, and in the human subject. It is easy to trace the general fact of the increase of the thy-

mus after birth, but exceedingly difficult to fix *precisely* the period at which it reaches its maximum growth, and begins to decline.

The contents of the cavities of the thymus consist of a fluid in which (as Hewson discovered) an immense multitude of microscopical corpuscles float. These corpuscles are circular discs of nearly the same size as the coloured particles of the blood. The average of several measurements give the author $\frac{38}{1000}$ of an inch for their diameter; but there is considerable variation in their size in different subjects, and in different corpuscles in the same subject; $\frac{28}{1000}$ and $\frac{51}{1000}$ of an inch are the extreme sizes he has measured. Many of these bodies deviate from the discoid shape, and tend to become globular, or to assume irregular outlines. They are characteristically marked by a variable number of minute dottings: these may present themselves as exceedingly small dark spots to the number of two, three, four, or five: or there may only be a single one, which is then found proportionably large, and attracts notice by its high power of refraction.

Mr. Simon gives the following as the result of an analysis of the thymus of a calf about three months old.

Water	77.20
Fibrin, gelatinous tissue, and traces of fat	12.72
A substance between albumen and casein	4.13
Watery extract	3.80
Salts, principally phosphates of soda and lime	2.15
	100.00

The author argues that the results of this examination agree with those given by Sir A. Cooper and Morin, in one extremely important particular, in conclusively demonstrating that no theory of the use of the thymus can be just which involves the supposition of its secreting and containing highly carbonated matters through the period of uterine life, and adds that the various substances, "fibrin," "gelatinous tissue," "albumen," "casein," "gluten,"—all admit of reduction to nearly identical ultimate elements, are but slight variations from one common formula, and stand severally in the closest affinity to the universal nutrient material, the liquor sanguinis; and that "we

may venture, in general physiological language, to describe the secretion of the thymus gland in the young animal as NUTRIENT MATTER." This quotation will afford a sort of hint with regard to the author's principal view of the functions of the thymus gland; he states his conclusions upon this subject very fully in the Sixth Chapter, but our space will not allow us to quote his remarks at length, and it would be scarcely fair to give them in an abridged form.

His account of the comparative anatomy of the thymus is full of interesting facts. He has arrived at the conclusion, that the gland belongs, without exception, to all animals breathing with lungs, and to no others. It is therefore more or less developed in all classes of mammals and birds, and (as he satisfactorily shews in disproof of the opinions of several writers) in most reptiles. In the higher classes of the perenni-branchiate reptiles, such as the *menopoma*, *amphiuma*, and *axolotl*, where the lungs are well developed, a thymus exists; but the organ is found less perfectly developed as the scale of organization in this species of animals descends; and in the lower orders, such as the *proteus*, and the *sireu lacertina*, he has not been able to detect it. In the tadpole of the frog, (the young of *rana paradoxa* were chosen for examination on account of their large size) he has failed to detect any trace whatever of a thymus or of any structure resembling it. On the other hand, in the youngest specimens in which the pulmonic respiration was established, he constantly found the commencement of the organ in its usual position, just above the base of the heart. In fishes he has never been able to discover any signs of a thymus.

Should the essays of future successful candidates for the Astley Cooper prize equal this in merit, the usefulness of the testator's plan will be fully proved, and the profession will gain a series of very important works. The authors of subsequent prizes would do well to publish their papers as nearly as possible in the same form as this elegant volume:—the books could be more conveniently referred to if kept together in a uniform series like the Bridgewater Treatises.

Contributions to the Medical History and Treatment of Sexual Diseases.

By JOHN HEY ROBERTSON, M.D.
Glasgow, 1845. 8vo. pp. 80.

IN fulfilling his professional obligations, the medical man is compelled not only to see and to learn, but also to express and to do, many disagreeable and painful things. Disease is his province;—it matters not from what causes, or in what subjects, aberrations from health may occur; it is his absolute duty, irrespective of all other considerations, to endeavour to restore health by every means in his power. It signifies not whether it becomes his task to revive a fainting criminal on his way to the scaffold, that a just law may not be deprived of its retributive sway; or to use the ordinary means of preventing an intoxicated wretch from becoming apoplectic, only that he may afterwards perish by a slower and a worse death; or whether he considers it to be necessary to write a book, for the information of his professional brethren, upon subjects "*dicere quæ pudit*." On these occasions he may feel that he is pursuing a course in which the dignity of his professional character receives no slur or blemish, knowing that he is faithfully and honestly performing the obvious duties of his humane calling; but, at the same time, much depends upon the *manner* in which the office is fulfilled. True it is, that it may require to be done promptly, firmly, and efficiently,—but it should be done calmly, seriously, and what is more—delicately. The man who appears to have a pleasure in executing a task from which the feelings of most persons, "to a certain degree, revolt; or who treats, in a flip-pant and careless manner, subjects which other men regard gravely and uneasily, will always meet with censure, however worthy his intentions may be. There are several topics which every surgeon would be glad, if possible, to omit altogether from his lectures or writings—subjects which require much tact and delicacy in their management, and with which he would rather have nothing to do; but he finds that it is absolutely necessary to treat of them in full. Under these circumstances, every well-judging man feels that the wisest and most natural course

will be to impart his knowledge in a grave and philosophical manner, to give every detail which is absolutely necessary, but in the least offensive terms, and with a caution which excludes every idea that is not positively germane to the subject; there must be no dwelling upon disagreeable topics, no striving to render that which is essentially disgusting pleasant and amusing, no attempt at misplaced wit, no efforts to create a laugh; for he knows that, in producing this last effect, he in great measure forfeits his own dignity and the esteem of his auditors.

The work which lies before us appears to be written by one who is, probably, an acute and useful practitioner, but it affords no scope for extract or analysis. We are informed that the first part was published in another shape ten years since, and therefore the profession have, within that time, had ample opportunities of availing themselves of any useful hints which its pages may contain: a large part of this section is made up of the opinions of M. Ricord, which have been, for some time, before the medical reader in a more recent and complete form. The remarks upon Hydropathy, in the second part, are very just, but need not be quoted. The third and last part contains nothing useful that is new.

We do not wish to dwell very strongly upon the subject, but we must say that we greatly dislike the manner in which several portions of this work are written. Anecdote and facetiousness seldom come well from a medical man; they are not within his province; and when he endeavours to make disease the subject of amusement, his wit has always (to use an expressive vulgarism) a "deadly liveliness" that is exceedingly disagreeable. His sphere is one of stern duties, and merriment is seldom his forte. We never knew but one from whom professional facetiæ came with good effect; but the pleasant tones of his manly voice will never sound again, and there are very few who have tact or mind enough to imitate him successfully in this respect. For our own part, our editorial and personal feelings upon this subject are the same. If one of our professional brethren meets us, and, in fitting place and with good judgment, amuses us with a merry anecdote or a well-timed

joke, we leave him gratified, and with a feeling that he has thrown a gleam of sunshine upon the prospect of our day;—but if we happen to fall in with one who (however sterling his information) becomes annoying from his unpleasant gossip and misplaced facetiousness, we of course do not think it necessary to quarrel with him because we condemn his taste, but detach his finger from our button-hole as quietly as we have just removed the “Contributions” from our desk, and leave him, to occupy ourselves with more important matters.

Hospital and Infirmary Reports.

ST. MARYLEBONE INFIRMARY.

RECORD OF CASES.

By THOMAS MAYO, M.D. F.R.S.

Physician to the Infirmary.

Arachnitis, shewing only increased vascularity.

THE following case was drawn up for me by Mr. Allen, of the Marylebone Infirmary.

James Black, æt. 30, by trade a tailor, was admitted to the lunatic ward of the Infirmary, on the 22d May. His wife stated, that he was a remarkably sober, quiet man, of studious habits. His health was generally good, but he was frequently obliged to have recourse to aperient medicines. About a year previous to his attack, he had joined the Socialists, and the doctrines of this sect appear to have made a deep impression on his mind; to them he devoted much of his time and thoughts. A fortnight ago, his wife first observed his manner strange; and he began to complain of an excess of joy stating that it could not last; that he would not wish a dog to suffer so much from joy, as he did. He gradually became worse, and would not go to bed at night, nor would he allow his wife to do so. About five days before his admission he became very violent, and attempted to strangle his wife. From this time until his admission he was under restraint, talking and shouting incessantly. He took very little food, and had not slept for a week. When admitted, he was very violent; tongue dry and furred; pulse quick and small; his head was shaven, cold applied, and a blister between the shoulders; in the evening he was ordered by Mr. Allen a strong dose of the Tincture of Cannabis, to be repeated in four hours, if the

first dose should have no effect. Neither this nor the cold lotion had any effect. The incessant raving continued. On the 23d he was ordered by me five grains of ipecacuan every three hours. No soothing effect, or nausea, resulted, and in the evening Mr. Allen gave a large dose, 100 minims, of Li- quor. Opii Sedativ. This produced about three hours of sleep. On the morning of the 24th he was quieter, but his strength was rapidly failing. He was ordered strong gravy soup, porter, &c. On the night of the 24th the opiate was repeated, and on the next morning I learnt that he had obtained much sleep. I found him, indeed, apparently in that state, which, on examination, turned out to be coma; from this he did not emerge, but died in the afternoon.

The head was examined twenty-four hours after death. The arachnoid membrane was opaque in numerous patches: the pia mater highly congested with blood of a very florid colour, some effusion of serum between them. The ventricles contained more than their usual quantity of this fluid. These were the only abnormal points disclosed by the autopsy.

This case falls under that head, described by Dr. Abercrombie* as ‘A dangerous modification of meningitis, which shews only increased vascularity.’ His history of the disease so characterised is almost identical with the above case; and those cases, by which he illustrates it, help us to a solution of a question which naturally springs out of the above narrative. Did the opium given and repeated to Black occasion the subsequent coma? All the cases given by Dr. Abercrombie ended in coma, which he assigns as the *legitimate* termination of the disease: and in none of them does he mention, as I think he would if it were so, that an opiate had been given towards the close of the case. In this latter surmise, I perhaps, however, am not altogether justified. For that eminent author, in his description of cerebral disease, too often uses the expressions, “usual treatment,” “various other remedies,” without farther specification, and without enlightening us as to what treatment he considers usual. In a former contribution, I have noticed the important truth, that the treatment of a case forms a part of its pathology, and that no case is correctly given where its treatment is not given.

Whatever suggestions relative to treatment Dr. Abercrombie *does* place before us must be valuable. I will therefore observe, that he speaks of a stimulating treatment as what his further experience in this class of cases had led him to adopt with a preference.

* Continued from p. 151.

* Pathological and Practical Researches 3d edition, p. 61.

The form of cerebral disease here illustrated appears interesting in relation to another view. It is spoken of by Dr. Abercrombie as apt to be mistaken for mania. Now it appears to me so absolutely similar to mania, for the time that it has lasted, in the cases given by Dr. Abercrombie, as well as in mine, that I do not see why it should not be at once recognised as identical, or only differing from attacks of mania, such as they *ordinarily* occur, in being fatal in that early stage, in which mania itself is confessedly *sometimes* fatal from pervigilium and exhaustion. If, indeed, we are entitled by the facts of these cases thus to generalise, they throw an important light upon the state of the meninges in the first or acute stage of mania. The treatment at this early period, calculated, as far as my experience has gone, to avert *this* termination, and to allow the disease to run its ordinary course, is the very continuous application of cold to the head, a darkened room, and a systematic use of the Potassio Tartrate of Antimony. In the case of James Black, above given, the time for curative expedients had elapsed before he was subjected to any treatment; certainly five days and nights of uninterrupted raving, and pervigilium; and nothing remained except to endeavour to support strength, and procure sleep. Even antimonials seemed inadmissible in his state of exhaustion, when I first saw him, and I substituted ipecacuanha, which here, as in mania generally, though given in five-grain doses every third hour, produced no sickness or nausea.

Every day's additional experience tells us, how little we know, so far as post-mortem appearances are concerned, of the evidence of sthenic inflammation, where only increased vascularity is present, in cerebral disease: and, again, the inexpediency of a depletory system in acute mania rests on good authority. Still I should be unwilling to consign the disease described by Dr. Abercrombie, or the case by which I have illustrated it, to a stimulating treatment, as appropriate in kind, however unavoidable in its advanced stages. My readers may judge for themselves by a reference to the work of Dr. Abercrombie, p. 64; but to me it appears that the case which suggests to him this line of treatment, as probably appropriate to the disease in question, is scarcely an instance of that disease. It bears the character of an attack of hysteria supervening upon the active use of depletory remedies, which had been administered for enteritic disease in a lady debilitated by recent accouchement.

[To be continued.]

Medical Intelligence.

THE "TIMES" ON THE CASE OF MR. SETON.

It is an old saying and a true, founded on accurate observation of character, that whenever a man asserts with very unusual emphasis that he is "positively sure" of any given circumstance, his mind is not altogether free from doubt on the point. To this psychological fact we probably owe the legal maxim—"Id certum est quod certum reddi potest, sed id *magis* certum est quod certum esse videtur." We cannot help inferring from the very positive terms of the verdict given by the coroner's jury on the late Mr. Seton, that the gentlemen who composed that jury were—of course unconsciously—somewhat dubious whether the operation, which was the immediate cause of his death, might not have been postponed with advantage to the deceased. The verdict was as follows:—

"We find that the immediate cause of Mr. Seton's death was the result of a surgical operation, rendered *imperatively necessary* by the imminent danger in which he was placed by the infliction of a gun-shot wound, which he received in a duel with Lieutenant Charles Moorhead Hawkey, of the Royal Marines; we therefore find the said Lieutenant Hawkey and Edward Lawes Pym, as well as all the parties concerned in the said duel, guilty of wilful murder. The jury would further express their unanimous conviction that every thing which the *best professional skill*, the greatest attention, and the utmost kindness *could* suggest, was rendered to Mr. Seton by his respective medical attendants."

Valeat quantum valere potest. How a jury of non-professional men could take on themselves to declare, as in effect these jurors have, that the best professional skill *could not have suggested any thing* besides what was actually done, might excite some surprise, were it not that the verdict of a coroner's jury is seldom regarded as the result of absolute wisdom. But, whatever weight is to be attached to this "unanimous conviction," we have to thank the jurors for having expressed so decidedly what they thought. We give them the fullest credit for having done their very best according to their abilities. As non-professional men, they could only form their opinion on the information derived from the evidence laid before them; and, though the "stout asseveration breeds a doubt," it gives one no ground for a moment's suspicion of the thorough sincerity of the asseverators.

We, as bystanders watching the progress of the inquiry with great interest, on account of its bearings on some of the questions

which now agitate the medical profession, have been much struck by the entire absence of all allusion to what, with all due deference to the jury, we think that the *best* professional skill not only *could* but *would* have resorted to in preference to the operation, or at least as a preliminary experiment. Here was a man who had received a sudden wound, inflicted with great violence, and followed by the loss of a large quantity of blood. The first treatment appears to have been most judicious, and under it the patient was enabled to rally and get over the shock which his constitution had sustained. The discovery of the large pulsating tumor naturally occasioned grave apprehensions as to his recovery, and a question as to the proper course to be pursued. That question was resolved, as it appears to us *indiscreetly, in favour of an operation, in all cases of a very hazardous character*, and, under the circumstances of the patient, and as the event has proved, of the utmost possible hazard. Had that operation been one which in any ordinary case would have been far less dangerous, still in this instance we should have thought that the last thing which "the best professional skill" would have suggested would have been to expose the patient, so soon after his recovery from the first, to a second and far greater shock; and that every thing short of an operation which medical science might have warranted would have been tried in preference to "the opprobrium of surgery." Disregarding some apparent discrepancies in the medical evidence, we may take it as quite clear, and as fully admitted, that, the operation was premature; that if not for twelve months, or for one month, or even for a single week, still for a day at least, its performance might have been *safely* postponed. Why was not that day, at any rate, devoted to the employment of some less dangerous remedial treatment? The tumor, as was stated in evidence, had already in some measure yielded to the application of ice. Why was not this persevered in? Why was not pressure, which is now so constantly made use of in the treatment of aneurism, resorted to in preference to the scalpel? We acquit the jurors of all acquaintance with this treatment, because it is indisputable that, had they known any thing about it, and that the stationary condition of the pulsation of the tumor indicated that pressure might have been, even if only with the slightest possible prospect of success, experimentally resorted to, they must have modified the ardent eulogy of their verdict. Not only did the life of Mr. Seton, but the lives of his antagonist and the other parties implicated possibly may, depend on the questions whether or not the "pure surgery" treatment of the deceased was right, and whether or not, if he had been treated according to

the rules of "medical surgery," he might not have survived till at least a year and a day after the duel. Had he done so, Lieut. Hawkey would, as the law stands, *have been safe*. As he did not, the survivors, if the coroner be right in his law, are now liable to be tried for their lives, and, if found guilty, to be executed. * * * *

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To the Editor of the Times.

SIR,—You have thought proper to bring my practice before the public in some articles on medical reform, and in connexion with the case of the late Mr. Seton. You say that "the reasons which induced me to take the pure surgical course in preference to that which medical surgery would have pointed out, requires explanation." This I am ready to give.

In the first place permit me to refer you for a correct account of the case to the *Lancet* of this date: from which it will, I think, appear to all well-informed medical men that some step required to be taken, and that without any delay, in order to arrest the flow of blood into the tumor.

This, I fearlessly assert, could not have been effected by pressure, as the writer of the articles in your paper seems to suppose. The nature of the tumor and its situation rendered this method absolutely impracticable; and any attempt of the kind would have added immensely to the danger and difficulties of the case.

Allow me to remark, that the great and important distinction between a *spontaneous* aneurism (from a diseased vessel, a circumscribed tumor often of slow growth) and a *false* aneurism (not well bounded, extending and disposed to extend rapidly, and even to pour out its contents externally) has been here somehow very strangely overlooked.

As to the treatment of aneurisms by pressure, this plan, revived very lately, and recommended in a modified form by a Dublin surgeon for cases of aneurism of the ham, has been resorted to with success only four times in this country*. Of these four cases two were under my care; then came one treated by Dr. Allen, of Haslar Hospital; and one by Mr. Greatrix, surgeon to one of the Regiments of Guards. This method, however, it is well known, is applicable only where a portion of sound artery can be found betwixt the trunk of the body and the aneurismal tumor.

The tumor in Mr Seton's case lay in the groin, above the fold of the thigh, and in a great measure over the muscles of the abdomen. If pressure could have been applied, surely I was as likely to have employed it as any other practitioner.

It was the opinion of the surgeons in consultation, and after the most mature

* See page 392.

deliberation, that the operation could not with safety be delayed for even one day. The tumor was steadily increasing; and some thought that it had enlarged considerably during the few hours which elapsed betwixt the consultation on the night preceding the operation and the morning of its performance. Had it passed a little higher, even the ligature of the vessel could not have been practised.

The insinuations as to the motives which induced me then to proceed to the operation might have been spared.

You persist in contrasting the education of surgeons with that of general practitioners, and in assuming that the information and judgment of the former must be far inferior to that of the latter.

My professional education, I may be permitted to say, was equally full in all its branches with that of any physician or general practitioner whatever, with the addition, perhaps, of a somewhat longer hospital attendance, and a little more extended study of anatomy and pathology. I expect that I have a full appreciation of the value of what you call "medical surgery," and that I know as well how to take means to avert and do away with the necessity for an operation as to perform it when it is absolutely required.

I have the honour to be, Sir,

Your obedient servant,

ROBERT LISTON.

5, Clifford Street, June 20.

Report of the Case of the late Mr. Seton, shot in the recent Duel at Portsmouth.*

By J. PHILIPS POTTER, M.B. London.

As the circumstances attending the death of the late Mr. Seton, at Portsmouth, have excited much attention, and as points of considerable practical importance in the treatment of gun-shot wounds of arteries are involved in the case, it may not be uninteresting to add to the facts already stated in evidence, a short account of the actual state of the patient at the time the operation of tying the external iliac artery was undertaken; of the principal reasons which were then considered to indicate that particular procedure; and of the facts of importance connected with the operation.

As I was present at the consultation, and assisted at the operation, I am enabled (with Mr. Liston's permission) to add this much, from notes I made soon afterwards, of the circumstances that then appeared to me of particular interest. To relate the case, indeed, as much as possible as it presented itself at the time that the operation was proposed, seems the fair and practical mode of enabling qualified persons to form an opinion

as to the propriety, under all the circumstances, of taking that step; and as the question was actually started during the examination of the medical witnesses before the coroner, it is the more advisable that this should be done.

It may be well, in the first place, to premise that the patient was remarkably fat, particularly considering his age (about 28 or 29), that he was understood to have lived very freely, and taken little exercise for several years; that his constitution was described as delicate and impressible; and that, when indisposed, he was always observed to be easily lowered by treatment.

On the evening of the 20th of May, Mr. Seton received a gun-shot wound across the lower part of the abdomen, the ball entering in the upper part of the right thigh, a little above and in front of the great trochanter of the femur, and passing out about the middle of the fold of the left groin. The hæmorrhage was very rapid, and described as florid, issuing in a large stream and per saltum from both wounds, and as rising, when uncontrolled, in a jet to the height of two or three feet from the wound in the right hip. No surgeon being then present, attempts were made to arrest the hæmorrhage by pressure over the wounds, and by the application of a ligature round the upper part of the right thigh. Ultimately the patient fainted, and the hæmorrhage ceased; not, however, before apparently a large quantity of blood was lost.

When first seen by Mr. Jenkins, the patient appeared almost lifeless; but the bleeding had quite ceased, and stimulants gradually restored the circulation to a certain extent. The wounds were simply dressed, and warm applications, in the first instance, made use of as most soothing and grateful to the feeling of the patient. The following day the temperature of the surface became more natural, the pulse increasing in rapidity and somewhat in strength. The track of the ball was marked by an elevated ridge, from one opening to the other, and some ecchymosis of the skin extended from this line over the lower part of the abdomen and scrotum. The patient suffered great pain in the groin and right lower limb generally, accompanied with a sensation of numbness of the front of the thigh, and partial loss of power over the muscles of that part of the limb. At a subsequent period, the application of iced water and bladders of ice to the right groin gave some relief.

In the course of the next few days little change occurred, but on the 27th (the seventh day after the receipt of the injury), the swelling over the track of the ball appeared more evident in the right groin, and was here observed, for the first time, to pulsate

two following days this pulsation became gradually stronger, the swelling itself increasing in prominence and superficial extent; and though the increase was not very rapid, yet it appeared greater on the 29th than during an equal period of time on the 28th. The patient did not experience any rigors.

On the evening of the 30th of May the case was first seen by Mr. Liston, and the question as to the necessity for surgical interference (already suggested) came to be discussed. The state of the case was then as follows:—

The patient had all the appearance of a person who had lost a considerable quantity of blood, his skin being blanched and waxy, and his pulse rather quick and feeble. Although he suffered at times severe pain in the limb, there was no marked expression of anxiety in his countenance; his manner was calm and composed; and as he kept perfectly quiet in bed, he felt his strength improving, and seemed hopeful as to the final result. On examining the wounds, that on the right hip (the opening of entrance) was found circular, filled with a dry, depressed slough, and having a narrow, faint blush of redness round its margin. In the left groin the opening of exit of the ball was marked by a jagged slit, already partly closed by a thin cicatrix. There was extensive mottled purple discoloration (ecchymosis) of the skin in both groins, and over the pubes, scrotum, and upper part of the right thigh.

In the right groin was found a large, oval, visibly pulsating tumor, its long diameter extending transversely from about an inch and a half on the inner side of the anterior superior spinous process of the ilium to about opposite the linea alba, and its lower margin projecting slightly over Poupart's ligament into the upper and inner part of the thigh. On handling the tumor, it appeared elastic but firm, very slightly tender, and not capable of any perceptible diminution in bulk by gradual and continued pressure. The pulsation was distinct at all parts of the swelling, and was equally evident whether the fingers were pressed directly backwards, or whether they were placed at its upper and lower margins, and pressed towards the base of the tumor, in a direction transversely to its long axis, the parts being for the time relaxed.

The femoral artery was slightly covered by the swelling, and the pulsations of that vessel were with some difficulty distinguished in the upper third of the thigh, below the margin of the tumor. This appeared to depend partly on the natural obesity of the patient, and partly on a considerable degree of general swelling of this thigh. No pres-

dominal aorta, arrested the pulsation in the tumor, and pressure in the former situation was attended with severe pain.

In the left groin, just above the opening of exit, was another smaller swelling, quite unconnected with, and of a very different character from, the principal tumor. The skin over the smaller swelling was red, very tender, slightly pitting on pressure, hard round the margin, but yielding more in the centre, and even indistinctly fluctuating. The right testicle was enlarged to three or four times its natural size, extremely hard, and somewhat tender.

Diagnosis.—From the examination of the parts, it was inferred, in the first place, that the tumor was formed of extravasated blood confined under the cellular tissue and fascia of the groin; and secondly, that its pulsation was owing *not to motion transmitted from the femoral artery* (beneath its outer margin), but *to an open and direct communication between a wounded artery and the fluid or semi-fluid contents of the tumor*; in short, that the case was one of circumscribed false aneurism.

Beyond this the diagnosis was unsatisfactory, owing to the difficulty in estimating the thickness of the superficial layer of fat in the abdomen and thigh, and consequently in determining the precise course of the ball through the soft parts. With regard to the probable course of the ball and the artery wounded, it was supposed, from the general direction of the discoloured track, and the relative position of the two openings, that the bullet had passed through the tensor vaginæ femoris and behind the sartorius, perhaps wounding or bruising the anterior crural nerve, and dividing some branches of the external circumflex artery; that it had then passed in front of the common femoral artery (close to its commencement from the external iliac), either slightly wounding the main vessel, or dividing one of its branches near its origin; and lastly, that it had wounded or bruised the right spermatic cord, and run over the pubes to the opening of exit.

Prognosis.—As the blood appeared fluid, the tumor pulsated very forcibly, and the strength of the circulation was gradually being restored, it was thought probable that the effusion, if left to itself, would continue to increase, as it had since its first appearance; that when the sloughs should separate from the external wound, or wounds, renewed hæmorrhage might occur, and would, in that case, and in the present weakened state of the patient, in all probability prove fatal; that even supposing no external bleeding to occur, as the extravasation was limited only by the superficial membranous structures of the abdomen, an additional

any moment (from slight motion of the part, or any unusual exertion), and spread itself upwards, and laterally, like urine effused from ruptured urethra; and lastly, that, in either case, the effused blood would, to all purposes, be lost to the system, and the patient, weakened by its loss, would have to bear up against profuse suppuration, after the closure of the injured vessel by ligature or otherwise.

The *question of treatment* next came to be considered. 1st. Did the case call for immediate operation? 2nd. If so, what operation should be performed?

As long as the dangers above referred to existed, it was felt that the patient ought to be considered as in great, if not in imminent peril, and it was therefore deemed advisable that the sources of these dangers should, as soon as practicable, be removed or lessened. Pressure on the tumor, with or without the application of cold, was looked upon as quite insufficient to arrest even the further increase of the effusion, inasmuch as the bleeding vessel could not be more directly pressed upon than any other part; and as, from the very form of the swelling, the compressing force would tend to drive the blood already extravasated further under the fascia of the abdomen.

Cutting off the supply of blood to the tumor by ligature, therefore, appeared the desirable course; and as, on the one hand, any increase of the quantity or superficial extent of the extravasation must add materially to the difficulties of effecting such an operation, and, on the other hand, as the patient had rallied tolerably well from the first constitutional effects of the wound, and was willing and anxious to submit to anything that might be thought necessary, it was agreed that the sooner the above proceeding was carried into effect the better chance the patient would have of life.

The last question related to the kind of operation. Was it advisable to lay open the tumor, search for the wounded vessel, and tie it above and below the wounded point?

In principle, this was admitted to be the first indication, and would have been clearly the proper practice, had the injury been inflicted an inch or two lower down; but practically, it was thought to be unwarrantable, under the peculiar circumstances of the case, and for the following reasons:—

1st. An operation of this kind, even supposing the operator able to command the circulation by pressure on the proximal side of the wounded vessel, must be attended with a loss of blood dangerous to the patient in his present reduced state.

2nd. As the supply of blood to the tumor could not, in this instance, be effectually interrupted by pressure on any large arterial trunk, the hæmorrhage, in searching for the

wounded vessel, would probably be unusually great.

3rd. Supposing that the common femoral artery should be found wounded, or one of its branches divided close to the main trunk, so as to render it necessary to apply two ligatures to the common femoral itself, the chances of the recurrence of secondary hæmorrhage on the separation of the ligatures would be very great considering the frequency with which this occurs in cases where the common femoral is secured by a single ligature, and in the most favourable position that the operator can select.

On the whole, therefore, it was deemed advisable to apply a ligature on the external iliac artery, and give the patient the chance of the occurrence of coagulation in the tumor, and closure of the wounded vessel, before the free re-establishment of the circulation through the femoral artery. In the present case, it was supposed that mortification of the limb was all the less likely to occur from the circumstance that the greater part of the effusion appeared in front of the abdominal parietes, and therefore exercised less pressure on the femoral vein than if further extension into the thigh had taken place. The danger of peritonitis was by this proposal made a new element in the calculation; but it was estimated that the chances of this and mortification of the limb taken together were less unfavourable than the chances of immediate and secondary hæmorrhage attaching to the other operation.

Operation, May 31, 9 A.M.—The patient having been placed on a table in a good light, an incision was made through the skin, commencing just above Poupart's ligament, rather nearer its outer than its inner termination, and continued upwards and a little outwards. A layer of from one and a half to two inches of subcutaneous fat, and the external oblique muscle, having been cut through by successive strokes of the scalpel, another thick layer of yellow lobular fat projected into the incision, hiding completely the internal oblique muscle, and looking at first somewhat like the omentum. This layer of fat, the internal oblique and the transversalis muscles were then cut through cautiously, and to a limited extent, until the thin transversalis fascia just appeared. This was readily torn through, and the finger being introduced beneath, it was lastly divided to the full extent of the external incision by means of a curved probe-ended bistoury carried along the finger as on a director. The sub-peritoneal cellular membrane thus exposed, proved to be so loaded with adipose tissue, and consequently so firm and solid, that it was easily separated from the face of the fascia iliaca; and for the same reason, the peritoneum and intestines were more readily and completely held aside

than is usual in this operation. At the bottom of the deep wound thus formed was seen, first, the iliacus muscle under the fascia, and then the psoas and the genito-crural nerve; but at first nothing was visible of the external iliac artery, nor could it be felt in its usual situation, close against the margin of the psoas. The fact was, that the vessel, adhering more closely to the sub-peritoneal cellular tissue than to the other parts, was drawn with it slightly out of its course; and turning the ball of the finger inwards towards the cavity, instead of towards the brim of the pelvis, its pulsations were felt distinctly. The external iliac was now a little more exposed, a common aneurism needle passed under it, and a strong twisted silk ligature carried round; but before this was tied, it was ascertained that when the vessel was pressed against the curve of the needle, the pulsation in the tumor was completely arrested.

The operation being completed, the wound was brought together by four points of interrupted suture, and strips of isinglass plaster. The right foot, leg, and thigh, were enveloped in lamb's-wool and flannel, and the limb elevated on an inclined plane of pillows, so as to favour the return of blood as much as possible, and prevent venous congestion.

The day on which the operation was performed was passed in considerable pain, the patient being restless, and complaining of a sense of burning in the limb. An anodyne, however, secured him a tolerably good night's rest.

July 1st.—The limb was found altogether diminished in bulk, and its temperature equal to that of the healthy limb; no return of pulsation had taken place in the tumor. The same evening, some tenderness and tension of the abdomen came on, though the bowels had been kept in a regular state by occasional small doses of castor oil.

2nd.—In the morning, pain in the belly, with increased tension, hurried breathing, short dry cough, and tenderness over the lower part of the abdomen, were observed. Pulse quicker and small. Leeches were applied, and three grain doses of calomel, with a little Dover's powder, ordered every three hours. The symptoms, however, became rapidly worse; the patient complained of severe pain in the right leg, and a sensation of great heat over the whole body, although the actual temperature was rapidly falling below the natural standard. The right leg also became cold sooner than the left. At seven P.M. he became more easy, and expressed an opinion that he should "do well;" but in little more than half an hour he expired.

With regard to the post-mortem examination of the body, though I am not

able to speak from personal observation, it will make the case rather more complete to conclude with the chief facts, as reported by Dr. Allen, by whom the autopsy was conducted.

It appears, then, that the ball passed altogether in the subcutaneous fat; that it did not pierce the fascia lata; and that the only vessel wounded, and forming the false aneurism, was a superficial branch of the femoral artery. This vessel was divided close under Poupart's ligament, and nearly an inch from its separation from the main trunk, its divided extremity being perfectly open. The blood effused and forming the main tumor was coagulated (forty-three hours after death.) There were several pints of sero-purulent fluid in the cavity of the peritoneum, and several "patches of inflammation" on parts of that membrane covering the large and small intestines, and the parietes of the abdomen near the wound made for the application of the ligature. This wound had a sloughy appearance, and was filled with a thin purulent discharge. The artery had been tied about the middle of its course, and was but little separated from surrounding parts; there was no coagulum in it, either above or below the ligature. The vein was sound and healthy. There was a small abscess in the left groin, in the situation of the smaller swelling already mentioned, and there was a collection of blood in the cavity of the tunica vaginalis. The cord was not divided, but blood was extravasated in patches along its course.

Regent Street, Langham Place,
June 16th, 1845.

To the Editor of the Times.

Sir,—Having been especially called upon, in a medical capacity, to attend the *post mortem* examination of the late Mr. Seton, and having heard since then the whole of the medical evidence adduced before the coroner, where I perceived much discrepancy of opinion, and much that was unsatisfactory, I crave permission, through the channel of your journal, to make a few comments on that evidence, which not only affects the propriety of tying the external iliac artery, but also the cause of death in the deceased.

I think it must have been clear to every one present at the coroner's court, that the radical tendency of the joint testimonies of Dr. Allan, Dr. Mortimer, Dr. Stewart, and Mr. Jenkins, the only surgeons examined before the coroner to inquire into the cause of death, was to show that the operation performed by Mr. Liston was absolutely necessary, yet that there was no hurry for it, and that Mr. Seton might have lived a considerable time without it; it was,

moreover, a query with these gentlemen whether he would have died at all if the operation had not been performed; and it was finally agreed that he died at last from the consequences of the operation!

Now, Sir, I believe it is self-evident and logically correct that before we can prove an operation "absolutely necessary," we are bound to show that the person operated upon would have died inevitably and of necessity if the operation had not been performed. Dr. Allan, who came before the jury independent and unshackled, who was commanded to make the *post-mortem* examination, and who had nothing whatever to do with the case in question before death, as had the other three surgeons, gave, in addition, this testimony—that such aneurismal tumors as that Mr. Seton was operated upon for, are frequently cured by absorption; and he qualified as much as he could the assertion that the operation was "absolutely necessary;" but still the inference ("absolutely necessary") was not grounded on undeniably just premises, able as was his evidence on the whole.

It is, of course, well understood that those medical men who attended Mr. Seton prior to his death would endeavour to maintain the point of the operation having been thus necessary, if only to bear out the act of their having willed it and consented to it, and this was most conspicuous throughout their examination; and when the straightforward question "would the deceased have died without the operation?" was put to Mr. Mortimer (it was not asked of Dr. Stewart), the answer was decidedly that of one who did not speak from conviction or confidence in himself. Every surgeon with honesty and sound experience for his guide is well able to testify, that aneurisms of arteries of this size and superficial situation frequently exist and vanish without causing death; and one is very naturally surprised that the least thing should be omitted to give the accused the benefit of an attested truth!

With respect to the "absolute necessity" of the operation—a matter that will appear most doubtful to the medical world—we must strictly bear in mind the great fatality of such operations, the extreme formidableness of it, especially in the instance before us, where the victim was of a highly inflammatory temperament, where there existed the greatest possible obesity, and where the operator was obliged to cut through "full five inches of flesh" in the walls of the belly to get at the artery.* Neither must we forget the medical testimony, viz. that there was no immediate haste for the operation—that it was impossible to say (for this the

majority of the medical testimony went to say) whether Mr. Seton might not have lived had not the iliac been tied—and then that such tumors are often cured. And viewing all this with an impartial eye—viewing it as men who have but one object, the maintenance of truth and the forwarding of justice—there can be no doubt that an error was committed in not giving the patient the benefit of time, at least, to see if the curative process? of nature and art would not do something for the case. And when we reflect that the *injured artery was but a comparatively small one, a superficial branch without a name*, the size only of a little crow quill—that the patient did not die on its being first wounded—that its situation, unlike aneurisms of the principal arteries, as those of the aorta, innominate, subclavian, carotid, and femoral, which are often not fatal for months, and even years, was such as to admit of more or less compression and other local curative means*—and that if it had burst, it would not necessarily have destroyed life, I cannot but deprecate, not merely the precipitation, but the operation itself, which under all the circumstances was nearly sure to prove fatal. The remedy was, I contend, far more serious than the disease. But admitting, for argument sake, that it was necessary, it will then become a paramount question with many, was the deceased sufficiently recovered (eleven days after) from the severe loss of blood sustained by the wound, to undergo an operation so formidable? The system, it will be argued, had not time enough to rally, and bear with impunity this further demand on its powers.

It may be contended, perhaps, that Mr. Liston deemed the operation necessary! We know that the most eminent practitioners of Europe have often determined on operating, as the only means of saving life, when the afflicted person has at last recovered without any operation being performed. Besides, was not Mr. Liston rather pressed into this against some scruples of his own about its practicability? I believe he was. He certainly thought at the onset of tying the wounded artery instead, which he ultimately and very unfortunately abandoned, since this would have been attended with far less risk than tying the iliac itself. It is equally certain, I understand, that he was nearly relinquishing the operation after he had begun it, in consequence of the unusually great obesity of the patient, and other unexpected difficulties.

I am, Sir, your most obedient servant,

M. D.

Southsea, June 18.

* Dr. Stewart himself admitted, in his evidence, that he knew of a person with aneurism

* The artery wounded was only a collateral

Selections from Journals.

ON THE EMPLOYMENT OF COMPRESSION IN ANEURISM.

In the early part of last March, Dr. Bellingham made some very important additional observations upon this subject; his experience led him to the following conclusions:—

"1st. That the arteries to which pressure is applicable being far more frequently the subjects of spontaneous aneurism than those to which it is inapplicable, compression promises to supersede the ligature in the great majority of cases.

"2dly. Pressure has several advantages over the ligature, being applicable to a considerable number of cases in which the ligature is contraindicated or inadmissible.

"3dly. The treatment of aneurism by compression does not involve the slightest risk, and even if it should fail, its employment not only does not preclude the subsequent operation by ligature, but renders the chances of the ligature more favourable.

"4thly. Such an amount of pressure is never necessary as will cause inflammation and adhesion of the opposed surfaces of the vessel at the point compressed.

"5thly. Compression should not be carried even so far as completely to interrupt the circulation in the artery at the point compressed; the consolidation of the aneurism will be more certainly and more quickly brought about, and with less inconvenience to the patient, by allowing a feeble current of blood to pass through the sac of the aneurism.

"6thly. Compression by means of two or more instruments, one of which is alternately relaxed, is much more effectual than by any single instrument.

7thly. Compression according to this method is neither very tedious nor very painful, and can be maintained in a great measure by the patient himself.

"8thly. An aneurism cured by compression of the artery above the tumor, according to the mode laid down, is much less likely to return than when the ligature has been employed."

Dr. Bellingham gives a list of twelve cases of aneurism (eleven popliteal and one femoral) in which a cure has been effected by this mode since its introduction by Dr. Hutton in November 1842. He considers, and we believe justly, that the manner in which pressure brings about the cure of aneurism appears to be precisely that by which nature, under the most favourable circumstances, effects a spontaneous cure—by successive depositions of coagula within the sac until its cavity is completely filled.

cases of aneurism to which the ligature is not, as well as to some cases in which the application of the ligature would be likely to be followed by unfavourable results. For instance, when an aneurism has attained a very large size, the long-continued pressure of the tumor must act injuriously upon the collateral circulation, compressing the veins, perhaps obliterating the arteries in its vicinity, and causing oedema of the limb below the aneurism. If a ligature, under such circumstances, is applied, the limb is likely to fall into gangrene. This cannot happen in the treatment of aneurism by compression, which acts slowly and gradually, and can be omitted at any time." This is a very important hint, providing it is found to hold good in practice. There is, certainly, great danger in tying the femoral artery in cases of popliteal aneurism where the sac is very large.

[A case illustrating this fact occurred under our notice some years ago. A very powerful man was admitted into one of the metropolitan hospitals with a large circumscribed popliteal aneurism, for which the femoral artery was secured at the usual spot. Shortly after the operation, the sac enlarged; and then the limb swelled, and gangrene commenced in the foot. The limb was amputated; but arterial oozing, which it was found almost impossible to restrain completely, occurred from all parts of the stump, and the man died within twenty-four hours. It appeared that the secondary hæmorrhage depended, in great measure, upon the enlargement of the collateral vessels consequent upon the large size of the aneurism. The case left the impression upon our mind that neither ligature nor amputation could be safely had recourse to in instances of that description, where the sac was unusually large.—Ed.]

"Again," continues the author, "when an aneurism has attained a large size, if its contents are principally fluid, and its parietes much thinned, inflammation and suppuration of the sac very commonly" (?) "follow the application of the ligature, which may bring the patient's life into danger, and, at best, must render the recovery very tedious. This has never occurred yet after the use of compression, and such a result is evidently much less likely to follow it.

The author dwells on the applicability of pressure in cases where the coats of the artery between the sac and the heart are so much diseased that the vessel, instead of taking on the adhesive inflammation after the application of the ligature, ulcerates, or the ligature cuts its way through; in cases, also, where the patients are labouring under cardiac disease, and also where more than

all such instances the operation by ligature is contraindicated; but Dr. Bellingham considers that here pressure may be applied with the same prospect of success as in subjects in whom the heart and arteries are perfectly healthy.

"Lastly, if pressure should fail in curing an aneurism, (which, from the results hitherto observed, is very unlikely,) its employment will not preclude the subsequent operation by ligature; but, by retarding the increase of the aneurism, and assisting in the establishment of the collateral circulation, it would tend rather to render the chances of the operation by ligature more favourable."

In answer to the objections which have been made against pressure, Dr. Bellingham states, that it is sometimes less tedious than the usual plan: as in a case read at the last meeting of that Society, the pulsation of the aneurism probably ceased in less than a week after the application of the two compressors; in some of the others the cure was nearly as rapid; and if in a few of the earlier instances, in which this mode of treatment was adopted, a longer time elapsed before a cure was effected, it probably depended upon the imperfection of the apparatus, or upon two compressing instruments not having been employed together. "With respect to the treatment by compression being more painful than the operation of placing a ligature on the vessel, including the subsequent dressings, until the ligature separates, and the wound is healed, this might have been an argument against the method when so great a degree of pressure was supposed to be necessary as would obliterate the vessel at the part to which the instrument was applied; but the fact is, the application of the compressor, (according to the rules laid down now,) really relieves the pain which the aneurismal swelling occasions; after it has been applied for a certain time it does, however, cause pain, but the patient can then relax it after having tightened the second instrument, and so continue alternately to compress different points of the vessel for any length of time.

Dr. Bellingham answers the objection that the period which has intervened since the re-introduction of this method of treating aneurism is too short to allow us to conclude that the cures will be permanent, by the facts that two of the cases of aneurism, treated in Dublin, have remained well for upwards of two years, and two others for nearly the same period, and that in none of the remaining cases has there been any tendency to, or appearance of a relapse; but, even "if there should be a relapse, would not pressure then be as applicable as in the first instance, and would not its employment be much more certain

and safe than the application of the ligature a second time?" Dr. Hutton thinks that the disease is as likely to return after the operation by ligature, as after the treatment by compression. Dr. Bellingham supports this opinion by interesting pathological arguments which are probably correct; but cases have occurred, in this country, where pulsation re-appeared in the sac after it was thought that compression had effected a cure. The means employed here were probably not so complete as those now adopted; still the decision of this question will require time, and the comparison of a greater number of statistical facts than the supporters of either argument appear to possess at present.

The improved instrument, now used by Dr. Bellingham, is a modification of a carpenter's clamp, which was invented by a patient, under Dr. Harrison's care, for popliteal aneurism. It consists of an arc of steel, at one extremity of which is an oblong padded splint; the other extremity terminates in a quick screw, to which a pad similar to that of the tourniquet is attached. The principle of this instrument is exceedingly simple, so much so that the patient can apply and remove it himself, and it can be made of any size, so as to compress any vessel within the reach of compression. The plan of treatment consists in the employment of two instruments along the course of the artery leading to the aneurismal sac; when the pressure becomes painful at one point this can be relaxed, the other having been first tightened; and by thus alternating the pressure, we are enabled to keep up continued compression for any length of time.

The above valuable particulars are taken from a report in the Dublin Medical Press of March 19th, 1845.

CASE OF POPLITEAL ANEURISM CURED BY COMPRESSION OF THE FEMORAL ARTERY. [

[We extract the details at some length, as they explain the mode of applying what appears to be a most ingeniously devised apparatus.]

Mr. William J. Newcombe reported this case to the Surgical Society of Ireland. Its subject was a gentleman, æt. 26, in whom the aneurism arose from an injury, received in hunting, during the last season. The tumor occupied the entire of the upper part of the popliteal space, which it filled, so that the edges of the hamstring muscles could not be felt; it was prolonged thence along the inner side of the thigh, as far as the internal condyle of the femur. The parietes of that portion which extended along the inner part of the limb were so thin that apprehensions were entertained lest they might give way. On the 17th of October, Mr.

Newcombe applied the apparatus for compression of the femoral artery. Two instruments were used similar to those described by Dr. Bellingham in the *Dublin Medical Press* for August 28th, 1844, and in the same manner as he had employed them in a similar case. The pressure was employed thus:—One clamp was applied to the femoral artery at the lower part of Scarpa's space, sufficiently tight to greatly diminish, without completely arresting, the flow of blood through the vessel, and nearly to stop the pulsation in the tumor; the other clamp was applied higher up upon the limb, but not tightened. When the pressure from the first clamp became inconvenient, the second was tightened, and the other relaxed. By thus alternating the action of the instruments (which it was found necessary to do at intervals varying from half an hour to an hour and a half), and by shifting them, as occasion required, to various points, ranging from the pubis to the edge of the tumor, permanent pressure was enabled to be maintained. It would have been easy to have stopped the current through the artery, but, when pressure was carried to this extent, the patient complained of palpitation of the heart, which, however, ceased when the instrument was slightly relaxed. The nature of the disease, and the principle of the treatment proposed, had been explained to the patient, who materially aided in the management of the case. No bandage was applied to the limb, or over the tumor. No pulsation could be felt in the popliteal or tibial arteries. Low diet was enjoined, and digitalis was administered, with an opiate at night.

18th.—Passed an uneasy night, having been unable to bear pressure on any one point for many consecutive minutes; pulsation cannot now be felt in the tumor; the parietes of the sac, where they were previously so thin, are already perceptibly thickened; the pulsation in the femoral artery is obvious, but the blood flows through in a diminished stream; pulse 1:0. As it was now found that pressure could be borne for a longer period when applied below the origin of the profunda, it was chiefly applied in that situation.

19th.—Had some sleep. The tumor not only continues without pulsation, but has perceptibly diminished in size, especially in its popliteal portion, where the edges of the hamstring muscles can now be felt; while the solidity of its larger portion has still further increased. The femoral artery can be traced to the edge of the tumor, beyond which no pulsation can be detected, either in its trunk, or in that of the popliteal artery. The articular arteries of the knee are enlarged; a large arterial branch can be

felt running along the internal surface of the tumor; some small branches ramify over it in different directions; some slight soreness is complained of over the saphena nerve; pulse 80. On the following day, pressure could be borne for a much longer period in one situation; a slight pulsation was detected in the anterior and posterior tibial arteries. The instrument was tightened, so as to stop the circulation in the femoral artery; no palpitation followed.

On the 24th, the tumor had decreased, and was harder; the instruments were removed for a short time; no pulsation in the tumor followed.

Omit. Digitalis.

27th.—Moderate pressure was maintained on the artery since last report, but this day it was entirely removed. The tumor has continued to decrease, particularly in its popliteal part; no palpitation.

A cold evaporating lotion ordered to be kept constantly applied.

From this time the tumor continued steadily to diminish; no pulsation could be felt in the popliteal artery, but the tibial vessels resumed their natural condition, and the limb regained nearly its proper size.

On the 26th of November the patient was permitted to move from his bed to a sofa, having an elastic bandage round the limb. A few days subsequently he was allowed to walk, with the assistance of crutches, the foot being supported by a sling.

Feb. 14th.—Not the slightest trace of the tumor can now be detected; the use of the limb is perfectly restored; the femoral artery can be traced to the place where the tumor was, but no further; the popliteal is hard and cord-like.

During the entire course of this treatment there was no perceptible difference in the temperature of the two feet.—Abridged from the *Dublin Medical Press*, Feb. 26th, 1845.

[We believe that this is the tenth or eleventh recorded case in which aneurism of the popliteal or femoral artery has been successfully treated by pressure during the last two years. It appears to be the opinion of some surgeons that, where this plan is adopted, the disease is likely to return, in consequence of the still pervious state of the femoral trunk. The operation, doubtless, requires the test of time; but in several of the cases a considerable period has elapsed without any reappearance of the disease; and in one of Dr. Bellingham's patients the limb remained perfectly sound fifteen months after treatment.—*Ed. Gaz.*]

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURES,

By BRANSBY B. COOPER, Esq. F.R.S.

Surgeon to Guy's Hospital.

Disease of the Knee-joint—Amputation.— Lithotomy.

THE first case to which I wish to direct your attention to-day is that of the man whose leg I amputated about a fortnight ago.

T. M., æt. 30, employed as a coachman at Hemel Hempstead, was admitted into Naaman, No. 22, on May 19th, 1845, under the care of Mr. Cooper, for diseased knee-joint. He is pale and rather emaciated. The disease commenced about three years ago, with a stiffness of the left knee-joint; this was treated as a case of rheumatism by liniments and internal remedies. Continuing, however, to get worse, he left his situation, and went to live among his friends at Dorking. His knee was there cupped and blistered, but, finding he received no benefit, he came up to London, and was admitted into the hospital, under Mr. Cooper's care, last July. About a fortnight after his admission, he was seized with a violent shivering, and tenderness of the abdomen, the knee also being much inflamed. Dr. Addison considered it to be a case of peritonitis, and recommended bleeding, fomentations, and antimonial medicines; which plan of treatment was successfully adopted. After a time he so far recovered that he was removed to Stephen's ward, where his general health considerably improved, but his knee became gradually worse. It was blistered, but without benefit. At last amputation was proposed, but he could not make up his mind to submit to the operation, and therefore left the hospital, and returned to Dorking, hoping that the change of air would be of service to him. While at Dorking, two abscesses, one above and another below the knee, which had formed during his residence in the hospital, burst. Another also formed higher up in the thigh.

When he was admitted on the 19th of May last, the upper abscess was opened, and a quantity of very foetid matter evacuated.

May 21st.—Mr. Cooper amputated the limb at the junction of the upper and middle thirds of the thigh, by making a circular incision through the integuments and fascia; and, at right angles to this, at the back of the thigh, another incision, about two inches in length. The integuments and fascia were then reflected, and the muscles divided, and the bone sawn in the usual way. Three arteries were tied. Venous hæmorrhage was

so copious, that a ligature was put upon the femoral vein. The flaps were brought together laterally, and retained in proximity by adhesive plaster. He bore the operation well.

Upon an examination of the limb, it was found that all the abscesses communicated with the interior of the joint, which was completely denuded. The condyles of the femur were covered with that granular, pulpy growth particularly described by Sir B. Brodie. The crucial ligaments were softened, but, as if to compensate for their deficiency, the mucous ligament was very much thickened, firmly uniting the patella to the femur.

May 24th.—Stump dressed, and the wound found united almost throughout its whole extent.

26th.—Stump dressed again; going on as favourably as possible. No lodgment of pus in any part of it.

31st.—Continues to improve in every respect, taking his two mutton chops, two pints of porter, and six ounces of wine a day.

June 2d.—Yesterday evening venous hæmorrhage to the amount perhaps of half a pint. The ligature of the vein and another one came away. There is a foetid grumous discharge from the stump.

3d.—Discharge from the stump copious, of the same description as yesterday. Passed a bad night. Feels very weak. Pulse quick, full, and jerking, but yet compressible. Perspires profusely. Bowels not opened since the 1st.

To take a calomel pill, and two hours after half-an-ounce of castor oil. Omit one mutton chop, and porter, and increase the wine to 3 oz. a day.

4th.—Bowels have been opened once freely, since the castor oil. Pulse 160, feeble. Passed a very good night. Skin feels sodden from the excessive perspiration. Appetite bad. To take the following draught twice a day—

R Quinæ Disulph. gr. iss.; Acid Sulphuric Dilut. ℥viij.; Liq. Opii Sedativ. ℥iv.; Syrupi Aurantii, ʒj.; Aquæ Destillat. ʒj. M. ft. Haustus.

5th.—There is now a discharge of more healthy pus, but he still continues in a very weak state.

7th.—The discharge is very much decreased, but his pulse is weaker, and 160 in the minute. Had a very restless night, and complains that he feels indisposed to sleep, although free from pain.

8th.—He appears to be sinking. Pulse very rapid. The discharge from the stump much increased. Was ordered—

ʒviij. of brandy, and twenty drops Tr. Opii directly.

9th.—Had some tea at 6 o'clock last night, and seemed to enjoy it. He soon fell asleep, and died at 4 A.M.: his respiration so gradually becoming less and less frequent, as to render it difficult to those who sat with him to mark the precise period of his dissolution.

Sectio cadaveris, thirty-three hours after death.—The heart was rather large, pale, and flabby, and the right ventricle full of a very loose and watery clot. Lungs perfectly healthy, excepting some old dense adhesions on the right pleura. The abdominal viscera were healthy, with the exception of the liver, which was considerably enlarged, tumid, coarse, pale, mottled, and easily lacerable. On examining the stump there were several collections of pus found in it close to the bone. The femoral vein and artery were both healthy, but the clot in the artery was rather loose, although it had proved sufficient to prevent any bleeding upon the separation of the ligature, which had come away. On making a section of the bone, there were found numerous abscesses in the cancellated structure, the cavities of which were lined with distinct progenic membranes. It would seem, therefore, that in this case, the urgency of the symptoms, and subsequent fatal termination, had not resulted from the effects of the ligature upon the vein, but probably upon the diminution of constitutional power, in consequence of the protracted drain of purulent discharge, and the continued irritation kept up by the abscesses formed in the substance of the femur.

REMARKS.—The operation which I here performed is not that which is usually directed. It differs, first, in making an incision at the back of the thigh; but this mode offers two advantages, it allows the free discharge of purulent matter during the healing of the wound, and also facilitates the retraction of the skin in the operation; in the same way that the slit in the cuff of the coat allows of its being readily turned up. It differs also in dividing the skin and fascia in the first incision, so as to lay bare the muscles; you are usually directed to divide only the skin, so that the loose cellular membrane attaching it to the fascia underneath may allow of its ready retraction. But, by doing this, you completely isolate the skin, and cut off its principal supply of blood, which I think is very frequently the cause of its sloughing afterwards. The reason that I tied the vein was, that the man's health had been so impaired by the long continued discharge from the abscesses, that I was anxious that he should lose as little blood as possible; but I do not consider it good practice, and wish that I had banded the stump, and waited to see the re-

sult. Notwithstanding the statistical reports, which seem to favour the practice of placing ligatures on bleeding veins after amputations, still, in my own experience, I have witnessed such violent symptoms follow, that, only after the failure of every other means, should, in my opinion, a ligature be placed upon a vein. It is true you do not have the same source of danger in the application of a ligature after amputation of a limb as when applied upon a varicose vein, viz. that of distension of the vein below from the return of blood being impeded; yet it may be readily supposed that the truncated vein has still some function to perform in receiving the contents of the lymphatics which run along it, and is not therefore entirely useless in the restoration of the stump. It may be questionable whether this patient was not a little overfed after the operation. He had suffered for a long time from profuse discharge from the abscesses, and required plenty of nourishment, a large quantity of which was most probably thrown off as pus. But when this discharge was suddenly stopped, the nourishment was taken into the system, and may have produced bad effects. In the treatment of this case, you observe, dietetic and pharmaceutical measures were ineffectual, and the necessity of surgical operation was sufficiently evidenced by the appearances presented on an examination of the joint after its removal. As I have already stated, I recommended the operation some time ago, and it would have been better had the patient consented; for then he was not worn down by the discharge from the abscess, and would probably have been in a better state to have borne the restorative action. Indeed, it often requires the nicest judgment (and which is only to be acquired by experience) to decide as to whether a limb shall be amputated or not; for there is frequently so nice a balance between the probable powers of the constitution to restore, and of the liability of the health to sink under protracted disease and suffering, as to induce a difference of opinion even on the same case; and conflicting views not unfrequently increase the difficulty, at a moment too when the delay of a few hours only may preclude the possibility of ever after performing the operation. The precise period, then, at which amputation is to be performed, either for accident or disease, is a most important consideration; for, if advantage be not taken of the propitious moment, constitutional disturbance may supervene, and the patient fall a sacrifice to the want of decision, which constitutes indeed one of the highest qualities in a surgeon.

The next case is that of G—S—, a child about 2 years of age, who was admitted

into Charity No. 25, on May 21st, 1845, under Mr. Cooper's care, for stone. He appears to be rather emaciated, and his prepuce is rather elongated. On the 22d May he was sounded, and a large stone was supposed to be detected. His urine is clear, and highly acid.

June 3d.—Mr. Cooper performed the operation of lithotomy, and extracted two small stones. He was then removed to bed, and his knees bent over a pillow, but he did not long remain in this position from restlessness.

6th.—Sleeps well; bowels open; appears to be very comfortable.

Well, gentlemen, I performed this operation step by step as I described to you at our last meeting. In the first incision, you should take care not to cut too high up, so as to open the scrotum, for if you do the urine readily passes into the loose cellular tissue, and sloughing ensues. I have more than once seen a man's testicles, only surrounded by the tunica vaginalis, hanging by the spermatic cords, from sloughing of the scrotum, and caused by this error of beginning the incision too high up. On passing the forceps into the bladder, you observed, I have no doubt, a large quantity of water escape; some surgeons are very particular about the patient's retaining his water for some time before the operation in order to have the bladder full, but I rather prefer an empty bladder, or at least one containing only a moderate quantity of water; for if it is too much distended, when you cut the prostate, and the urine is evacuated, the bladder falls, and then your incisions are less likely to remain in the same relation to each other. You saw that I was lucky enough to seize each stone on the first attempt to grasp them with the forceps; I say I was lucky, though I do not know that it is a sufficiently dignified term, although a correct one; for I might have been searching over the bladder for a long time before being able to seize them, for, as I told you before, this step is quite beyond the control of the operator. You see I was mistaken as to the size of the stone; this was, I suppose, owing to both the stones being freely moveable, and I could not touch both at once with the sound, and therefore I felt a stone wherever I directed its point, which gave me the idea of one large stone. In children lithotomy is a very slight operation; I do not think I have lost more than one child since I commenced operating for stone; and it appears to be a trifling injury in comparison with what it is upon adults. This is probably owing to the organs interfered with, not being fully developed—they are not potent, and are not of such importance as after puberty. And, again, when the

powers flag, and the irritability of the organs begins to subside, as in old age, it is not so dangerous an operation as during the period of procreative development.

LECTURES

ON CERTAIN

METALS & METALLIC PROPERTIES,

Delivered at the Royal Institution,

By PROF. FARADAY, D.C.L. F.R.S. &c.

III.—April 26.

TIN.—*Malleability—Combustibility. Oxidation. Difference between tin and iron. Metals which displace each other. The use of tin in dyeing. Properties of bronze.*

The metal to which we shall direct our attention to-day is *Tin*, and, with your permission, I will begin an experiment which will occupy part of the time before I enter into the general history of this metal. I will, however, call your attention to the circumstances connected with it, in order that you may understand the result. This is a tin plate,—a thin plate of sheet iron, made clean, dipped into melted tin, withdrawn, left to itself, and it is thus coated on both sides with the metal. I am preparing to scratch a few marks upon this piece of metal, which you are quite sure must expose a perfectly clean surface, since the metal is now only removed from it. I shall immerse it in water, using even distilled water for the purpose. I shall now leave it to go on to whatever action may take place on the surface of the metal, wishing you to remember that the greater part of the surface is covered with tin, while in the parts scratched the tin has been removed, and the iron plate exposed. I have no doubt that the chemical effect which I wish to point out, will take place in twenty or thirty minutes. It is manifest that the rate at which the action proceeds must depend on the power which metals have generally to attract oxygen in different degrees from the atmosphere or other sources capable of supplying it. It is my wish to illustrate this character among metals by that experiment among others.

Tin is a metal which is never found native—that is to say, it is never met with in a perfectly pure metallic state. On the table there are different specimens of the ore, or compound of this metal with oxygen, which forms a very remarkable substance. These beautiful white silvery-looking specimens are tin combined with oxygen; probably three-fifths, or even a larger proportion of these ores is metallic. These compounds sometimes occur in masses; forming incrus-

tations in the cavities of the rock, or as veins. Behind me is a drawing of the Carclase tin mine, in Cornwall, whence the specimen before you has been procured. The reduction of this ore is carried on by carbon. The carbon attracts the oxygen, and the metal runs out in the state here represented. I have been making experiments in order to develop the true *colour* of the metal. I did not know the colour till I saw it running freely in a liquid state. You usually see it of a very white creamy colour, but when first poured out, before it has exerted any attraction for oxygen, it is exceedingly beautiful, and vies with silver in lustre as a metal. When the tin in this ladle is melted, I shall pour it out, in order that you may observe the purity of its surface, and other circumstances connected with it. On being melted and solidified, tin forms a very *malleable* and soft metal. Here is a large sheet of tin, and you see the way in which it unrolls; it has been passed through a mill to bring it into this condition. By a process of manipulation the sheets can be made thinner, and reduced to what is termed tin-foil. It is interesting to observe how the men manufacture these sheets of malleable metal in a way similar to that described with respect to gold and silver; they can make them so large as to cover the whole floor with one sheet of tin, and without a hole in any part of it. They will lay plates 4, 5, or 6 feet thick, on heavy anvils, and ten or twelve men will stand hammering on this soft metal with such exactness that at last they will produce a multitude of sheets alike in every part, most valuable for silvering mirrors of great price, and which are sent all over Europe and to America. It is curious to observe how price is influenced by workmanship. Small sheets are less valuable in proportion than large ones, and hence the art is to make them large. Some of these sheets are worth 152 guineas a single sheet, in consequence of their size and the perfection of their surface. The metal before us is now melted; the surface is slightly oxydised; it is very liquid and beautiful, and I will pour it out, after scraping the surface, in order that you may see it. The lustre is beautiful, and it is that which, carried into mirrors, gives them a splendour which perhaps no other metal can produce.

There are several uses to which tin-foil is applied; among others, to exclude dampness. It is frequently used for this purpose on walls behind paper-hangings. It is also employed for the purpose of preserving plants. Here are two specimens of turnip-tops, gathered at the same time; one specimen has been preserved some hours wrapped up in tin-foil, and the other not, and you observe the remarkable contrast they present. [The one was quite fresh, the other

withered]. It was a great desideratum with the botanist to have a portable article that would preserve plants from injury, and it is now supplied to him either by tin plate in boxes, or by tin-foil, which will keep them fresh sufficiently long for his purposes.

The great point to which I wish to bring your attention to-day regarding the metals generally is, their affinities, or the attraction of metals for each other, and for ordinary substances with which they come in contact.

I must limit myself, in so short a course, to single illustrations of any point that I bring before you. I cannot pretend to do more, and therefore I must now confine my attention principally to the *affinities of metals for oxygen*, illustrated by what happens with the most common elements. Those who have never considered metals with regard to their chemical power will be surprised to find that they are, for the most part, very combustible bodies. This fact is of great importance in proceeding to the full extent of the consequences that flow from it, and I will therefore, with your permission, commence with this as the foundation of further remarks.

On applying zinc to the flame of a spirit-lamp, you perceive that it is combustible; and when it is burned, it is no longer flexible or soft metallic zinc, but becomes something else—a white powder—and I can rub it in my fingers. It burns like wood, except that something remains behind, which is the great distinction between metal and ordinary fuels. That which is left is a compound of the metal—in this case, of zinc—and oxygen. It is my business to show you one or two illustrations of the effect of this affinity of metals for oxygen, and I therefore propose burning one or two metals. After the first fact is established that they do burn, it becomes an essential consideration to determine what it is that they produce, and the manner in which the substances that result are formed. I shall also endeavour to vary the mode of burning metals, in order that I may compress the subject into as short a course of experimental illustration as I possibly can. One mode of burning metals is by exposing them to a flame of alcohol, or other ignited bodies. I will now show that they burn in the same way as paper or charcoal. I have here some iron-filings, which I can put into a powerful fire and light, and they would go on burning. I have seen a bar of iron an inch square lighted in this way, and it has burned like an iron torch without flame. When once lighted by the simple application of an intense heat in common air, I have seen two or three feet of it entirely consumed. On shaking these iron filings through the flame, you observe how readily they burn. You are sure nothing produces it but the substance I drop into

the flame. Iron falls heavily through the air, and if the mere passing through the flame is enough to light it, certainly that metal must be regarded as a combustible substance. Put it in an ordinary fire, and it will not burn, but place it in a smith's forge and it will become immediately ignited. There is a peculiarity connected with the burning of iron which distinguishes it from other substances. It is exceedingly striking, and must command your attention: I refer to the way in which the small particles of iron burn as expanding stars. Each particle in a state of combustion gives off fragments, and they also burn in a stellate form—the rays themselves become the source of other rays: the same result is shewn if iron be burned in other ways. I have here a little gas jet, and I have also a supply of oxygen. You have seen the consequence of the combination of oxygen found in the air with the metal that I heated in the air; but now, having a larger and purer supply of oxygen, I can burn the metal at pleasure. Having once brought it to a fusing point, and ignited it, you see how beautifully it goes on burning, throwing out these singular stars of luminous metal.

I will now take another metal—antimony, and this will burn in a different manner—in its own peculiar way. When once it has become red hot, a white fume rises, and when it is in a state of combustion, it not only burns to the last, dividing itself into numerous red hot globules, but leaves traces of its combustion on the floor. I will now give you another experiment. Here is a large sheet of paper, with the edges raised in order to confine the particles upon it. I throw the ignited metal upon it, and you observe the beautiful and singular dark outlines which the metal, in its conversion to oxide, leaves upon the surface of the white paper.

At present, I limit myself to a mere general view; otherwise, I might go on burning all the ordinary metals: even gold and silver, and sometimes platinum, may be burned. I may hereafter return to this subject.

True combustion, or that which depends on the actual affinity of the particles of metal for the oxygen in air, always ends in leaving behind a compound that contains the substance both of the metal and oxygen. If I take iron, and show you, not a clear burning substance, but a dull red body, this is very similar, in its general character, to what is produced when filings are burned; and, indeed, the black coat which commonly covers iron is actually the very same substance as that which is produced when the iron is burned on the charcoal, and is as much the result of combustion in the one case—although silent and slow—as in the

other. In the red rust, the action of oxygen has gone still further than in that which has been merely exposed to the fire, for in this, there is a higher degree of oxidation.

This action of burning depends upon a very powerful property of metals—and I take them as a class—attracting oxygen, or other substances, because they can be burnt with other elements besides oxygen. All that I wish to impress upon you is, that we are dealing with a property belonging to metals which shows their great tendency to combine with other bodies. In certain cases, a candle, or even gas, does not burn with greater intensity than do metals at a sufficient heat.

But then there comes an extraordinary distinction between metals and ordinary fuels, namely, as to the residuum that they leave behind. If the antimony appears to pass away, it does not pass off as gas, but it forms a kind of solid smoke, which is susceptible of being condensed; but when charcoal is burned it becomes an aerial substance, or an invisible gas, which escapes into the atmosphere. Without this peculiar property in metals they could not be produced for the common purposes of life as they now are.

If iron, in combination with oxygen, had formed the same gaseous substance that ordinary fuels do, it would have burned with greater power than phosphorus, and everything would have been destroyed by it when once ignited. Although charcoal is a strong combustible when heated in the fire, yet the metals possess a greater power of combustion at high temperatures. Suppose iron could take fire like other fuels at a low temperature, it would burn away, producing destruction to all around it. The same would be the case with lead, tin, zinc, copper, and almost all those metals that are in common use amongst us.

It is interesting to observe, when we compare body with body, that by mere iron nails we can firmly bind masses of wood together; but if it were not for the circumstance to which I have referred, *i. e.*, incombustibility at low temperatures, and the formation of a fixed residue at high degrees of heat, the nail would be a tinder-match, and ensure the entire destruction of the wood. If that little film of black substance which envelopes a plate of iron were not there, it would take fire under favourable circumstances; but being there, you may build a furnace with it, yet it keeps its strength. Such are the conditions given in nature, and such is the mode in which we can follow them out when we compare them closely. It is this which induces me to place before you what would be commonplace knowledge, if you did not look beyond the mere surface of things.

The metals have the property of *rusting*.

I have been speaking of what would happen with metals in consequence of their strong attraction for oxygen, were it not for the property of rusting, to which I now call your attention. All the common metals, except tin, rust; they become duller and duller up to a certain degree, lose gradually their lustre, and then the process goes no further. Instead of this rusting being a destroyer of the metal, it is a preserver: for, even in the case of iron, which rusts quickly, as compared with other metals, if it be dipped into tin, it comes out coated with it, and it is preserved beautifully. The iron off which I scratched the tin at the beginning of the lecture begins to show the effect. [Red streaks of oxide of iron had begun to appear in the scratches.] If it were exposed for a couple of hours to the action of water, the iron would become quite corroded, but where the tin remains the iron is protected, and the tin itself appears unaffected.

How is it that this metal can protect itself, and the iron that is under it? It is simply owing to the substance formed on the surface by the attraction of oxygen, which is so adherent to the metal beneath. It gives a protection which no varnish, or any other kind of application, can afford. Take a copper, or a tin plate; they are both protected in their metallic state by a thin coat formed in the first instance of oxide. It is only because this coat is so exceedingly compact, close, and adherent, that it passes for nothing—a mere film of tarnish. You think you see, or touch, a piece of tin; you cannot detect the film, except by close examination. We know it is there, but it is only by optical phenomena that we can measure its thickness. It seems clean and beautiful, but if you rub it off, you give the metal beneath a new character; the beautiful lustre, however, passes off the first moment up to a certain point, and then it retains the state it now exhibits. The body formed by the combination of oxygen with iron is different. The oxide does not adhere to the metal beneath, it forms upon it little spots, or porous tumuli. It is not an investing varnish, but the process goes on through the pores of the rust, especially if the metal be placed in a damp atmosphere. This is the reason why we find a difference between copper, iron, tin and lead, when used for roofs, or other external purposes. The iron alone is eaten into and destroyed, by this want of adhesion in its rust to the surface of the metal.

It is curious to observe, in some cases, how tin, a metal having a slight attraction for oxygen, protects other metals from oxidation: In Canada, tin plate is used for the roofs of houses; I am told that you are dazzled by the lustre of the setting sun upon the roofs; and there, although it is exposed to the atmosphere year after year, it does not

decay, because the superficial coat of oxide protects the tin and iron beneath.

When a metal combines with oxygen it takes a certain amount, and it is always the same, or in equal proportions for the same metal. The following table shows the difference between the quantity which the respective metals take, when burned with a given quantity of oxygen; for the numbers represent the respective weights of the metals which combine with eight parts of oxygen by weight:

Gold	200
Platinum	99
Copper	32
Tin	58
Lead	104
Iron	28
Mercury	200
Zinc	32
Silver	108

There are important differences among these metals in this respect, affecting not only artificial arrangements but the course of nature: you are not to think that these differences are without interest or utility. If time permitted me to dwell upon the oxides of iron and tin, I could trace them out in nature, and shew that that which a workman makes into an iron knife, or bar, is used to break up the soil, to break down the rock to fragments, to ameliorate the condition of the earth for agricultural purposes; and a thousand benefits result from these particular properties of bodies, which we cannot think are given to them without an end in view of the highest benefit to man. We often fail in endeavouring to trace out the evidence of God in creation; but we never see a case where ability and beauty do not predominate. Although it is presumptuous to think that we can point out what is wisdom in God, yet we can, to a limited extent, follow the indications which we meet with of that attribute as displayed in nature and her laws; and, although the longer we travel on in science, the more mistakes we make in estimating the works of a Creator, yet we can never err by placing too high a value upon the benefits conferred on man.

One other point, before I leave the affinities of metals for oxygen, and then I will pass to another part of the subject. This affinity varies in the amount of substance carried into action, and varies also in the process in which it is carried into action. Though all metals have affinity for oxygen, they do not possess it in the same amount, or to the same degree. For instance, copper, mercury, silver and iron, are amongst the metals I am going to deal with. I make these experiments, in which I compare the affinities of these substances one with another. Here is a solution of copper. To

economise time, I have satisfied the affinities of copper for oxygen, and I have further satisfied the affinities of the compound, *i. e.* the oxide of copper, by uniting it to an acid; and here the copper is in the state of salt.

Now I will take a plate of iron, and put it in the copper solution, and you will possibly see a striking illustration of the difference between the affinities of the two metals. The moment I do so, the copper is brought out in a pure state, and deposited on the iron, simply by the introduction of iron into it. If I had taken silver, and put it in this, it would not have happened: the silver will remain just as clean as when it went in. By putting in iron, the copper cannot hold what it had of oxygen. The iron is not unaffected; it disappears in the solution just as fast as the copper is reproduced out of the solution. The numbers in the table may represent the proportions generally; the quantity of the one brought out depends on the quantity of the other dissolved—28 parts of iron will displace 32 parts of copper. You cannot, therefore, doubt that iron has a stronger affinity than copper for oxygen and acid. On putting copper into mercury, copper can take mercury, or make it come out of the solution, just as iron does copper. As I pour a solution of mercury over a clean surface of copper, the copper is mercurialized, and acquires on rubbing the bright lustre of quicksilver. It has driven the mercury out of the solution in the way in which it was itself driven, and by iron. So I might go through nearly all the metals, by shewing that you can replace them one by another. You see on the table a beautiful illustration of the way in which lead can be brought out. These crystallizations are formed of masses of lead which a few days ago were dissolved in water contained in this vessel. I have put zinc into the solution, and the zinc has displaced the lead. It is quite clear from these results that copper has less attraction for oxygen than iron, and lead less attraction for oxygen than zinc. I might thus go on to prove, that there are many variations of this kind, and it is important for us to notice this in carrying on our operations.

There is one particular point about tin; its peculiarity of chemical action is very important. Tin, lead, and copper, all have special uses in the arts. Tin has been found to have an extraordinary power through chemical affinity of combining bodies, and one of these combinations presents the most brilliant colours. Who requires to be told that colour, as in the art of the dyer, is important in civilised life? Tin is used in the state of salt (Dyers' spirit) in fixing colours on stuffs, and making them take a strong hold of other bodies. We have an illustration of its power in its supplying a beautiful dye for

red silk. It is almost the only substance that can do this. These skeins of organzine silk are dyed by the action of tin: no other metal can be substituted for this particular purpose. If I take a certain portion of tin in solution, having its affinities satisfied, I can prepare this silk for dyeing by immersing it in the hot solution of the salt of tin, and then draining it. Here we have cochineal the colouring matter alone, and here we have the solution of tin alone, while in the middle glass there are tin and cochineal in combination, the colour of the latter being heightened and rendered brighter. Here is a substance (ammonia), that is able to exclude tin from combination with acids: the tin is coming down as oxide by the addition of ammonia, and the cochineal is now combining with this oxide. The cochineal is dissolved; the oxide of tin falls to the bottom, and removes the colour. This is the process by which the dyer proceeds in dyeing silk. First, he puts into a vessel some water, and some preparation of a salt of tin—what he calls tin spirit; then he puts into another vessel a good deal of cochineal, and a little tin spirit, and he makes both vessels hot. He carries the silk round the tin bath, then it comes to the cochineal bath, and he boils it. He must not use an iron vessel; he must take care to have no other metal in use than tin: for any other metal will alter the colour. He has commonly three or four vessels, and if the silk is not red enough, he will have a vessel with the dye of rather a deeper colour. He follows this process with any of the dyes that give pink or scarlet, or their different shades.

I must hasten to another part of the subject, namely, the affinities of metals one for another. Inasmuch as these metals vary so much with respect to their affinity for oxygen, what will happen when they are combined one with another? Important consequences; and I shall occupy a few minutes by stating them. When tin and copper are melted together in a furnace, which is the common way in London, they produce what is called *bronze*. I shall confine myself to bronze, because it illustrates the nature of alloys. It was this on which the ancients depended for cutting instruments, and for other important articles. I am happy to be able through the kindness of friends to shew you specimens of various alloys of copper and tin. When these metals are melted together they form an alloy of one character; but there may be very different compounds, varying according to the proportion which is used of each metal. Copper 85, and tin 15, will give what is called bronze; 2 copper, and 1 tin, will give an alloy, but it is very unlike bronze in appearance, being white, and admitting of a high polish. Here is a plate formed of it, 22

inches in diameter, and I call your attention to it on this account; it was polished many years ago, but the upper surface is as bright as it was the first day it was polished. Here is a beautiful specimen of the bronze prow of a Greek or Roman ship. It was found by some fishermen at the bottom of the sea, near to where the battle of Actium was fought. There is reason to suppose that it was there 200 years before Christ. Here is the place where the nails were inserted. The ancients had an alloy of tin and copper, but they hardly knew zinc, and they speak of bronze, not of brass. What we call brass is a compound of copper and zinc. There are many facts which show that the ancients were in the habit of using bronze for all the purposes of iron, not being able to work the latter metal into the form in which we now have it.

There are some curious points respecting bronze, which I shall press into this lecture. Up to this day we use bronze for certain purposes, which are important; I refer to the use of artillery, and some curious effects came out during the severe service in the peninsular war, illustrating the general history of bronze. In this country great progress is made in the use of cast-iron guns. I have been told by many officers that an immense deal depended during that war on the use of our iron guns. During the war, such was the distress for artillery, that actually ships' iron guns were unshipped and were used as land artillery, and many curious results were observed. At St. Sebastian, iron guns were used, out of which 300 rounds were fired without interruption: whereas the bronze guns, which the French used, would not stand more than 100 rounds. The vent of the bronze gun became irregular, and split open, and the whole shape of the gun was changed. The enormous bronze mortar, near the Horse Guards, was destroyed after firing 100 rounds. After it has been so frequently heated, the alloy becomes quite soft, and the piece can be no longer employed, for it cannot stand the concussion; still, a bronze gun will bear a greater charge than an iron one. I have here a bronze bell, which will give a certain sound; when moderately heated it nearly loses its sound, but when cooled again, the sound returns. This experiment will serve to show that the particles of bronze are affected in their disposition and cohesive force by a moderate degree of heat. Here is a copy of a drawing, published in a pamphlet on the Peninsular war, in which are represented the altered forms of the touch-holes of guns used on that occasion. The touch-holes, by successive firing, were blown open, and a part of the charge came through. Here are the vents of two Spanish guns thus destroyed. Guns are by

this means frequently thrown out of use, but neither iron nor copper blow out in this way: it appears to be peculiar to this soft alloy of tin and copper.

Original Communications.

ON

A NEW METHOD OF PREPARING MEDICATED TINCTURES.

By HENRY BURTON, M.D.
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IN a paper published in the *MEDICAL GAZETTE* for August 1844, "On a new Method of making Medicated Tinctures," I ventured to propose a deviation from the ordinary plan of agitating the solids in direct contact with their spirituous solvent, and suggested the interposition of a bag, in which they might be suspended and macerated in the spirit without agitation.

The principle on which the process is conducted was stated in my paper to have been long familiar to scientific chemists, and, I may add, had been often applied by them to the dissolution in particular of saline compounds, either suspended by means of a linen bag, or a perforated metallic plate. The application of this principle to the preparation of medicated tinctures, and the use of a bag to serve the twofold office of suspending the solid, and of filtering the tincture as soon as formed, I considered a novelty, and have not met with any account of its previous application to a similar purpose. I have, however, recently had the pleasure of reading the remarks of Mr. Bell, the experienced Editor of the *Pharmaceutical Journal*, on my paper in the April number of that useful periodical, by which I was first apprized of Mr. Alsop having several years ago used "a perforated diaphragm or plate, fixed above the middle of a jar, on which the ingredients for making infusions were placed." A similar arrangement to this was likewise proposed by me, in ignorance of Mr. Alsop's paper, as being occasionally serviceable in making tinctures as well as infusions; but, since that suggestion was made, I have found this arrangement frequently inapplicable, and that while it will only answer satisfactorily in preparing a few, it is objectionable in making the majority of the officinal tinctures. I do

not therefore recommend the use of either perforated plates, or sieves of any material, in these processes, and the results exhibited on the subjoined table were all obtained from experiments made with bags.

I am happy in believing the plan under consideration is likely to attract the notice of experienced operators, through the medium of the *Pharmaceutical Journal*, and feel confident it will be found much more generally applicable than is anticipated by the Editor of that periodical. But before any correct opinion can be formed of its merits, comparative experiments should be performed on large and small quantities of similar materials, macerated together respectively by the old method and the one suggested as its usual substitute, and the results carefully noted.

With the desire of arriving at accurate conclusions, I have greatly multiplied my comparative experiments on small quantities; and by the kind assistance of Mr. Whitfield, the apothecary of St. Thomas's Hospital, I have likewise been enabled to perform several experiments on large quantities of the requisite materials, since the bag process was proposed. The results of these numerous experiments induce me still to adhere to the opinion I have already expressed of its great eligibility, and to continue in the belief that, with certain precautions to be hereafter pointed out, almost all the medicated tinctures may be prepared by the new plan, of equal strength to the corresponding tinctures made by the old plan, with less risk of incurring a loss of strength by inattention to the degree and repetition of the agitation which is requisite on the old plan, with less labour, and also a less expenditure of spirit. I am, however, bound in candour to add, that although the bag process may be advantageously followed in preparing almost all the tinctures, yet it has proved more eligible in some instances than in others, and the remarks which follow the subjoined table of results will explain the circumstances in particular which were supposed to influence its degree of eligibility; but none of them seem to possess an importance sufficiently great to justify a condemnation of the process without reference to comparative experiments, and least of all the circum-

stance of the bulks of the solids employed being variable; no material difficulty is to be apprehended on the score of bulk, although the variation is sometimes very considerable, as, for instance, between the bulks of kino and of hop, both of which are directed to be macerated in equal quantities of spiritus tenuior. This variation, however, demands attention, and must be provided for by the operator; but it is not a circumstance which interferes with the effectual maceration of bulky substances, not even of the most bulky, as hop. Now, when the bulk of the hop is compared with that of the proportional quantity of the spirit in which it is directed to be macerated, its effectual maceration seems to be at first sight impossible; but the impossibility is apparent only and not real, and the seeming difficulty may be easily surmounted by modifying the shape and dimensions of the bag, and adapting them to those of the vessel in which it is to be suspended. When this adaptation is properly effected, all the substances without exception may be effectually covered by, and efficiently macerated in the proportional quantity of spirit.

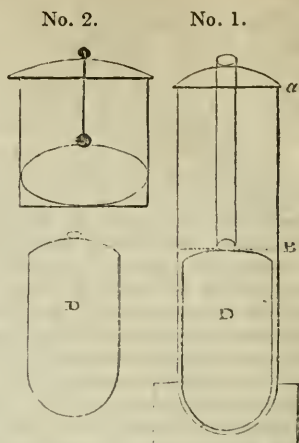
But in my former paper on this subject, the use of a conical vessel was suggested, and the shape of the bag was that which would result from enclosing a substance in fragments in a piece of linen or calico with string, or a modification of the sphere; and with this arrangement, about thirty-seven of the official tinctures may be conveniently prepared; but the remaining eight or nine tinctures being made with very bulky solids, cannot be efficiently macerated in this form of apparatus, but require for the purpose a modification of it, as above noticed, and in which it will be practicable to immerse the solids, without being subjected to forcible compression, in the proportional quantity of spirit.

Whether the vessel is conical or cylindrical, is immaterial, provided it has the requisite capacity; but the bag, when the conical vessel is used, should be likewise conical; and when the cylindrical vessel is preferred, oblong. Their relative dimensions in both cases must be such, that no more space be left unoccupied by the bag, when loosely packed with the dried solid and introduced into the vessel, than is suf-

ficient to allow for the expansion caused by the absorption of spirit by the solid, and be sufficient also to admit of the interposition of a thin stratum of the spirit, which remains unabsorbed between the sides of the expanded bag and the interior sides of the vessel. If this adaptation is made with common care, a free circulation of the resulting tincture will be insured, as its density varies; and an exceedingly thin stratum of interposed spirit will suffice. The bag having been prepared by the sempstress under directions, is to be filled with the substance, previously reduced to the state of disintegration directed in the London Pharmacopœia, and allowed to fall into the bag by its own gravity without the application of additional pressure, except in the examples of hop, hyoscyamus, and conium, in packing which, but particularly hop, a moderate degree of pressure will be required to contract their bulks within the requisite limits.

The bag is next to be closed, a little above the solid, by string, and finally immersed in the proportional quantity of spirit previously introduced into the macerating vessel; and with an apparatus resembling in its proportions that in the annexed sketch, to the exclusion of the conical vessel, all the official tinctures may be conveniently prepared.

The sketch is too simple to require explanation, but it is proper to observe, as a general guide in making the arrangement and in conducting the process, that, with reference to cylindrical vessels of the requisite capacity, their height should always rather exceed twice the height of the packed bag, so as to allow of it being raised under cover, and drained above the surface of the tincture. The diameter of the vessel does not materially influence the process when small quantities of solids are macerated; but when large quantities are employed, a vessel of a larger diameter, and shallower than that represented on the sketch No. 1, with a bag to correspond, and made so as to expose as extended a surface of the solid as possible to the action of the solvent, with the least depth, would be preferable to the oblong bag, as being more favourable to the perpendicular circulation of the tincture through the solid, as in the sketch No. 2.



But while, on the one hand, by an apparatus of the kind suggested, the bulks of the substances to be macerated in it is a circumstance of secondary moment; on the other, their chemical nature and state of aggregation continue to exert considerable influence over the process, and materially affect the rate of circulation through them. The circulation of the resulting tincture, for instance, varies with the solubility and porosity of the solid immersed in the spirit, as well also as with the nature of the insoluble residue left in the bag: thus, when the substance is very soluble, and contains a very small proportion of matter insoluble in spirit, as kino or guaiacum, the rate of circulation is comparatively rapid;—so, also, when the substance is very porous, its extractive very soluble, and its insoluble components are likewise very porous, as in the examples of cinchona, hop, and conium, the rate of circulation is rapid, and the process goes on very favourably. But if the substance becomes viscid when saturated with spirit, as squill, and the residue is abundant and gummy, as that of jalap, opium, myrrha, and assa-fœtida, or is feculent, as that of liquorice, then the rate of circulation, although rapid for some hours after the solids have been thoroughly saturated with the spirit, will become languid towards the close of the maceration, and will require to be stimulated by the interference of mechanical aid.

With the object, therefore, of quickening the circulation of the solvent through the majority of the solids used

in making tinctures, the packed bag should be raised, and drained under cover, after it has been immersed in the spirit for one or two days, and again lowered as soon as the tincture has entirely ceased to drain from it. This alternate raising and lowering will have the effect of restoring animation to the circulation of the tincture stagnating in the centre of the congested solids, and should be repeated daily during the process of maceration.

This process is usually perfected in two to four days when small quantities of the respective ingredients are used, as, for instance, an ounce of a solid, and its proportional measure of spirit; but is protracted two or three days when large quantities of similar materials, as eight pounds of cinchona and three gallons of spirit, are macerated together. The influence of quantity, although evident, is nevertheless much less marked than that of the chemical nature of the substance under treatment with spirit; and by no process of maceration can the original affinities between the components of different substances be invariably subverted by the spirituous solvent in equal intervals of time. Some are more readily overcome than others under similar conditions; and this inequality of interval is rendered very apparent when the same kind of substance is macerated in different states of aggregation, and at different temperatures. It is necessary, therefore, to attend to these conditions, with the object not only of abbreviating the duration of the process, but likewise of insuring the exhaustion of the solid, and the uniform strength of the tincture. And generally, a substance in mass cannot be dissolved by spirit at a lower temperature so quickly as when the same kind of substance, being reduced either to fine or coarse powder, is macerated at a higher temperature. It is, moreover, probable that the components of some substances are extracted at the higher, and not at the lower temperatures; for instance, a stronger and better tincture may be prepared by macerating the materials together at a temperature of 65° to 70° , than with similar materials used at a temperature of 50° ; and I believe no extension of the time of macerating them at the lower degree would compensate for the deficiency of heat. The quality of the solids, whe-

ther good or bad, as well as the states of dryness in which they are used, are other circumstances which also influence the strength of the tinctures made with them and should be taken into calculation in comparing the results of any experiments together. Now the conditions under which drugs are used vary greatly, and, in consequence, the results on the subjoined table may not exactly correspond with those obtained from similar drugs, treated in the same way, by other experimentalists, and if compared together would lead to erroneous conclusions; but, in making my own comparative experiments, I have endeavoured to obviate this source of fallacy, by comparing together the results obtained from different portions of the same parcels of the respective drugs only, and not of different parcels. The drugs were for the most part of good ordinary quality. The *spiritus tenuior* had a specific gravity of 0.920, and the *spiritus rectificatus* 0.838, at 62° . The materials were put together in the proportions, and uniform states of dryness and aggregation, as they are directed to be in the London Pharmacopœia; the quantity of each macerated was almost equally small, and the temperature of the room the same. Great care was taken to prevent evaporation, and several comparative experiments were made with the different substances named on the table before the results were considered to be accurate.

The process was supposed to have been completed as soon as the tincture had ceased to acquire weight; and its specific gravity, viewed in conjunction with the weight of hard extract, obtained by evaporating one fluid drachm of it in an American oven, at a temperature of about 230° , was considered a measure of its strength, in reference at least to substances not volatile at that temperature.

But the specific gravity, taken alone, could not always be depended on, since, independent of the presence of active ingredients in the drugs, it varied much more with the quantity of water in them, and their states of dryness.

It varied also with the degree of force applied to express the last portions of tincture from the bag; and, in general, when the residue was abundant, the specific gravity of the expressed tincture was heavier than that of the drained tincture; but the quan-

TABLE showing the results of experiments performed on the Official Tinctures of the London Pharmacopœia; with the object of comparing the efficiency of the process of maceration with the mediate contact of the materials employed, or of the bag process; with that of maceration with their direct contact, or of the ordinary process.

Name of Tinctures.	Time of Maceration in days.		Maximum Sp. Grav. at 62° of each Tincture	Weight of Hard Extract from f3j. of each Tincture.	
	Direct.	Mediate			
Tinctura Aloes 1	14	—	0.994	2.85	{ made with bad liquorice and diluted spirits, weaker than spiritus tenuior.
“ “ 2	—	2	0.990	—	
“ “ 3	—	2	0.996	—	{ made with good liquorice, ditto, ditto.
“ “ 4	—	2	0.999	4.4	
“ “ 5	14	—	0.980	1.45	{ made without liquorice, ditto, ditto.
“ “ 6	—	2	0.980	—	
Tinct. Aloes Comp.	—	2	0.893	7.5	{ made without crocus, and with the tinctura of myrrha, sp. gr. 0.841.
Tinct. Assafoetidæ	7	—	0.864	4.8	{ made with two portions of one kind of assafoetida.
“ “	—	2	0.860	3.75	
“ “	—	3	0.8602	—	{ made with one portion of the same kind as the above.
“ “	3	—	0.8608	4.0	
Tinctura Balsami Tolutani . .	2	—	0.856	—	{ made with two portions of the same parcel.
“ “	—	2	0.856	2.85	
Tinctura Calumbæ	3	—	0.925	0.35	{ made with the same kind of calumba.
“ “	—	2	0.925	—	
Tinct. Cascarillæ	—	2	0.926	0.55	{ made with the same kind of cascarilla.
“ “	10	—	0.926	0.55	
Tinctura Catechu	—	2	0.949	—	made without cinnamon.
Tinctura Cinchonæ Pallidæ . . .	10	—	0.945	—	{ made with one kind of pale cinchona.
“ “ “	—	3	0.945	3.2	
“ “ “	—	3	0.939	2.9	{ made with another kind of pale cinchona.
“ “ “	—	4	0.938	2.8	
Tinctura Conii .	—	1½	0.933	1.6	{ made with leaves picked, crisp, greyish green, and odorous.
“ “	7	—	0.933	—	
Tinctura Digitalis	14	—	0.934	—	{ made with leaves cauline, picked, crisp, greyish green, and odorous.
“ “	—	2	0.934	2.35	
Tinctura Guaiaci .	—	2	0.883	—	made with bad guaiacum.
Tinct. Hyoscyami	8	—	0.933	1.9	{ made with picked leaves, crisp, greyish green, and odorous.
“ “	—	4	0.933	1.9	
Tinctura Jalapæ 1	14	—	0.941	4.0	{ made with the same kind of jalap, according to P. Lond.
“ “ 2	—	3	0.941	—	
“ “ 3	—	3	0.940	2.1	{ made with half the proportion of jalap directed in P. Lond.
“ “ 4	14	—	0.940	—	
Tinctura Kino .	14	—	0.874	—	{ made with two portions of one kind of kino.
“ “ .	—	1½	0.874	4.0	
“ “ .	—	1	0.880	4.3	{ made with another kind of kino.
“ “ .	—	1	0.882	4.5	
Tinctura Lupuli 1	8	—	0.933	1.7	{ made with a third kind of kino.
“ “ 2	—	1	0.933	1.7	
“ “ 3	1	—	0.932	—	{ made with two portions of one kind of hop.
“ “ 4	—	1	0.933	—	
Tinctura Myrrhæ 1	—	2	0.8430	1.20	{ made with two portions of one kind of indifferent myrrha.
“ “ 2	20	—	0.8436	1.27	
“ “ 3	182	—	0.8451	0.80	{ made with two portions of one kind of best myrrha.
“ “ 4	—	2	0.8420	—	

Table—continued.

Tinctura Opii	1	14	—	0.938	2.25	{ made with two portions of one kind of opium.
" "	2	—	5	0.937	2.00	
" "	3	6	—	0.939	—	{ made with one portion of another kind of opium.
" "	4	—	6	0.939	2.8	
Tinctura Scillæ	1	14	—	0.958	5.35	{ made with two portions of one kind of squill.
" "	2	10	—	0.955	4.85	
" "	3	8	—	0.954	4.00	{ made with one portion of another kind of squill.
" "	4	—	8	0.954	—	
" "	5	10	—	0.961	5.45	{ made with two portions of the same kind of squill as Nos. 3 and 4, but more dried, and at a subsequent period.
" "	6	—	10	0.961	5.50	
" "	7	—	5	0.956	—	
" "	8	—	12	0.956	4.9	
Tinct. Valerianæ	—	—	2	0.932	1.2	made with another kind of squill.

tity of hard extract did not always vary in the same proportion, nor was the specific gravity invariably augmented by pressure.

I have endeavoured in the preceding remarks to point out the chief precautions which seem requisite to insure an uniformity in the results obtained by macerating substances suspended in spirit, and I trust they will serve to invite the attention of experienced pharmacutists to the subject. The observations which follow the above table are of a more particular character, and are intended to point out the events which occurred in making the tinctures named on it with small quantities of the requisite ingredients. The same observations, so far as my experience allows me to form an opinion, will apply correctly to the preparation of similar tinctures made with large quantities; but having hitherto made only a few experiments on very large quantities, it would be premature to notice their results in detail in my present communication.

[To be continued.]

ON THE PRESENCE OF TUBERCLES IN DIFFERENT ORGANS.

Translated for the Medical Gazette.*

THE following results, obtained by M. Cless, of Stutgard, from the examination of upwards of 160 bodies affected with tubercular disease, are interesting as shewing the comparative frequency with which different organs and parts become the seat of tubercular deposit; they are also especially valuable when taken in conjunction with the observa-

tions of M. Louis, Barthez and Rilliet, and others, most of which they confirm by additional evidence.

In 152 autopsies of adults affected with tubercles, M. Cless found the lungs free from tubercles six times. In two of these six cases the peritoneum was sprinkled with tubercular granulations; in one the pulmonary and costal pleura of the right side were affected; in one the bronchial glands, mesentery, and lower part of the ileum, were the seat of the tubercular disease. In the 5th case the two pleuræ and the peritoneum were sprinkled over with tubercles of various sizes, from millet-seeds to peas, densely packed together; there was also tuberculous matter in the glands of the neck and chest, liver and spleen; the lungs, compressed by effusion into the pleural cavities, were perfectly free from tubercles. In the 6th case there was tuberculous matter in the bronchial glands. In 21 autopsies of children, he only found the lungs free from tubercles once; this was in a boy 11 years of age, who, besides a considerable serous effusion into the ventricles of the brain, had two large masses of tubercle in the cerebellum, many small ones on the surface of the liver, and caries of the vertebræ.

In 146 adults affected with tubercles in the lungs, there were only 35 in whom the disease was confined exclusively to the lungs; in the remaining 111, or nearly three-fourths of the whole, the disease had extended to other organs. In children, the proportion in which the deposit of tubercles is limited to the lungs is smaller than in adults, M. Cless finding only three cases out of twenty in which all other organs were free. Barthez and Rilliet*

* Gazette Médicale, Jan. 1845.

* Maladies des Enfants, tom. iii. p. 49.

state the proportion to be 23 to 269. In 166 cases (adults and children) of tubercular deposit in the lungs, there were only thirteen in which the disease was confined to one lung; of these in ten cases it was the right lung, in three the left: it is true that in the greater number of cases the disease had not advanced very far. When both lungs were affected, the right was usually the most diseased, the proportion being 45 to 30; this result is not in accordance with the observations of Louis and others. In 146 adults, in whom the lungs were diseased, vomicæ were found 105 times, there being none in the other 41 cases; in children, the proportion in which vomicæ existed was smaller, there being only nine cases out of twenty in which they were found; usually, the younger the child is the less frequent is the occurrence of vomicæ; the very young ones most commonly sink under an acute tuberculization which causes death before passing on to suppuration; moreover, young children are frequently carried off by other diseases superadded to the tubercular deposit, such as acute hydrocephalus, &c. Out of 166 cases, pneumothorax, from rupture of a vomica, was noted as occurring four times, twice in the right lung, twice in the left. M. Cless relates two exceptions to the established rule that the usual seat of tubercles is at the summit of the lungs; in these two cases the disease affected the lower lobe especially, and in one there even existed a vomica.

Tubercles in bronchial glands.—M. Cless never found the bronchial glands in children affected with tubercular deposit without the existence of tubercles in the lungs also. These glands were not always examined in adults.

Pleura.—In 13 adults and 1 child there were tubercles in the pleura. In 1 the pleura alone was strewed over with plates of tuberculous matter, the parenchyma of the lungs being healthy; in another case, in which the lungs were equally healthy, there were tubercles in the pleura, peritoneum, and bronchial glands. In three other cases the pleura and peritoneum were covered with tubercles, and there was a small quantity in the lungs. Three times tubercles of the pleura accompanied an ordinary pulmonary phthisis; and six times the tuberculization was general.

The patients, of whom 11 were males, and 2 females, had the following ages: 6 were between 20 and 30, 5 between 30 and 40, 1 at 42, 1 at 59, and 1 child aged 10.

Peritoneum.—In 16 adults and 4 children, the tubercles were limited to the peritoneum eight times; they predominated over those in the lungs six times, and in six other cases the disease was general. The four children were between six months and 10 years of age. Among the adults, 11 were males and 5 females; 2 were under 20 years of age, 5 were between 20 and 29, 5 between 30 and 39, 2 between 40 and 49, and 2 between 50 and 59. The tubercles were in no part so numerous as in the peritoneum, the whole surface of which was sometimes covered with them; and, according to M. Cless, they frequently offer, in this part, a peculiarity which is not found in the tubercles deposited in other parts of the body, that is, a black areola surrounding their base, probably from the existence of a black material in the capillary vessels. Once only did M. Cless find the mesenteric glands affected with tubercles coincidently with their occurrence in the peritoneum.

Pericardium.—In one individual only, whose lungs, pleura, bronchial glands, and spleen, contained tubercles, were there found any in the pericardium; and in this case they were scattered over its whole surface.

Intestines.—In 152 adults affected with tubercles, the small intestines were affected 83 times, and the large intestine 37 times; and in 21 children the small intestines were affected seven times, the large ones only once. Never were there found tubercles in the intestines without there being some also in other organs. Between the ages of 20 and 30, the intestines were most frequently found diseased.

Mesenteric glands.—Among 152 adults 32 had tubercles in the mesenteric glands; 7 out of 21 children also had the mesenteric glands affected with tubercles. In all the cases tubercles were found in other organs.

Liver.—Once in an adult, twice in children; other organs were affected.

Spleen.—4 adults and 12 children; always with tubercles in other parts of the body. In children, the parenchyma of the spleen is often quite invaded by tubercles.

Kidneys.—4 adults and 3 children.

Uterus, fallopian tubes, and ovaries.

—In 26 women who died of pulmonary phthisis, tubercles were found in the genital organs; once in the walls of the uterus, once in the peritoneal covering, twice on the internal surface of the uterus, once the whole substance of the uterus was converted into tuberculous matter, twice the ovaries were the seat of tubercle, and four times the fallopian tubes were filled with tubercular substance. The tubercles in the genital organs were always secondary to the general tuberculization, especially occurring where the abdominal viscera were the seat of disease.

Brain and its membranes.—Of 5 children aged from 8 months to 11 years, in whom the membranes of the brain presented tubercles, 4 died of acute hydrocephalus. In all there were tubercles in the lungs and other organs also. The tubercular granulations had always their seat on the external surface of the arachnoid, between this membrane and the pia mater, never within the cavity of the arachnoid. In an adult who died of acute hydrocephalus, there were found, besides a large quantity of limpid serum in the ventricles, pus and many tubercular granulations between the arachnoid and pia mater, tubercles in the lungs and pleura, and in Peyer's glands. In 27 children who died from tubercles, four had tubercles in the brain, as also in other organs; M. Cless never found any in the brain of adults. Besides in the mesenteric and bronchial glands, M. Cless found tubercles in the glands of the neck in five adults and one child; he has also found them in the pelvic and other lymphatic glands; but in all cases tubercles were found in other organs also. Twice he found tubercles in the muscles, six times in bones, and once in an articulation alone.

CURIOSITIES OF MEDICAL LITERATURE.

PHILEMON HOLLAND, Doctor of Physic, who died in his 85th year, February 9th, 1636, wrote the following epigram on his having written a large folio with a single pen:—

With one sole pen I writ this book,
Made of a grey goose quill;
A pen it was when it I took,
And a pen I leave it still.

On which Dr. Fuller observes, that "he must have leaned very *lightly* on the nib thereof, though *weighty* enough in another sense."

OBSERVATIONS AND EXPERIMENTS

ON THE

RAPIDITY OF THE PASSAGE OF
SOME FOREIGN SUBSTANCES
THROUGH THE KIDNIES,AND ON SOME POINTS CONNECTED WITH
THE EXCRETION OF THE URINE.

BY JOHN E. ERICHSEN, F.R.C.S.

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[Concluded from p. 363.]

THE next class of substances experimented on were vegetable infusions. On account of the great difficulty that I had in persuading Furley to swallow a sufficient quantity of these infusions for the purposes of experiment, this series is much more limited than it otherwise would have been.

It will be needless to give a detailed account of the experiments, the particulars of which may be learnt at a glance to the accompanying table. The only inference deducible from them would appear to be that vegetable substances require a much greater average time for their passage through the system than prussiate of potass. Like that salt, the rapidity of their transmission from the stomach to the blood, and their secretion from this by the kidneys, depends, in all probability, in a great measure on the condition of the digestive process at the time they are taken. Thus, in Experiments 15 and 18, the madder and logwood taken at a time when the digestion of the last meal must have been completed, made their appearance in the urine more rapidly than the other substances, which were swallowed sooner after meals.

The next series of experiments was made with the view of ascertaining how soon the urine would become alkaline after the administration of some of the salts of the fixed alkalies. In performing these experiments it was necessary to have recourse to the citrates and tartrates of potass and soda, for no persuasion could induce Furley to take the carbonates of these alkalies, or the Liquor Potassæ, in sufficient quantity for experiment.

Exp. 19.—Dined at 1 p.m. on bread and butter. At 3h. 34m. drank a solution of ʒij. of Bicarbonate of Soda, saturated with lemon-juice, in a tumbler of water. At the time of taking the

TABLE II.—EXPERIMENTS WITH VEGETABLE SUBSTANCES.

Number of Experiment.	Substance Taken.	When first appeared in Urine.	When last Meal Taken.	Nature of last Meal.
11	Infusion of Galls	36 min.	2½ hours	Bread, meat, and potatoes
12	Infusion of Galls	33 "	1½ "	Bread and butter, and coffee
13	Infusion of Galls	30 "	1¾ "	Bread and butter, and tea
14	Infusion of Rhubarb	22 "	2¾ "	Potatoes and dripping
15	Infusion of Madder	16 "	3¼ "	Bread and dripping
16	Infusion of Uva Ursi	35 "	1¾ "	Bread and butter, and tea
17	Tincture of Rhubarb	31 "	2½ "	Liver and bacon, and bread
18	Decoct. of Logwood	19 "	4¼ "	Bread and butter, and tea.

mixture, the urine was very acid, reddening litmus paper strongly, and was flowing at the rate of three drops per minute. Five minutes after taking the Citrate of Soda, the flow of urine had increased to nine drops per minute; and at the 28th minute it became suddenly and most distinctly alkaline, browning turmeric paper strongly. The urine was now flowing at the rate of 14 drops per minute.

On the following day, at about 7 P.M. the urine was again examined. It was still very strongly alkaline, and was passing away at the rate of 16 or 18 drops per minute; and occasionally, from the left ureter, in a small stream. The patient says that it has done so all day. The urine was examined twice a day, and continued alkaline until the fourth day, and it was not until the sixth day that it had recovered its usual acid reaction.

EXP. 20.—7 P.M.—Dined five hours ago on potatoes and fresh herrings. The urine, which is distinctly acid, is passing at the rate of three drops per minute. He now took 3ijss. of bicarbonate of potass, saturated with lemon-juice, and dissolved in a tumblerful of water. In forty minutes the urine became distinctly alkaline, but its quantity did not seem to have been much increased. The urine was examined as before twice a day, and it was not until the fourth day that it had recovered its acidity.

EXP. 21.—6 30 P.M.—Has not taken anything except bread during the day. Urine strongly acid; flows at the rate of four drops per minute. At 36 minutes after 6, drank a solution of 5j. of bicarbonate of soda, saturated with tartaric acid, in a tumblerful of water. In 29 minutes the urine became neutral, and at the 34th minute after taking the

salt it became very distinctly alkaline. At the same time the rapidity of the flow had increased to 14 or 16 drops per minute.

EXP. 22.—At 5 P.M. dined on liver, bacon, bread, and potatoes. Did not drink anything at his dinner, but about an hour and a half afterwards took half a pint of water. At 7h. 5m. drank a solution of 3j. of bicarbonate soda, saturated with tartaric acid, in a tumblerful of water. At this time, the urine, which was acid, was passing at the rate of from three to four drops per minute.

At the forty-seventh minute it was distinctly alkaline, and from twelve to fourteen drops escaped in the minute.

In these experiments, the rapidity with which the citrates and tartrates were decomposed in the system, and the urine rendered alkaline, varied very considerably: in one case (Exp. 19), twenty-eight minutes were required for the accomplishment of this change; in another (Exp. 22) forty-seven minutes, and in the remaining two instances, thirty-four and forty minutes were respectively required. The experiments were, for the reasons already mentioned, not sufficiently numerous to render the cause of this difference very apparent.

The great and rapid increase in the quantity of urine secreted after the salts of soda has been taken was very striking, and well exhibits the diuretic properties of that alkali. It is a remarkable fact, that, after the citrate of potass had been taken, the quantity of the urine did not appear to be much augmented, although it was rendered distinctly alkaline. I do not wish to lay any stress upon this fact, as it was a solitary one, but simply content myself with directing attention to it.

In connexion with this part of the subject I may relate the following experiment.

EXP. 23.—7 P.M.—Dined about four hours and a half ago; urine acid, passing off at the rate of five drops per minute. He now put his feet and legs into a pailful of tepid water, in which three ounces of acetate of potass had been dissolved. The water reached nearly as far as the knees. After the immersion had been continued for 67 minutes, the urine became distinctly alkaline, and the quantity had increased to eight drops per minute.

I have performed similar experiments with the tartrates and citrates of soda and potass, but never found any change produced in the reaction of the urine, although the immersion of the legs was continued for more than two hours.

In an experiment of the same kind, performed with the prussiate of potass, none of the salt could be detected in the urine, though the legs had been immersed in a pailful of tepid water, containing three ounces of it in solution, for nearly two hours and a half.

The influence of digestion on the rapidity of the secretion of the urine was well marked in many of the observations that I made on the boy Furley. The effects were uniformly as follows. For a quarter of an hour or twenty minutes after a meal, the secretion of urine was much diminished, and occasionally ceased entirely for a few minutes. At the end of this period, it began again with increased rapidity, and continued in larger amount than usual until the digestive process was completed, by which time it had generally fallen to its ordinary standard. This increase in the quantity of the secretion occurred equally whether drink was taken at the meal or not, though of course not to the same extent, or so rapidly, when solid food only was taken. The following observations, selected at random from amongst many others, will serve as a good illustration of these remarks.

EXP. 24.—At 2 P.M. dined heartily on mutton, potatoes, cabbage, and bread, but without any drink. Immediately before his dinner, the urine was passing at the rate of four drops per minute. At 2h. 15m. immediately after he had finished his dinner, the urine was passing much more slowly, only five drops escaping in three minutes.

At 2h. 25m.	4 drops	escaped	in a minute
2h. 30m.	10	"	"
2h. 35m.	14	"	"
2h. 40m.	11	"	"
2h. 45m.	8	"	"
2h. 50m.	8	"	"
2h. 55m.	7	"	"
4h. 30m.	6	"	"
5h.	5	"	"
6h. 30m.	4	"	"
7h. P.M.	3	"	"

About the average rate of excretion.

The increase in the quantity of the urinary secretion during, and immediately after violent exercise, is well illustrated by the two following observations.

EXP. 25.—6h. 45m. P.M.—Dined on bread and fish five hours ago. Since then he has walked six or seven miles, and has not eaten or drank anything. The urine, which is very acid, is now passing at the rate of from six to seven drops per minute; fully double the quantity ordinarily secreted in that time. As the dinner was a light one, and must have been long since digested, this must depend on the exercise that he has just taken.

EXP. 26.—7h. 15m. P.M.—Ate some bread and cheese at about 4 P.M. Has not drank anything since 11 A.M., when he had some water. Has just returned from a walk from St. Giles's to Hammersmith and back, a distance of at least eight or nine miles. The urine is escaping at the rate of seven drops per minute, and is very acid. On remaining quiet for about an hour, the quantity of the secretion fell to three or four drops per minute, shewing clearly the relative influence of a state of exertion, and one of rest, on the elimination of this secretion.

There are several other points connected with the urinary excretion, and the influence of different substances upon it, that I had intended investigating. The pressure of other engagements, and the fact of the boy Furley having been obliged to enter a Union workhouse, where he is not so readily accessible as he formerly was, have, however, compelled me to relinquish my original intention, and to present the observations that I have made upon him to the profession, in a less complete form than I had hoped to have done.

HINTS ON THE MODE OF REPORTING CASES.

(From a Correspondent.)

SECOND only to the faculty of storing the mind with substantial information, is the power of arranging that knowledge, systematising it, and rendering it easily available; in keeping the riches of the intellect, not heaped in bulky ingots of the precious metal, too weighty for the ordinary purposes of disbursement and exchange, but in the more tangible form of the current coin, with which the largest as well as the most trifling demands of every-day expenditure can be readily defrayed. This certainly holds good with regard to medical science and medical men. In all times, our universities and hospitals have produced scholars of the most retentive memory and the deepest learning, to whom all the details of medical science (the theoretical parts of it, at all events, and often much of the practical) have been as familiar as a daily-repeated lesson, who still, with all their learning, and all their experience, have proved, in teaching and in prescribing, and, in fact, in all the useful and practical purposes to which a knowledge of disease can be turned, miserably incompetent. They are men, in the dark receptacles of whose minds every ray of light is absorbed without being allowed to reflect the minutest scintilla; either dullards within whose brains ideas become engulfed, as in a quicksand, never again to appear upon the surface, unless, perhaps, to be thrown up in broken fragments—"rari nantes in gurgite vasto"—on the occasion of some unusual agitation or confusion, or "mercurial pedants," into whose ears, the flood of knowledge enters in a pure stream only to undergo decomposing fermentation within, and then to escape from their lips in dark and turbid volumes. The naturally great powers of such men are rendered useless, chiefly from their being deficient in the faculty of generalizing and of arranging their ideas. Of all this the medical man, who occupies nearly the whole of the scanty leisure he can call his own in endeavouring to gain useful and practical information from the writings of others, becomes unpleasantly aware, at the expense of his temper and of his time. He takes up

a book, a paper, or a case, with an attractive title, by some man whose known experience or position he conceives to be in some measure a guarantee for the value of his work; and, after toiling for hours to unravel its obscurities, he is at length obliged to lay it aside—vituperating against the dull-minded Theban who wrote it—without having gained a clear idea upon one single fact, and with much of his previous good knowledge upon the subject so disarranged that his mind requires a thorough rest to enable its faculties to recover from their confusion. This absurd obscurity is often displayed to the utmost in the details of cases which are offered to the profession. It may sometimes happen that a really well-informed man, from want of leisure, relates his cases in a slovenly and confused manner; but, upon the whole, it is probable that every person who is in the habit of casting together in his reports all kinds of disconnected facts and discordant symptoms, thereby proves that he is totally incapable of comprehending the disease which he has been attending, and therefore quite incompetent to treat it in a systematic and rational manner. While standing by the bed-side, the sensible physician always places the whole of the facts of the patient's case as nearly as possible in exact correlation with each other; he feels that his train of reasoning must be connected and definite, and if it is broken, he is at once at fault, and dares not act until he has reassured himself by farther inquiry and thought; such a man is as incapable of deliberately giving an incoherent statement of a case, as an incompetent observer is of furnishing an accurate and satisfactory one.

The jumble of symptoms, theories, facts, suggestions, and rodomontade, which is frequently met with in the published reports of medical cases, would be quite laughable if the subject were not of so grave a kind. In these productions the style of a learned contemporary of the writer's own is often rivalled. Upon one occasion this gentleman, in concluding his general introductory remarks upon an ordinary case, wrote thus of his patient:—"He is a sensible man, a judicious father, and has always kept himself clean!"

For the purpose of assisting in doing away with absurdities of this kind,

"quæ ipse miserrimus vidit," and by which he has often been annoyed, the writer has endeavoured to throw together a few practical hints upon the manner of reporting cases, which he begs to submit to the attention of the readers of the GAZETTE.

The narrative of the case should be given in the form of a clear and simple detail, comprising the patient's age, occupation, temperament, hereditary predispositions to disease, place of residence, and habits, with the previous history of his complaint, including its symptoms and the treatment which has been employed for its relief. His condition, when visited, should be stated minutely, from his own expressions, and from the indications of disease which the reporter has observed. Unless the disease be a rare one, or extremely difficult of diagnosis, it is not always requisite to give the whole train of inquiries which has led to its detection, a clear detail of all the important symptoms will be sufficient; but if the case be of an obscure nature, requiring much ingenuity to unravel it, then the whole course of examination may be stated in the order in which it has been made: the method of doing this is generally one of the surest tests of a medical man's ability. The whole of the main facts ought to combine to develop the true nature of the disease, while any others that may be noticed should have some direct and evident bearing upon it; all inconsequential statements ought to be altogether omitted. A detail of the treatment, and of the general progress of the case, will follow next. These are points in which many reports might be advantageously curtailed. Where the power of a new remedy has to be tested, or where the disease is treated upon an unusual plan, it will be quite requisite to specify every dose that is administered. But when the case is merely intended to illustrate a pathological question, a general outline of the system of treatment adopted will suffice; nothing can be more vexatious, for instance, than to be told, in a record of malignant disease of the liver, the precise number of grains of Hydrargyrum cum Cretâ that were "exhibited;" or, in a case of broken head, to have each dose of Haustus Catharticus particularly enumerated—except, in an instance of the latter kind, to be annoyed

with unrelentingly precise accounts of the progress of healing observed at the daily removal of the dressings.

When the issue of the case is fatal, the symptoms with which death is attended should be plainly given. A good deal of method is necessary in the statement of the *post-mortem appearances*. It is always most easy to detail these in the order in which they are revealed in the inspection, and in relation to the anatomical position of the several organs and of their parts.

Whenever it is found necessary to make a cadaveric inspection, it is requisite that the *whole* of the contents of the three great cavities of the body should be carefully examined, and the results detailed, completely but briefly, in the record. If the state of any one of the viscera be overlooked, the case remains imperfect; therefore the condition of each organ, whether diseased or otherwise, should be alluded to, except where it is previously stated that all the parts have been examined, and that the organs to which no allusion is made were found in a healthy condition; or that the reporter was prevented from examining the whole of the organs. Unless this precaution is taken, the reader will generally have reason to feel dissatisfied, and the reporter will lose credit. For instance, a child dies of pneumonia, after having suffered from a slight exanthem. In the account of the post-mortem examination, the state of the lungs only is described; a pathologist reads this case, and, believing the thoracic affection to have been attendant upon scarlatina, looks anxiously for an account of the state of the kidneys as a confirmation of his views—but in vain. He closes the book, disappointed at finding that which he expected would prove a valuable illustration of disease to be utterly useless, and assured that the reporter has evinced his ignorance in neglecting to ascertain the most important point in the case.

The following order of statements will usually be found convenient. The number of hours which have elapsed since death; the state of the atmosphere; the general aspect and condition of the body. The outward appearances should be noticed briefly and with especial reference to the nature of the case, but not upon any invariable rule: thus it would, of

course, be as unnecessary to give the length of the corpse, or the measurement of the chest, in examining the body of a well-formed healthy person who had perished suddenly from an accident, as it would be remiss to omit these points in a case where death resulted from disease superadded to congenital malformation. The exact weight and measurement of organs which at all vary from the natural bulk, and the precise quantity of normal fluid effusions, should be given wherever it can possibly be done: "twice the ordinary size," "capable of admitting the thumb," and "a good deal of serum," are very unsatisfactory styles of expression, as different persons' ideas of the natural bulk of organs vary almost as much as do the sizes of their thumbs; and that which would be regarded as a very large effusion in some parts of the body would be thought of little consequence in others, and *vice versâ*; some persons might consider an ounce and a half of serum a small quantity to be contained in the pericardium, others would regard such an effusion very differently, knowing that the pressure even of that amount of fluid upon a greatly obstructed heart would probably determine the fatal issue of the case.

The appearances found in the different cavities may then be detailed in the following order.

Head.—Scalp, Calvarium, Meninges, Cortical and Medullary substance of the Brain, Ventricles, Nerves, Sinuses and Arteries at its base, Spinal column. Membranes, Cord, and Nerves.

Chest.—General Form of the Thorax; State of External Veins, Larynx and its Appendages, Trachea, Lining Membrane of the Bronchial Passages, Bronchial Glands, Pleuræ, Substance of the Lungs.

Large Thoracic Veins, Pericardium; General Aspect and Position of the Heart (when diseased); Contents of its Cavities, its Weight: Right Auricle; Coronary Veins, Auricular Septum: Right Ventricle; Size of its Cavity, Thickness and degree of Firmness of its Walls, state of its Endocardium: Tricuspid Valve, Pulmonary Artery (which should be measured if the heart or lungs be diseased): Pulmonary Veins, Left Auricle, Mitral Valve: Left Ventricle; Thickness and Strength of its Muscular Tissue, Size of its Cavity: Sygmoid Valves,

Coronary Arteries, Measurement of the Aorta, State of that Artery to its termination (unless its lower portion be involved in any remarkable disease, then it may be described with the other contents of the abdomen), Diaphragm.

Abdomen.—Parietes; general Condition of the Peritoneum; interior of the Stomach and Oesophagus; condition of the Portal System; Liver—appearance of its Structure, its Artery, Veins, Ducts, and Gall-bladder; Pancreas and its duct; Duodenum; Small and Large Intestines; Mesenteric Glands and general Absorbent System; Spleen; Splenic Artery and Vein; Supra Renal Capsules; Kidneys—their Vessels, Proper Tunics, Secreting and Excreting portions; Pelves; Ureters; Bladder, with the Prostate and Urethra in the male;—in the female, Bladder, Vagina, Uterus, Uterine Sinuses and Spermatic Veins, Ovaries and Fallopian Tubes, the Inferior Cava, and the Veins which supply it.

The above very general sketch comprises, in a systematic arrangement, nearly all the essential points which it is necessary to allude to in ordinary reports of cases. In particular instances, further details will, of course, be required, and then the great point will be to insert them at the right place.

In the *Remarks* which are appended to the case, the chief aim must be to connect the symptoms which are related as having presented themselves during life with the morbid appearances described in the account of the inspection. The writer's conclusions should be given in as terse and aphoristic a manner as possible, and it would be as well not to advance any observations upon points, either of treatment or pathology, which are not suggested by the *facts* of the case, or by those of parallel instances. Nothing can add more to the value of a rare case than its correlation with a strictly similar example of disease. The symptoms or appearances afforded by a unique and isolated case may be set down as the results of accident, or be attributed to a combination of circumstances which may not present themselves again; but the fact of even one other case of precisely parallel nature having occurred, affords a fair presumption, nay, often almost a demonstrative proof, that the disease has been the result of a definite and fixed pathological law.

In reports of cases, and indeed in all medical writings, the *style* should be as simple and as unaffected as possible; matters of fact are always most forcibly conveyed by the plainest words, in easy sentences, free from pedantic technicalities. The style generally adopted by the best medical writers of the present day, plain and almost severe as it is, is certainly preferable to the pompous, heavy, latinized mode of expression which was so much in vogue a few years since: then, such expressions as "hydragogues were thrown in to the extent of inducing hypercatharsis," "the sputum indicated the presence of pulmonary disintegration," were thought remarkably knowing; they would now be listened to with general scorn. The use of very hard medical terms always lays the writer open to the suspicion of being a tyro, or, at all events, one whose acquaintance with his science is extremely new. Practical men, who are familiar with the subjects they treat of, describe them in a plain and easy manner; the neophyte's style is usually stiff and inflated. Seeing the words "Extispicium Cadaveris" at the head of an account of some post-mortem appearances would be sufficient to convince any old surgeon that he was about to read a detail of the author's first essay in morbid anatomy. A familiar Latin or French word is admissible here and there; but the English language contains enough, and more than enough, words for the expression of any medical facts or opinions, however abstruse.

X

ANCIENT REMEDIES FOR EPILEPSY.

SEVERAL popular remedies for this disease exert a powerful influence over it by their effect on the imagination, as that of the hand of a felon recently hanged, applied to the patient's brow while on the scaffold. The hand of a murderer applied while hanging from the gibbet is said to be especially efficacious. For the same purpose, Pliny advised the blood of a dying gladiator drunk warm, and Scribonius Largus directs a portion of his liver to be eaten. Aretæus prefers the raw heart of a coot and the brain of a crucified malefactor was an efficacious amulet, according to Alexander. Not two centuries since, the authentic remedy among English physicians was the lichen which grew on a decaying human skull!—*Dr. Moore on the Power of the Soul over the Body.*

DESCRIPTION OF AN IMPROVED APPARATUS FOR FRACTURE OF THE LEG.

INVENTED BY

THOMAS ATKINSON, M.D.

Surgeon to the Forces; Member of the Royal College of Surgeons of London; and Fellow of the Royal College of Surgeons of Dublin, &c.

THIS apparatus (which is remarkably simple, and can readily be constructed by any ingenious mechanic) consists of the common double-inclined plane, to which is added the foot-board *c*, which moves in the upper and lower grooves *E* and *F*, and is acted upon by the wooden screw *D*, which passes through its lower part. To the foot-board is attached the quarters of a leather buskin, *G*, which is intended to lace round the foot and ankle. Within the buskin (as shown in Fig. 2) is a strap, which is meant to give additional support to the foot, and, with the buskin, to secure it more firmly to the foot-board, or to be employed for this purpose alone when the fracture is too low down to admit of the use of the buskin.

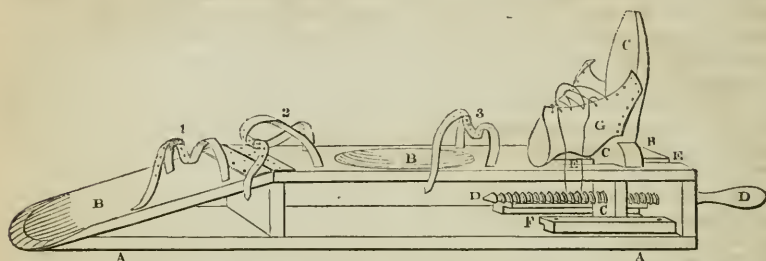
From this description, and an inspection of the accompanying plate, the mode of applying the apparatus will, I think, be sufficiently obvious. The limb, being placed in position on the box, is made fast at the angle of the inclined plane by the leather straps above and below the patella, and the foot is secured in the buskin. Extension to any amount can then be made, gradually and without violence, by turning the screw *D*, which acts upon the foot-board; the necessary manipulation can be performed, the fractured ends of the bones brought into apposition, and dressings, the eighteen-tailed bandage, &c. applied, at the same time that the requisite extension is kept up by the mechanical power of the screw. A soft pad is placed under the tendo-Achilles, and long ones, of any soft and appropriate material, laid along either side of the limb.

This apparatus, whilst in operation in some very severe and complicated cases of compound fracture of the leg, came under the immediate notice of Sir James M'Grigor, Bart. Director-General Army Medical Department, Sir James Pitcairn, Deputy Inspector-General of Hospitals at Cork, Dr. Andrew Smith, Principal Medical Officer, and other

staff medical officers of the General Invalid Establishment at Fort Pitt, Chatham, Dr. Thomas Smith, Surgeon to the Forces at Quebec, and several other surgeons civil and military, all of whom were pleased to express their approbation of the simplicity of its construction, its great mechanical power, its general usefulness and ap-

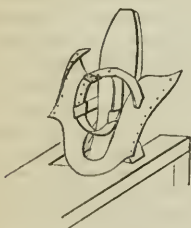
plicability in all cases of fracture of the leg, whether simple or compound, and the great and immediate relief it affords to the suffering patient by the steady and comfortable support given to the foot, at the same time that all pressure is removed from the heel by the opening left in the lower part of the buskin, as shown in Fig. 2.

FIG. 1.—*Apparatus for reducing Fracture of the Leg.*



- A, Lower board, or base, of the machine.
 B, Upper board, on which rests the limb, with suitable cushions, &c.
 C, Foot-board, acted upon by
 D, The screw, which moves the foot-board through
 E, F, The upper and lower grooves.
 G, The leather buskin.
 1, 2, 3, Leather straps for confining the limb on the inclined plane.

FIG. 2.



Shews the foot-board, with the buskin open, to display the inner strap, and mode of supporting the heel.

Description of an improved apparatus for reducing dislocation of the shoulder-joint.

The apparatus is applied by placing the padded band with iron collar (*g g, h h*) under the axilla of the affected side, and fixing it firmly to the shoulder by means of a piece of bandage passed through the loops of the straps *l l*, and tied above the shoulder.

The long strap *k k* (which passes

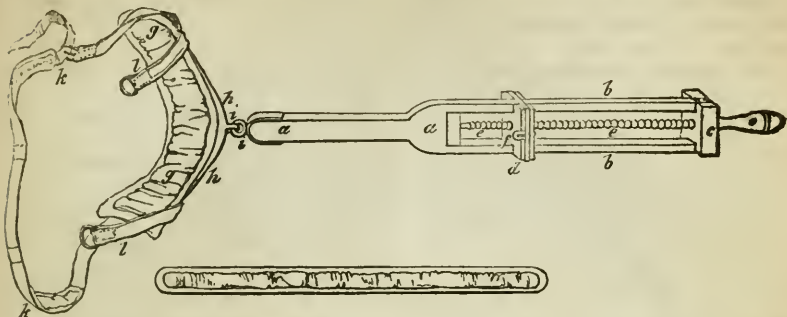
through a padded band) is then carried round the body, outside the opposite arm (which is consequently bound to the side), and buckled in front of the chest. This strap is kept in position by a linen bandage passed between the strap and the axilla, then carried round, crossed below, and then brought back over the shoulder, where it is firmly tied. The lever *a a* is now brought in apposition with the arm of the affected side. The padded strap, Fig. 2, is rolled round the limb immediately above the elbow, and secured with a piece of cord by means of the surgeon's knot, or clove hitch. The ends of the cord are carried down and fastened with a slip-knot to the hook *f*.

The apparatus being thus adjusted, it is grasped, together with the arm, firmly with the left hand. The screw *e e* is then turned with the right hand, and gradually brings down the moveable block *d*, to which the arm is attached by means of the cord. After sufficient extension is made in this way, the head of the bone can be felt in the axilla, and, by gradually depressing the lever, will pass over the edge of the glenoid cavity; if the cord at this moment be suddenly loosed from the hook *f*, the head of the humerus will instantly slip into its natural bed. This apparatus was used, for the first time, a few days since, in the hospital of the Provisional Battalion, and was most satisfactory in its operation, the reduction of the displaced bone having been accomplished with

ease and rapidity. This case, however, cannot be considered a fair test of its powers, as the joint had frequently

been dislocated before (although on this occasion the ordinary means for its reduction had failed).

FIG. 1.—Apparatus for reducing Dislocation of the Shoulder-Joint.



a a, A piece of strong hard wood, 20 inches in length and 3 in thickness, cut out at the wider end into

b b, The two arms.

c, Wooden block, into which the arms *b b* are inserted.

d, Moveable block acted upon by

e e, The wooden fixed screw.

f, An iron hook, firmly secured to the block *d*.

g, A padded band, having on the outside

h, An iron collar, connected with the body of the apparatus by

i i, Two fixed iron rings.

k k, A strap for securing the padded band to the side.

FIG. 2.

l l, Two straps, with iron loops, or eyes.

This is a padded strap for binding round the arm, above the elbow, by means of a piece of strong cord, the ends of which are looped in a slip-knot to the iron hook *f*.

CASE OF ANKYLOSIS OF THE JAW.

By J. G. FRENCH, Esq.

Surgeon to St. James's Infirmary.

RICHARD REDDING, aged 22, of spare habit, and whose general appearance was that of a lad under the age of puberty, died suddenly at St. James's workhouse, Nov. 23d, 1844. Being an orphan, he had been supported by the parish from two years and a half old, and was placed with a nurse at Wimbledon Common. He was unable to separate the jaws, and was fed through an aperture formed by the removal of four incisor (superior and inferior) teeth on the left side of the mouth.

He was always of a delicate constitution, suffering severely from cold weather, and having generally a blueish or leaden-coloured complexion. When he was about fourteen years of age, it was surmised that more freedom might be given to the motion of the jaw by a free separation of the soft parts which were supposed to have contracted to a great degree by cicatrization after a sloughing process during infancy; and

a surgeon of eminence thought this plan likely to succeed,—so little of the actual state of the parts could be ascertained by examination. Accordingly, incisions were made with this view, and the opening of the mouth was considerably widened by the knife to give more room for these incisions. No advantage resulted from this measure, and the lad continued to reside at one or other of the parochial establishments until his death, as he was too feeble to be able to procure his livelihood.

His diet consisted of the usual kind; he divided his food extremely small with a knife, then putting it through the aperture, it was submitted to some grinding on the right side of the jaw, which was long continued, and he thus slowly finished his meals.

He became latterly affected with all the signs of hypertrophy of the heart.

His death was very sudden; he called out to express great alarm at his condition, while taking exercise in the airing ground, was immediately carried up stairs to bed, and by the time medical assistance could be procured (about three minutes) he was dead.

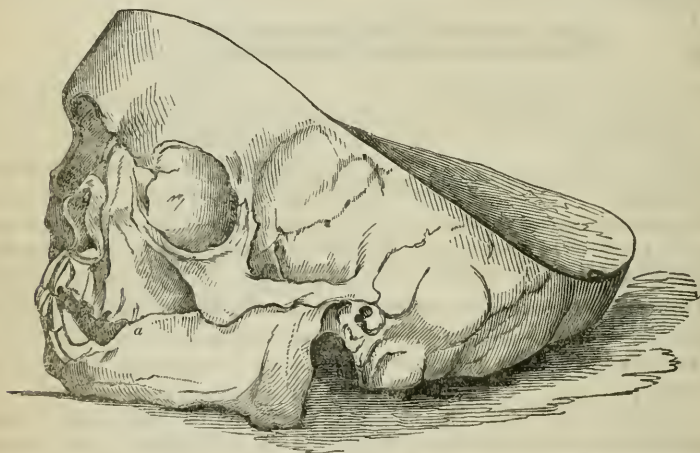
Examination of the body.—Head, membranes and brain, most highly congested, affording evidence that he died of congestive apoplexy; lungs healthy; heart greatly enlarged, weighing fourteen ounces. Abdominal viscera healthy.

The mouth was very small (the speech during life was distinct, and the voice not loud).

The jaws on the left side were perfectly united, and only the smallest degree of motion could be made on the right; the soft parts were removed, and the base of the skull was macerated,

when ankylosis was discovered to exist between the lower and upper jaw on the left side; the ramus of the inferior maxilla immediately external to the mental foramen, extending upwards by a broad thin plate, and uniting with a corresponding plate of the superior maxilla, a cartilaginous material forming the bond of this union.

The articulation of the jaws was normal, and, if the exact seat of the ankylosis had been known during life, it is probable that an operation might have been successful in restoring to a great degree the functions of the mouth.



a Seat of ankylosis.

CASE OF AVULSION OF THE LEFT ARM AND SCAPULA—RECOVERY.

A STOUT, well-formed boy, while tampering with the wheels of a grain-mill, got his hand entangled among the teeth, and the whole limb being rapidly drawn inwards, was torn from his body. He lay, for a few seconds, in a faint, but was easily roused; not a single drop of blood was observed to flow from the extensive and ghastly wound; and it appeared probable that not more than two ordinary-sized tea-cupfuls were lost at the moment of the accident. Not a fragment of the scapula could be discovered in its situation. The axillary artery projected from beneath the displaced clavicle to the extent of two inches and a half, and pulsated strongly to within an inch of its orifice, but gave exit to no blood. On a minute examination of the torn orifice, the external coat of the vessel was found to be divided into three irregular pieces, which encircled each other, and held in their embrace a small coagulum of blood. There was no venous hæmorrhage, and no large venous trunk was discovered. The artery was secured with a

ligature; about two inches of the projecting portion of the clavicle was sawn off; the integuments were drawn together by means of adhesive plaster, and made to cover, without any stretching, the vessels, nerves, and indeed the whole wounded surface, with the exception of a small irregular portion near the spine, about three inches in circumference. The reaction which followed this formidable laceration was very trifling. The portion of integument which had been brought over the lacerated nerves sloughed away; the plexus of nerves, which had become exposed to the extent of three inches, became partly sphacelated; still no bad symptoms occurred. In consequence of the extreme sensibility of the part, the ligature was allowed to drop off with the sphacelated nerves about the middle of the sixth week, after the boy had been walking about for some days in perfect health.—*London and Edinburgh Monthly Journal*.

A very similar case, but in which the recovery was still more rapid, is quoted from the *New York Journal of Medicine*, in the *GAZETTE* of April 12th, 1844.

MEDICAL GAZETTE.

FRIDAY, JULY 4, 1845.

WE elsewhere print the Memorial of the London College of Physicians (p. 429), which reached us too late last week, to allow us to make it the subject of any comments. In the first place, we must acquit the memorialists of having offered a deliberate insult to the profession, like that which was contained in the late Statement of the Royal College of Surgeons. The College of Physicians expresses its approbation of some parts of the Bill, namely, the clauses by which there will be a general registration of licensed practitioners, and the appointment (in the Council of Health) of a Board to which questions of medical polity and public health may be referred. It objects, however, to that part of the Bill which confers uniformity of privileges on graduates, on the ground that sufficient care is not taken to ensure uniformity of qualifications—the 23d Clause allowing any University to confer the degree of Licentiate in the Faculty of medicine upon students of the age of 22, after five years of professional study, only two of which will have been passed in a University, and without any security for a preliminary education or examination in literature and science. Such licentiates may graduate as Doctors of Medicine when they shall have reached the age of 26, and that without further University residence or professional study. It is contended that the early age of graduation, and limited course of study, are clearly at variance with the intentions of the College, and with the spirit of the 16th Clause of the Bill, by which physicians (*i. e.* University physicians) ought to be devoted to their studies up to the age of 26.

We think that the College of Physicians here attaches too much importance to a University residence. With *five years* of professional study, two of which must be passed in a University, there is surely sufficient reason for supposing that a man may become well fitted to take a Doctor's degree at the age of 26. We grant that he may not be so well advanced in classics or mathematics as the University man; but, after all, the public will value him according to his practical skill as a physician. We do not wish to underrate the benefits of a University education, but we have known more than one instance in which some classical knowledge might have been well exchanged for a practical acquaintance with anatomy and medicine. The great question really is, not whether a man is to pass his five years in a University, or *two* in a University and *three* in a large hospital, but whether the age at which the degree of Licentiate may be conferred (22) is not too early for a full and perfect medical education. We question how far the course of study can be fairly described as *limited*, seeing that it yet remains to be settled; and it will be in the power of the Council of Health to establish some uniformity on this point. There certainly should be a good preliminary education, and this should be tested before the individual has advanced in his medical studies.

The reason why an early age has been fixed appears to be, that the public require a class of physicians which the London College does not profess to provide; and competition, except so far as professional ability is concerned, is prevented with the M.D. graduates of the London College, by requiring that the age of 26 shall be attained before the M.D. degree is taken out by the new licentiate. If, with a five years' medical education*, and an early gradua-

* Under the old Bill, Inceptors could take out

tion, these licentiates are unable to keep their status with the public, the result will be so far in favour of the graduates of the London College; but we do not believe that the mass of the profession will join the memorialists in the view which they have taken of this question. At the same time, it is only just that no advantage should be given to the medical schools or Colleges of Scotland and Ireland over those of England. There should be a uniform curriculum, and then we think the English Colleges will not be entitled to complain; for, after all, the Licentiate will be rather the rival of the general practitioner, than of the graduate of the London College.

The College of Physicians next takes credit for various reforms which it professes to have made in throwing open the Fellowship to all licentiates of four years' standing, and by giving to all the right of voting in the election of Fellows, as well as by other provisions of a *liberal* nature; especially by offering to admit as Associates, without examination, and upon a reduced fee, all *bonâ fide* physicians now practising in England and Wales.

We confess we should like to have an exact definition of a *bonâ fide* physician; for, if we mistake not, the College has, in some instances of late, behaved with great illiberality and harshness in excluding from examination for the degree persons who, upon the assumption of liberality here set forth, ought to have been unhesitatingly admitted. They have also only tardily elected men whose names ought to have been long since in the list of Fellows; but here we think we perceive the effects of that University bias which their memorial displays. Let them consider whether they have not refused to examine for the *extra per-*

missus degree, men who, by many years' study, good professional standing, and practical knowledge, were at least deserving of being admitted to an examination. Let them consider whether they have not compelled others to go elsewhere, and whether this conduct, which we cannot denominate *liberal*, has not led to that infamous trafficking in foreign degrees, which has been openly carried on for some years, to the disgrace of the venders and purchasers. For our parts, we believe that the licentiates under the third edition of the bill, *i. e.* with five years' study of the profession, and early graduation, will be a far superior grade to the host of men who have of late years been thus led to purchase the sham title of Doctor from Giessen or Erlangen, and have thereby endeavoured to give themselves in the public eye a status above the respectable general practitioner. One of the great features of the present measure is, that all such false titles will be swept away.

There are other objections urged by the College, into the consideration of which our space will not at present allow us to enter. The College is not wholly opposed to the Bill, but they express a hope that Sir James Graham may find it possible to modify it in accordance with their own views. In the meantime, the Committee on the Bill has been postponed until Thursday, the 10th of July, when, according to Sir James Graham, the course which the Government intends to pursue with respect to the measure will be *positively* announced. We really cannot see why there should be such continued delays and postponements, or why the course of the Government should not have been at once declared. Sufficient time has been taken for the consideration of the subject, and these repeated procrastinations only serve to increase the agitation which has already been excited in the profession.

their degree after only *two* years' matriculation in a University. In the present measure *three* years' additional study are enjoined.

IN a late number of a legal journal* we find a charge brought against a surgeon or apothecary, that he has been acting as an attorney, and claiming in due legal form a balance of a debt due to a carpenter, threatening law-proceedings unless the sum claimed were immediately paid into his hands! It is also stated that this is not the only instance of his mingling law with physic. We hope there may be some mistake in the matter, for we never before heard of a *surgeon-attorney*—a sort of hybrid, whose existence we should have deemed scarcely possible. The particulars are, however, related with such circumstantiality, as to give the appearance of the charge being well founded. Probably no stronger case could be adduced to show the necessity for a full and complete registration of the medical profession. The individual may turn out to be a sham doctor as well as a sham lawyer; but the want of a proper registry prevents us from getting at the truth. All we can say is, that if members of the College of Surgeons thus venture to sue out writs of “*Quo minus*,” we may next expect to hear of solicitors, “with a bare sufficiency of medical knowledge,” bleeding and cupping their clients; and of barristers officiating in the “ordinary exigencies of surgical practice!” *Ne sutor ultra crepidam*.

THE homœopathic delusion still flourishes. It is a strange and unaccountable fact that there is no system of so-called *medical* treatment, too monstrous or too absurd, not to meet with supporters among individuals, from whom, by their station in society, we might reasonably expect a different line of conduct. It appears that there is a “Homœopathic Association” for the

suppression of allopathy, and for the extension of homœopathic principles. A festival has recently been held. Eighty gentlemen sat down to a dinner at the Albion, and the president of the meeting was a noble lord who is a great supporter of the system. Statistics were brought forward, and it was satisfactorily proved to those present, that the proportion of cures to deaths was most favourable to homœopathic doctrines. We have long been satisfied that statistics may be made to prove anything, according to the way in which the figures are used. The proceedings were wound up as usual with a subscription. If some of these noblemen and gentlemen would do us the favour to refer to a case, published at p. 122 of this volume, they would perhaps be better able to see what kind of system they are upholding, than by trusting to statistical reports.* We quite agree with the reporter of the dinner-proceedings, that the motto of the Association, “*similia similibus curantur*,” may admit of some latitude of interpretation,—thus it may imply that “simpletons may be cured by persons equally silly!”

Reviews.

Practical Observations on the Diseases most Fatal to Children, with reference to the Propriety of Treating them as proceeding from Irritation and not from Inflammation. By P. HOOD. 8vo. pp. 231. Lond. 1845. Churchill.

SOME of the doctrines of this author will, undoubtedly, meet with strenuous opposition from many pathologists; but it is easy to observe that, however peculiar his opinions upon the true nature of some infantile diseases may be, he is one who is not contented to treat them empirically, and one, too, who has brought considerable experience and an independent judgment to the subject which he undertakes to illustrate.

* Law Times, June 7th.

* See also a note by Dr. Schubert, p. 432.

Mr. Hood's work treats of most of the diseases incident to children, but throughout its pages there runs one prevailing idea, namely, that the so-styled inflammatory diseases of infants, do not, in truth, depend upon inflammation, or, at all events, upon a process analogous to inflammation as it occurs in the adult, but upon irritation; and that, hence, the practice of blood-letting in the infant should be wholly abandoned. We must confess that, upon opening this work, we felt almost in despair at the thought of being compelled to wade through more than two hundred pages, in which the long "vexed question" of "inflammation or irritation" was again to be revived, only to be submitted to new torments; but the really practical character of the work soon removed this impression, and we felt inclined to admit the plausibility of some of the author's favourite inductions, although unconvinced by many of the arguments by which they are sustained.

The following extract will convey an idea of the author's view of the nature of the inflammatory diseases of children:—

"The changes discovered after death in the bodies of infants who sink under disease, whether resulting from irritation, or so-called inflammation, may be said to consist almost entirely of the appearances resulting from imperfect circulation of the blood. In the brain, effusion may be found, quite sufficient to be assigned as a cause of death, although no suspicion has been entertained of any serious lesion having occurred in it: and in the chest, likewise, effusion is frequently discovered, although the lungs may not have been the chief seat of disease.

"Effusion within the 'shut cavities' (as the skull and chest) is looked upon as the most common termination of inflammation. It is also one of the most frequent of the *post-mortem* appearances found to exist where debility has prevailed. There is also no doubt that if the death struggle is much prolonged, effusion does frequently take place during that period. Next in frequency, congestion is found to exist in various organs; the blood, from causes previously mentioned, becomes stagnant in them, and alteration of structure is the result. The most frequent alteration of this kind is to be found in the lungs. The blood becomes condensed

in their substance, the watery part is thrown off, and the character of sponginess, so peculiar to those organs, is quite lost in the parts in which this prevails. This state is termed *hepatization*, the almost invariable result of what is called inflammation of the lungs, and of the bronchi.

The solidified blood produces a mechanical obstruction to the free passage of the remainder through the lungs; and there ensues great difficulty in the respiration, not more, perhaps, than one-half of the lungs expanding to the inhaled air. The consequence of this is, that the blood is imperfectly oxygenated, and thus produces irritation of the brain, which again produces convulsions." pp. 7—9.

These views may or may not be correct; they are in great part opposed to the opinions generally adopted by pathologists in this country; in France, however, they have long had many supporters. We do not feel convinced that satisfactory proof can, at present, be adduced that—in any given case of pneumonia, for example—the appearances of vascular engorgement, softening of tissue, and of effusion more or less solid within the cells, constituting hepatization, have not arisen from true inflammation, upon whatever cause depending, of the pulmonary structures. The success or failure of active antiphlogistic measures in acute cases affords no test whatever of the inflammatory or non-inflammatory nature of the diseases:—all well-informed practitioners are aware that there are many classes of true inflammatory affections, in which to deplete largely is to destroy the patient. Still, so long as there remains a class of men so obtuse and so ignorant of the true nature of disease, as to consider that the mere fact of pneumonia being found to exist, either in an infant or an adult, of necessity condemns the patient to free bleeding and the various *et cetera* of an heroic plan of antiphlogistic treatment, it would perhaps be as well that they should, for the present, be prevented from doing further mischief, by receiving instruction as follows:—"Irritation is the term most expressive of the peculiarities found to prevail in persons of this class" (individuals of feeble power, whose blood is deficient in fibrine); "and as blood-letting is inadmissible for the removal of this

state of disease, the adoption of this term would indicate the danger, if it did not entirely prohibit the practice, of blood-letting in the treatment of what is called asthenic or sub-acute" (?) "inflammation," p. 14. It would, however, be better could the practitioner, clearly perceiving the true nature of the disease, still comprehend the necessity of regulating his treatment, not by a mere nosological term, but by the actual exigencies of his patient's constitution; and this we believe most of the medical men of the present day endeavour to do.

The author conceives inflammation of the lungs and pleura "to be as rare in the infant as inflammation of the kidneys and prostate gland," and he maintains that, "in children, the treatment, with respect to depleting measures, ought also to be essentially different" (from that which is advisable in adults.) p. 13.

We like the author's opinions upon treatment far better than we do the pathological views upon which they are founded. His plan of treating bronchitis and pneumonia in infants is worthy of all attention (pp. 84, *et seq.*), but its details are too lengthy for quotation. The following extracts are also of value:—

"The prevalent opinion, that the progress of inflammation is so very rapid that there is but little time for the operation of lenient remedies for its removal, is, I think, an error which often produces great mischief. The symptoms usually produced, from the activity of the means used to subdue it, so exactly resemble those of violent inflammation in the adult, that the more antiphlogistic measures are employed, the greater appears the necessity for further depletion. I have frequently seen, that instead of the breathing becoming freer after the abstraction of blood, it has become more hurried; there was a blueness about the mouth indicative of impeded circulation; and the greater the quantity of blood removed, the stronger were the evidences of its imperfect passage through the lungs." p. 12.

"Children's diseases are not so speedy in their termination as is usually supposed; and where the practitioner has hesitated to abstract blood, and has used more lenient means, he has been rewarded; the child, so far from sink-

ing or dying immediately for want of blood-letting, has not only survived, but has proceeded rapidly to recover its usual state of health; while, by a contrary treatment, if it survived at all, its convalescence has been slow." p. 42. "The treatment most successful in allaying irritation," (which the author, by the bye, treats of in an article separate from those devoted to the inflammatory diseases), "consists in the use of remedies suitable to the organs which may be attacked. These comprise emetics, sedatives, and stimulating embrocations, when the lungs or the bronchi are attacked; sedatives and aperients of a well-regulated strength, and febrifuge medicines, when the brain is the seat of the disease." p. 44.

In speaking of the treatment of scarlatina, small-pox, convulsions, and several other diseases of infancy, the author renews his protest against the removal of blood, either by leeching or other means, from these little patients; and many of his arguments are just; but we doubt whether great harm would not be done by the entire disuse of moderate local depletion in some infantile diseases:—in robust children, the application of a leech or two, at the proper time, often appears to work the most beneficial effects. The remarks on "infantile physiognomy," at page 36, may be read with advantage. A page or two further on the following just observation occurs:—"If a child be 'fractious and cross,' there is not much danger to be apprehended. Crying is never to be looked upon with alarm. However ill children seem to be, if this exists, they may surmount the malady." p. 38. In speaking of the treatment of whooping-cough, the author says, he has found that the medicines which exert a salutary influence in this disease may be reduced to a very small number, when compared with the host of those prescribed for its cure; "but it is equally true that whooping-cough, when it occurs in a healthy child, and the season is favourable, requires frequently no medicine at all. The obstinate character of a complaint may usually be inferred from the number of medicines, frequently of the most opposite characters, that are said to be efficacious for its cure; and it is on this account that chronic diseases are frequently of much longer duration, from disappointment being felt that the good effects of

a particular medicine are not displayed with that degree of rapidity which is desired and expected from its use; this medicine being consequently omitted for another, which is readily selected when there are so many which have the character of specifics." p. 104. This is often very true.

Chronic bronchitis, as a sequel of hooping-cough, is alluded to (p. 107), but nothing is said of the severe character which, under such circumstances, this latter disease occasionally assumes, often so nearly simulating phthisis, both in its rational symptoms and physical signs, that considerable tact is required to form a true diagnosis of the case. The letter, upon the treatment of hooping-cough, written by Dr. James Gregory, of Edinburgh, with which this section concludes, is excellent; full of good sense and pithy argument, it is worth a dozen prosy treatises and dull clinical lectures.

In the chapter on croup, the author affords a striking instance of the manner in which the characters of disease may be made to favour a pet theory. After stating his conviction that croup is spasmodic, and belongs to the class of maladies arising from irritation, he gets over the difficulty presented by the obviously inflammatory character of the fibrinous exudation, which often lines the air-passages in this disease, by suggesting that the "irritation and agitation, kept up by incessant coughing, appear to be greatly influential in producing the exudations." p. 118. An opponent to his hypothesis would probably argue that the very reverse was the case. It cannot be questioned, however, that there is a form of croup which can almost invariably be traced to the influence of gastric irritation, and which usually subsides when the alimentary canal has been thoroughly cleared from morbid secretions by emetics and purgatives. But, of course, this form of the disease is not attended with the deposition of lymph in the air-passages.

Towards the end of the work the author devotes a separate chapter to a consideration of the injurious effects which he believes often arise from the idea that infants are capable of bearing large doses of calomel without detriment. The following extract contains the gist of his argument:—

"In infants, the purgative effects of

this remedy indicate when it is to be discontinued. I have known calomel continued, to the great injury of the little patient, on account of the unnatural appearance of the motions, which it makes of a green colour. It is very rare for children to be salivated, and hence it has been concluded that they can bear larger doses in proportion to their age than adults. The practice, however, that is founded on this opinion is fraught with peril. In adults, in whom it is necessary to produce salivation, it is found that if a purging occurs, calomel fails in producing that effect; and opium is usually combined with it to retain it in the system. The purging produced in infants by calomel is equivalent to salivation in adults; and directly that green coloured evacuations occur, it ought to be abandoned, for beyond that point it acts as a poison on the delicate and susceptible system of the infant." pp. 132, 133.

We cannot join Mr. Hood in his recommendation of calomel purges in cases where the urine is found albuminous, in the dropsy consequent upon scarlet fever. We have learned (in common, we believe, with many others) to feel a horror of this medicine in all instances where there is reason to suppose that the kidneys are in a state which at all approximates to Bright's disease. The author's plan of using opium in the head affections of children (p. 192), should be taken, with more reserve than the generality of the therapeutic means which receive his sanction. It is to be regretted that, instead of illustrating this subject by expressly citing the actual results of his own practice, he has merely advanced a somewhat dangerous opinion in a suggestive manner.

Upon looking over our notes, we find that we have rather alluded to what we conceive to be the faults of this work, than to the many observations of practical value with which its pages are stored. We certainly think that the author has carried his anti-inflammatory theory rather far; still, this is erring upon the safer side, and, we repeat, it is at the same time certain, that if surgeons cannot be persuaded to forbear from the unnecessary shedding of innocent blood, so long as the term "inflammatory" is applied to certain diseases, it would be better to call these diseases "irritations," even

at the expense of exciting the ridicule of the morbid anatomists. We believe that all classes in the profession may refer to this treatise with nearly equal advantage; the student will gain from it some useful precepts, and not a few of the seniors may learn to modify their treatment in a manner which will have no small tendency to preserve the existence of the "surplus population."

Proceedings of Societies.

MICROSCOPICAL SOCIETY.

June 18, 1845.

THOMAS BELL, ESQ. F.R.S. PRESIDENT,
IN THE CHAIR.

A PAPER by George Shadbolt, Jun., Esq., "On a British species of Ixidis, found upon Cattle," was read. The insects forming the subject of the present paper were found on some cows belonging to a farmer residing at Chingford, Essex, on the borders of Epping forest. They are known to the country people by the name of "tick," but they are aware that they differ from the insects of that name which infest sheep and goats. They are found upon cattle, attacking all parts indiscriminately, and causing much irritation and annoyance to them. They have been found in the number of several hundreds on a single cow, and have also been known to attack even human subjects, but this is not common; and, although it is probable that they infest other animals, the author has seen them only on cows. They do not appear to breed on the animals infested, but are produced in the forest into which the cattle are sent to graze, and which appear to become infested with them by their crawling up their legs while feeding. After having attached themselves by means of a very curious apparatus with which they are furnished, they gorge themselves with blood, and the abdomen increases in size from about the $\frac{1}{10}$ of an inch until they become as large as a small bean; when fully gorged they fall off, and the author was not able to ascertain their further progress. The form of this insect is oval; it has eight legs, in which particular it differs from the Brazilian species, discovered by Mr. Burk, in a former paper read to the Society; these last having but six. These legs are attached to the anterior part of the trunk, and consist of seven joints, the tarsi being terminated by a species of webbed foot, capable of being folded together, and furnished with two recurved claws. The oval apparatus by which it attaches itself is exceedingly interesting; it consists of two pulpi, serving as a kind of

sheath to the other parts when inactive, two jointed mandibles, and a barbed, or hooked labium. Specimens of this and other species were afterwards exhibited.

Another paper, by H. Deane, Esq., "On the existence of Fossil Xanthidia in the Chalk," was read. After mentioning that the occurrence of xanthidia in a fossil state in any other situation than in the flint nodules of the chalk, had not hitherto been observed, and consequently that great doubt existed whether these fossils were really independent animal existences, or only parts of some other creature, Mr. Deane stated, that there is a greyish kind of chalk, having no flints, but containing quantities of nodules of iron pyrites, which juts into the sea between Dover and Folkstone, forming the beach for some distance. Upon exposing a portion of this to the action of hydrochloric acid, and examining microscopically the insoluble sediment, bodies similar to, if not identical with, the xanthidia in flints, were exposed to view; several species were clearly to be recognised, together with casts of polythalamia, and other bodies, frequently found in flints.

The Society then adjourned until October next.

Hospital and Infirmary Reports.

LIVERPOOL DISPENSARY FOR DISEASES OF THE EYE.

Disease of the Eyeball closely simulating malignant fungus. By DR. R. H. TAYLOR.

W. W. æt. 21, of lymphatic temperament and strumous habit, after exposure to cold and wet, was affected, on the following morning, with slight oedematous swelling of the upper eyelid, which subsided, however, towards evening. During three or four days the swelling continued to reappear in the morning, and subside at night; it then became permanent, and there was smarting pain of the eye, but the vision was not affected. Having continued in this state for about a week, the swelling of the lid began to increase, and extended to the conjunctiva of the globe, which became red and chemosed. The whole eye now began to be protruded from the orbit; there was some degree of deep-seated pulsating pain, and considerable intolerance of light, but vision was still good. About the fourth week from the commencement of the attack, the cornea began to inflame; lymph was deposited in its substance, first at one limited point, but gradually extending throughout the whole texture, till its transparency was destroyed, and vision reduced to the mere perception of light and shade.

When I saw the patient for the first time at this period of the disease, the globe was protruded from the orbit fully one-third beyond its habitual position, and could barely be covered by the palpebræ, which were red and swollen. The conjunctiva of the globe was very red, infiltrated with serum, and projecting over the lower tarsus, and there was a copious secretion of pus from its surface. The cornea was dry upon its external surface, densely opaque, and a deep ulcerated sulcus ran round its outer border. There was slight pain of the eye and corresponding temple, and some constitutional disturbance. On the second or third day from this date, the cornea suddenly gave way during the night, with considerable pain, and the escape of a small quantity of vitreous humour. The crystalline lens could not be found amongst the discharge. The iris was now pushed forward through the aperture previously filled by the cornea, and protruded in the form of a tumor, of a somewhat conical figure, puckered in towards the centre of the apex, which was depressed. In colour it was reddish, intermingled with a few patches of dark matter, probably fragments of the pigmentum nigrum; the whole surface was very sensible to the touch. The appearance of the eye at this period very closely resembled that of medullary fungus passing into its third stage, and beginning to protrude from the globe.

In this condition the eye remained for about a week or ten days, except that the swelling of the palpebræ and globe began to subside; small quantities of vitreous humor escaped from time to time, and the irritability of the tumor gradually diminished.

Having occasion to leave home at this time, I did not see the patient again for more than three weeks. I then found that the swelling of the palpebræ had entirely subsided, and they had resumed their natural form; the globe had shrunk within the tarsi; it was soft and slightly tender on pressure, and reduced at least one quarter beneath its normal dimensions. The position of the cornea was indicated by a deformed semi-opaque patch, about the diameter of a split pea, through which the patient could still faintly discern light and shade. Since then the globe has continued to shrink still further, and will probably become at length completely atrophied.

Vision of the right eye was somewhat disturbed, while the inflammatory symptoms were at their height in the other; but it improved as they declined, and the eye has long ago resumed its natural and healthy functions.

REMARKS.—This case presents several features worthy of note, and I know not if they can be brought out in a manner better calculated to fix the attention, and awaken

interest, than by simply relating the circumstances under which I first saw the patient. I was requested to visit him in consequence of the hesitation of two medical men who were in attendance to coincide in opinion with a third, who affirmed that the eye was the seat of medullary fungus, and must be immediately extirpated. The appearances exhibited by the eye at my first visit have been already described, and I must confess that the first glance at the protruded globe, and opaque sloughy cornea, awoke a suspicion of something malignant. An attentive examination of the eye, however, and inquiry into the previous history of the case, convinced me that the disease was not of a fungoid character. The fact that the patient had enjoyed almost perfect vision for three weeks after the commencement of the symptoms, and was even still able to distinguish light and shade, would alone have been decisive against the supposition of fungus of the globe, in which blindness occurs from the very first, long before any apparent change of structure may have indicated the progress of the malignant growth.

The œdematous swelling of the palpebræ after exposure to cold, followed by gradual protrusion of the globe, and accompanied with occasional pulsating pain in the orbit and temple, led me rather to the conclusion that the disease consisted either in inflammation of the cellular membrane of the orbit, in consequence of which the globe was pushed outwards, and sloughing of the cornea induced by the chemosis and pressure which followed,—a result which happens so frequently in purulent ophthalmia of the adult,—or that the inflammatory action, commencing in the globe itself, had extended forwards to the cornea, and backwards to the orbit. Either of these conditions would sufficiently explain the structural changes which had taken place, and appeared to be much more consistent with the previous history of the case than the supposition of fungoid disease.

The treatment adopted was founded upon these views. The eye was covered with a bread-and-water poultice, and in consideration of the feeble strumous habit of the patient, a more nutritious diet was prescribed than had previously been allowed. After the cornea had given way, and the disorganized iris protruded through the aperture, the resemblance to a fungous growth was certainly very close, and had I seen the eye for the first time at this period of its history, my impression, from simple inspection of the appearances, would undoubtedly have been, that the disease was of a malignant nature. The reasons above stated, however, seemed so decisive against this supposition, that the treatment at first adopted was persevered in. At the end of a week or

ten days, when the inflammatory swelling had begun to subside, the poultice was exchanged for a slightly stimulating wash, which was continued so long as any application was deemed necessary. During my absence, portions of the thickened conjunctiva, overhanging the lower tarsus, were cut off. The wound healed rapidly, and the process of absorption seemed to be expedited in the remainder of the texture.

The particular form assumed by the tumor, which protruded through the corneal aperture, viz. depressed at the centre, and drawn in and puckered round this point, may be explained by the supposition that the papillary border of the iris had become adherent to the capsule of the crystalline lens previous to the rupture of the cornea, and that this body was not discharged from the eye. Had the lens escaped, the free border of the iris would not have been thus retracted, and the vitreous humour would probably have flowed out in much greater quantity. In chronic internal ophthalmia we not unfrequently observe this peculiar bulging of the iris behind the cornea, and are able to ascertain through the transparent textures that it arises from that structure being subjected to pressure posteriorly, while adherent both at its ciliary and pupillary borders. In such circumstances, the central parts of the iris can alone yield, and hence, instead of a flat glistening surface, extending from the margin of the sclerotics to the edge of the pupil, it presents a dull protruded contiguity, and the pupillary border being firmly adherent all round to the capsule of the lens, exhibits the appearance of central depression, varying in depth according to the prominence of the surrounding parts.

The records of ophthalmic medicine supply the details of many cases in which anomalous tumors of the eyeball have been mistaken for malignant growths, and the organ itself extirpated under this impression, afterwards found to be erroneous. The instance above adduced supplies another example of the difficulties to be met with in such cases, and furnishes an additional incentive to caution and investigation lest we should mistake an affection simply involving the loss of an eye, for one which invariably terminates in the destruction of life.

Correspondence.

INSPISSATED AND DESICCATED OX-GALL.

To the Editor of the Medical Gazette.

SIR,—Dr. Allnatt has, I see, used your columns as the medium of answering an inquiry put to him by "A Chemist," in the pages of the *Lancet* of the 14th inst., re-

garding the proper mode of inspissating ox-gall. As the result of my observations, extending through a period of more than three years, on the preparation and use of this agent, somewhat differs from his, I hesitate not to forward you my opinion of the best mode of preparing ox-gall for therapeutic purposes.

It may be premised that in practically testing the reputed medicinal properties of any new or extra-pharmacopœical substance, I am very scrupulous in satisfying myself of its purity, and the correctness of its preparation; so much so, indeed, as generally, where practicable, to superintend the various pharmaceutical processes. The advantage of this procedure to the physician and his patients, as well as the guarantee it affords for a more accurate estimate of the medicinal properties of remedial agents, must be too obvious to require elucidation.

In preparing ox-gall for internal administration, great care should be taken in selecting perfectly healthy gall-bladders of young oxen; studiously separating any which may contain bile mixed with abnormal mucus, purulent deposits, or calculous formations. If this be not done, the apothecary will find his labour thrown away; for, instead of evaporation leaving a useful product, the result will be a disagreeable foetid residue, quite unfit for use. A similar result may likewise follow the decomposition of normal bile by the employment of too high a degree of temperature.

To inspissate gall, any quantity of fresh healthy bile should be previously allowed to remain in a deep earthenware vessel for about twenty-four hours. The clear, transparent, bright green-coloured tenacious supernatant fluid should then be poured on to a wide flat dish, and set in an oven, of a temperature not exceeding 100° Fah., until the whole be reduced to the consistence of an extract. In this state it can be formed into pills, but not into powder; a very desirable form of administration in infantile complaints. Its great deliquescence renders it exceedingly difficult of preservation. Nor does the admixture of magnesia, previously to its evaporation, remove this property, while it augments the bulk of the material so considerably as to make it inconvenient for pills. Besides, inspissated ox-gall, kept most carefully in stoppered bottles, soon becomes too moist for use. When made into pills, and immersed in magnesia, or powdered liquorice root, or even enveloped in gold or silver leaf, they soon, from the same cause, conglomerate into one mass. To obviate this inconvenience, which no doubt would materially limit the usefulness of this invaluable medicinal agent, I suggested some time since, that, instead of merely inspissating the gall, the evaporation

should be pushed by the same low temperature and slow process to perfect desiccation. This plan has been adopted, and the *desiccated ox-gall* which I now employ is easily preserved in the form of a dry, friable, easily pulverizable, bright grass-green coloured, and slightly aromatic animal smelling mass, which retains all the original properties of the gall, is readily mixed with other materials into the form of powders, with facility converted by the addition of small quantities of spirituous fluids, or essential oils, into pills, and without difficulty preserved from deliquescence.

On a future occasion I propose to give illustrations of the therapeutical virtues of ox-gall, as well as of several other medicinal agents, not very generally employed by the profession.—I remain, sir,

Your obedient servant,
J. HUNTER LANE, M.D. Edin.

Maddox Street, Hanover Square,
June 23, 1845.

DEFECTS IN THE REGISTRATION ACT.

To the Editor of the Medical Gazette.

SIR,—In your number for May 30, which I have just read, is an article headed “Sug-
gestions for Important Improvements in the
Registration of Births and Deaths.” The
writer thinks that a great improvement
might be made by requiring returns from
the several hospitals and workhouses of the
places of abode of each deceased inmate
immediately before his removal; but al-
though this might be very useful for sta-
tistical purposes, in furnishing a correct
registration, a much greater improvement is
necessary, namely, a proof in each case that
the person has *died in the district*, and that
no other registration has or can take place.
I believe that at present double registration
is by no means difficult, and may be exem-
plified by the following case, the facts of
which are known to me. The death of a
person in an hospital was registered as such,
but was afterwards entered in another dis-
trict, where they lived, by the relatives, for
some convenience to themselves relative to
the burial.

May it not frequently happen, also, that
where persons from the country die in Lon-
don, and their bodies are conveyed home for
burial, or *vice versa*, a double registration
is effected—one in London, the other in the
country?

Some alteration such as I here propose
would be highly useful, and ought to be
adopted.—I am, sir,

Your obedient servant,
M.D. Cantab.

Brook Street, Grosvenor Square,
June 25, 1845.

ASYLUM FOR THE INSANE OF THE MIDDLE CLASSES OF SOCIETY.

To the Editor of the Medical Gazette.

SIR,—I am anxious to draw the attention
of the medical profession to a plan for an
asylum for the insane of the middle classes
of society, and trust to your kindness to do
so in the pages of the GAZETTE.

I believe there are few practitioners who
are not occasionally at a loss respecting the
disposal of an insane person, whose family
is much above the condition of pauperism,
and yet not so rich as to bear the expenses
attendant on sending an afflicted relative to
a good private asylum.

Lord Ashley has most kindly consented
to take the Chair at a meeting to be held at
the Freemasons' Hall, on Thursday, July
10th, for the purpose of establishing an asy-
lum in the neighbourhood of London, to
which respectable persons of the middle
classes when affected with insanity may be
admitted for moderate annual payments, and
enjoy every advantage of treatment necessary
to them. This plan has the sanction of sev-
eral medical men attached to asylums, and
if the general co-operation of the profession
can be secured for it there can be no doubt
of its success, and of its being the means of
preventing much distress and misery for
which at present there is no relief.

I am so continually applied to in cases of
this kind that I am deeply anxious to see
an institution for this purpose, and my
knowledge of the sympathy of the medical
profession with all attempts to improve the
condition of the insane, strongly encourages
me to hope that it will not be wanting on
this important occasion.—I am, sir,

Your obedient servant,
J. CONOLLY.

Hanwell, June 30, 1845.

[We willingly give insertion to this letter,
and trust that it may be the means of draw-
ing the attention of the profession to a most
important subject—the establishment of a
good and economical asylum for the recep-
tion of the insane of the middle classes. At
present these unfortunate persons are scat-
tered over the country in small boarding-
houses, or are placed as solitary pensioners
in private families. There is no attempt at
treatment, and in this respect they are in a
worse position than the pauper inmates of
our county lunatic asylums.—ED. GAZ.]

ON THE USE OF SEA WATER IN SCROFULOUS AFFECTIONS.

To the Editor of the Medical Gazette.

SIR,—Several years have elapsed since a
paper of mine appeared in the pages of the
MEDICAL GAZETTE, “On the Internal use
of Sea Water,” and it is my wish on the

present occasion to draw the attention of the profession to its value as a remedy in scrofulous affections. We all know the obstinate nature of these complaints, and how little they are under the control of ordinary treatment: it is therefore with real satisfaction, that I introduce to their notice a remedy, which, so far as my own limited experience extends, has proved most satisfactory; I cannot arrogate to myself any merit in having made a discovery, as the inhabitants of this coast have from time immemorial employed it in this disease, and therefore the utmost I can lay claim to is having tested its virtues, and, perhaps, of having ascertained the most effectual mode of employing it; and this consists in the combined use of sea water, both internally and externally, either in the form of tepid baths, or cold sea bathing,—the circumstances of each individual case must decide which of them is preferable; but it will generally be found advisable to begin with tepid baths, and then at the end of two or three weeks to resort to cold sea bathing.

Treatment.—As soon as the patient rises in the morning, to drink sea water, mixed with an equal portion of warm spring water; the quantity of sea water required by an adult, to act freely upon the bowels, is generally from eight to twelve ounces, and a smaller quantity for children, according to their age; but of course it will be necessary to vary the dose, according to the constitution of each individual, only taking care that it operates sufficiently: after this is over, which will generally be soon after breakfast, the patient may then bathe, either in the tepid bath, or sea, as may have been decided upon: the patient must not take milk for breakfast, as it combines readily with the muriatic acid of the sea water*, and makes the patient shivery and uncomfortable the whole day, and unfit to bathe, as reaction will not take place. This plan may be continued for many weeks, without intermission, unless the patient appears to be reduced by it; but, in general, the patient gains both strength and appetite; nevertheless, I have been in the habit of resting a few days at the end of each fortnight, and then commencing again, although I have no certain proof that this is necessary.

I need not point out how in this plan the whole system must be saturated with the constituents of sea water, that portion which is taken internally, carrying off the watery particles of the blood, raising the temperature of the body, increasing the action of the heart, and rendering the blood more

florid; under these circumstances, the skin is prepared to absorb with avidity the fluid into which it is immersed, and it is then conveyed through all the tissues of the human body.

Under this discipline, scrofulous tumors are absorbed, and scrofulous ulcers heal more speedily and more certainly, than under any other mode of treatment with which I am acquainted: and we may fairly presume that tuberculous deposits are removed in a similar manner, although we have no means of demonstrating the fact.

In what manner the sea water acts upon the disease it is perhaps difficult to determine; to the iodine contained in it we are probably partly indebted, but I believe it is chiefly attributable to the saline properties imparted to the blood, a deficiency of which having rendered the solution of the albumen imperfect, it became deposited in the various tissues which were intended only to secrete the more watery particles.

The best application to the tumors and ulcers during the above treatment, is to keep them constantly covered with the green sea moss, moistened with sea water, and the diet should comprise a good allowance of animal food, but all sorts of stimulants should be carefully avoided. I shall probably return to this subject in a future communication.—I remain, sir,

Your obedient servant,

EDWARD GREENHOW, M.D.

Fellow of the Royal College of
Physicians in Edinburgh.

North Shields, June 18, 1845.

Medical Intelligence.

A MEMORIAL

Addressed to the Right Hon. Sir James Graham, Bart. M.P., Her Majesty's Principal Secretary of State for the Home Department, by the Royal College of Physicians of London, June 18, 1845.

THE Royal College of Physicians of London feels itself called upon respectfully to address Sir James Graham on the important alterations which have been made by the Committee of the House of Commons in the Bill for regulating the Profession of Physic and Surgery.

Enactments, equally new and important, have now been introduced into it for the first time, which were never contemplated in the course of the discussions that have hitherto taken place between the College and Sir James Graham.

In order to explain its views respecting these enactments, the College begs, in the first place, briefly to recal to Sir James Graham's recollection the tenor of those dis-

* [The fact may be as stated by our correspondent, but we may observe that there is no muriatic acid in sea water, and we do not see how the neutral alkaline chlorides which it contains, can have any chemical action upon milk.—ED. GAZ.]

cussions, and the circumstances connected with them.

Before any measures affecting the medical profession had been submitted to Parliament by the Secretary of State, the College had carefully investigated the grievances complained of in numerous petitions to Parliament for medical reform, and had laid before the Government some suggestions concerning them.

The most prominent of the alleged grievances were found to be as follows:—

1. The want of a General Registration of Licensed Practitioners.

2. The want of some Body or Board to which questions of medical polity and of public health might be referred.

3. The existence of local jurisdictions, and consequent restrictions upon practice and inequality of privileges.

4. The want of uniformity in the education and examinations conducted by different institutions, and great disparity thence arising in the qualifications of practitioners passing under the same denomination.

5. The continuance of self-election into the governing bodies of the different medical corporations.

The College has already taken occasion to express to Sir James Graham its approbation of the manner in which the two first-mentioned wants are supplied by the bill, viz. by the system of general registration therein directed, and the establishment of a Council of Health.

With respect to the two following grievances, the College suggested that, provided uniformity of qualifications could be obtained, reciprocity of privileges might properly be granted. And it professed itself ready to concede to a considerable extent its own peculiar privileges, and to confer, without further examination, the license to practise in London on the graduates and licentiates of Ireland and Scotland, *provided it could be assured that such licentiates and graduates had been educated up to the standard which the College had fixed as necessary for physicians.*

For the College has constantly retained, and often expressed its desire that nothing should be done to lower the standard of the general and professional acquirements of physicians: and it is but justice to Sir James Graham to state that he has always manifested a cordial participation in this desire of the College.

Nevertheless, the College fears that clauses which have been introduced into the Bill are not unlikely to cause that standard to be lowered. For instance, the 23d clause allows any University to confer the degree of licentiate in the faculty of medicine upon students, of the age of twenty-two, after five

years of professional study, only two of which will have been passed in a university, and without any security for a preliminary education or examination in literature and science. Now there will be no restriction to prevent these licentiates from graduating as doctors of medicine, so soon as they shall have reached the age of twenty-six, and that without further University residence or professional study; for the 22nd clause, the only one imposing any restriction on medical degrees, does not require for doctors of medicine a term of residence of longer duration or a course of study of greater extent and comprehensiveness than those already specified.

This early age of graduation and limited course of study are clearly at variance with the intentions of the College and the spirit of the 16th clause of the Bill, by which physicians ought to be devoted to their studies up to the age of twenty-six.

For the reasons which have been assigned, the College considers the 23rd clause to be inexpedient. It would seem also to be introduced unnecessarily, because by the 14th clause provision is, as it should be, made to enable those who wish to act as general practitioners to do so at an early age. And such persons may afterwards, by one of the provisions of the 16th clause, become physicians, if by successful cultivation of medical science they have raised themselves in general estimation.

With respect to the last of the grievances above mentioned—self-election into the governing bodies of the medical corporations—the College offered to redress this grievance, as far at least as physicians in this country are concerned, in the most complete manner, by opening the Fellowship to all licentiates of four years' standing, and by giving to all the right of voting in the election of Fellows; as well as by other provisions of a liberal nature; especially, by offering to admit as Associates, without examination and upon a reduced fee, all *bonâ fide* physicians now practising in England and Wales.

The College was then informed, by a letter which its President had the honour to receive from Sir James Graham in Feb. 1842, that if the alterations above stated, and others of a similar nature suggested in that letter, were made in the internal constitution of the College, it was the intention of Her Majesty's Government to propose a measure to Parliament whereby the powers and privileges of the College, as an *examining* body, would be greatly increased. According to the advice thus tendered, and with the sanction and co-operation of the law officers of the Crown, the College proceeded to prepare, with considerable pains and expense, the draft of a new Charter, embracing the

alterations which it had itself proposed, as well as those suggested by Sir James Graham. The College has ever since been waiting for an act of the legislature to enable it to accept this Charter. It deeply regrets that, meanwhile, the General Bill, in conjunction with which the new Charter was to have been accepted, has, in many respects, been materially altered.

As the Bill was originally framed, the College was required, indeed, to surrender the examination of all Scotch and Irish physicians; but it was authorised to superintend the examination of all persons, of whatever grade, who should seek to obtain in this country a license to practise medicine. And as the College was instituted for the promotion of medical science, it does indeed seem proper that to it should be entrusted the duty of testing the qualifications of all those who are to have the sanction intended to be given by the Bill of being qualified to practise medicine, just as to the College of Surgeons was to be entrusted the duty of testing the qualifications of persons to practise surgery. In the Bill as previously framed, and even in its amended form, this idea is carried out in regard to general practitioners in Scotland and Ireland; for to the respective Colleges of Physicians and Surgeons, in each of those parts of the United Kingdom, is entrusted the function of examining general practitioners. And the College believes that such a principle, if carried out in England, would ultimately give satisfaction to the great body of general practitioners throughout England and Wales, as well as tend to the advantage of the public.

By the amended Bill, however, the authority to examine general practitioners is no longer given to the College of Physicians of England, although it is still given to those of Scotland and Ireland. Nor, in the opinion of the College, is anything like an equivalent for it afforded by the 17th Clause of the Bill as amended, which clause prescribes only a *preliminary* examination before a joint medical and surgical board.

It does not appear to the College to be at all a proper arrangement, that persons who have undergone a previous examination by physicians and surgeons, should be examined subsequently in medicine and surgery by general practitioners.

It is a further and a great objection to such double examination, that it must operate as a discouragement to medical education in England, since in Scotland or Ireland a single examination will be sufficient to qualify for practice.

With respect to the new incorporation, made known in the amended Bill by the name of "the Royal College of General Practitioners in Medicine, Surgery, and

Midwifery of England," the College, without objecting to the incorporation of the general practitioners, would press upon the attention of Sir James Graham, that as the College of Physicians was specially founded for the promotion of medical science, and for the regulation of medical practice, there are strong objections to the assumption by this new institution of the title of the "Royal College of Practitioners in Medicine."

Nor is it to the assumption of a title only that the College sees reason to object. It must object, even more strongly, to the latter part of the 32d Clause, which gives to general practitioners the right to fill *ALL medical and surgical offices*, and thus confides the highest duties of the profession to that class which is required to pass through the least extended education, and which is admitted to practise at the earliest age.

In offering the foregoing observations, the College is so fully convinced of Sir James Graham's desire to maintain a high standard of education for physicians, as well as to support the College in the discharge of its proper functions, and even to extend, if possible, its sphere of utility, that it cannot doubt that the remarks which a sense of duty has dictated, will be received with the candour and the attention which the College has met with from Sir James Graham on every occasion.

There are other points in the Bill, of minor importance, to which the College is also desirous of requesting Sir James Graham's attention.

With respect to the constitution of the Council of Health, if the representative principle is to be retained, at least in part, there ought not be two members of it returned by the College of General Practitioners, since one member only is to be returned by each of the Colleges of Physicians and Surgeons.

In Clause 27, "For securing efficiency of examination," Sir James Graham has yielded to the wish of the College, that none but professional persons should be allowed to be present at the examinations. The alteration, however, which has been made in the composition of the Council, seems to render it even more desirable than before, in order to obviate some possible jealousies and interferences between the different orders of the profession, that no one should have an absolute right to be present at the examinations, unless deputed by the Council for that purpose.

As regards the arrangements for general registration, the College observes with satisfaction that the register is now expressly ordered to be received as evidence in courts of law. It does not seem, however, sufficiently clear, whether the supplemental register provided by the amended Bill is

intended to contain the names of *all* persons now legally practising, as well those with general as those with only local privileges. Those, also, who are registered on the supplemental register should be required to send in annually their names and places of abode, as ordered by a previous clause with respect to the register.

In some points the Bill has been amended to the satisfaction of the College. In particular, the College approves of physicians and surgeons being compelled to enrol themselves in the College of the country in which they practise, under the penalty of being struck off the register. Also, of a penalty for false pretences of qualification being imposed by Clause 38, not only on persons unregistered, but on those also who should use a name or title belonging to a class in the registry to which they do not belong.

In conclusion, the College ventures to express a hope that Sir James Graham may find it possible to modify the Bill in accordance with the views which have now been respectfully offered. For thus, in the judgment of the College, it is likely to be productive of greater advantage to the profession and the public than can justly be expected from it under its present form.

FRANCIS HAWKINS, Registrar.

THE SECRETS OF HOMŒOPATHY—HAHNEMANN AND HIS SYSTEM. BY DR. SCHUBERT OF DRAMBURG.

WE hear it continually asserted that Hahnemann placed no confidence in the powers of nature in curing disease; but, from my intercourse with him, I am quite satisfied that no physician ever trusted more to the *vis medicatrix nature*. It requires, indeed, but very little reflection to enable us to perceive, that it was through the closest acquaintance with the curative powers of nature, that Hahnemann was led to adopt his new system of medicine. I have heard him declare, that he looked with contempt upon medical practice, and he thought that a patient would be none the worse if left to himself. He had a thorough conviction that all curable diseases might, under proper attention to diet, be removed by the efforts of nature alone; he looked upon these as his sheet-anchor. On one occasion, he said to me, "I give medicines but very seldom, although I always prescribe small powders! I do this for the sake of keeping up in the patient's mind the firm belief that each powder contains a particular dose of some medicine! Most patients will get well by adopting a simple mode of living, and by placing a boundless confidence in their medical attendants. Ordinary practitioners know nothing of this practically, although they are always talking of the healing powers

of nature. If a patient recover under their treatment, they immediately ascribe it to the nauseous drugs which they have poured into him, although these commonly do more harm than good." He never hesitated to promise recovery to every patient, without concerning himself about the nature of the malady;* and I have seen some most ludicrous results follow these predictions. His plan was to demand for the cure, in the shape of a fee, a good round sum—one half to be paid down,—*unlimited confidence* in his treatment,—doses of sugar of milk, and a particular diet! The dieting, which simply consisted in the denial of all stimuli, he considered to be absolutely necessary in order to allow nature to have free play. *Unlimited confidence* in the treatment was his great support in carrying out this system; and he invariably insisted upon this from every patient, well knowing that it was the important secret of life and death in such cases. Further, he used to observe, "We must not attend patients for nothing, or let them have even a pennyworth of medicine gratuitously; the greater the sum paid for physic and physician, the greater is the confidence placed in both."—*Casper's Wochenschrift*, März 1845.

[It is to be regretted that Hahnemann's followers do not display the candour of their master. The secret of the apparent success of homœopathic treatment has been long known; but it is satisfactory to have it confirmed by so free a confession on the part of the founder of the system. Some of the homœopaths allege that the "*small powders*" contain active principles brought, by trituration, to a *spiritualized* state! and this is the answer which we have heard seriously given to the objection, that in their globules you cannot, by the most delicate chemical test, detect the smallest quantity of the substance said to be present (sulphuric acid, for example). We believe that the "*small powders*" act in the way suggested by the founder of this gross delusion; but the disciples go farther than the master. We knew a case in which sugar of milk was prescribed, with a promise of cure, for a patient labouring under confirmed amaurosis! Why are not such impostors prosecuted for obtaining money under false pretences?—*Ed. Gaz.*]

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Causes and Laws in relation to natural phenomena—A hint to the Author of the "Vestiges of Creation."

SIR JOHN HERSCHEL, on taking the chair at the late meeting of the British Association.

* See the Homœopathic Case by Mr. Jones, p. 122 of this volume.

tion at Cambridge, made in the course of his speech the following sound remarks, in relation to the doctrine, now becoming prevalent, that natural phenomena are to be explained, not by referring them to their *causes*, but by assigning them to the operation of certain *laws*!

"The evil I complain of becomes yet more grievous when the idea of *law* is brought so prominently forward, as not merely to throw into the background that of *cause*, but almost to thrust it out of view altogether; and if not to assume something approaching to the character of direct agency, at least to place itself in the position of a substitute for what mankind in general understand by *explanation*: as when we are told, for example, that the successive appearance of races of organised beings on earth, and their disappearance, to give place to others, which Geology teaches us,—is a result of some certain law of development, in virtue of which an unbroken chain of gradually exalted organization from the crystal to the globule, and thence, through the successive stages of the polypus, the mollusk, the insect, the fish, the reptile, the bird, and the beast, up to the monkey and the man (nay, for aught we know, even to the angel), has been (or remains to be) evolved. Surely, when we hear such a theory, the natural, human craving after *causes*, capable in some conceivable way of giving rise to such changes and transformations of organ and intellect,—*causes why* the development at different parts of its progress should divaricate into different lines,—*causes*, at all events, intermediate between the steps of the development—becomes importunate. And when nothing is offered to satisfy this craving, but loose and vague reference to *favourable circumstances* of climate, food, and general situation, which no experience has ever shown to convert one species into another; who is there who does not at once perceive that such a theory is in no respect more *explanatory*, than that would be which simply asserted a miraculous intervention, at every successive step of that unknown series of events, by which the earth has been alternately peopled and dispeopled of its denizens?

"A *law* may be a *rule* of action, but it is not *action*. The Great First Agent may lay down a rule of action for himself, and that rule may become known to man by observation of its uniformity: but constituted as our minds are, and having that conscious knowledge of causation, which is forced upon us by the reality of the distinction between *intending* a thing, and *doing* it, we never substitute the *Rule* for the *Act*. Either directly, or through delegated agency, whatever takes place is not merely *willed*, but *done*, and what is done we then only declare

to be explained, when we can trace a process, and show that it consists of steps analogous to those we observe in occurrences which have passed often enough before our own eyes to have become familiar, and to be termed *natural*. So long as no such process can be traced and analyzed in this manner,—so long the phenomenon is unexplained, and remains equally so whatever be the number of unexplained steps inserted between its beginning and its end. The transition from an inanimate crystal to a globule capable of such endless organic and intellectual development, is *as* great a step—*as* unexplained a one—*as* unintelligible to us—and in any human sense of the word *as miraculous*, as the immediate creation and introduction upon earth of every species and every individual would be. Take these amazing facts of geology which way we will, we must resort elsewhere than to a mere speculative *law* of development for their explanation."

Selections from Journals.

FORENSIC MEDICINE.

RECENT DECISION ON THE LAW OF RAPE.

Saturday, April 26.

(Before all the Judges, except PARKE, B. and MAULE, J.)

REG. v. CAMPLIN.

If a man makes a woman quite drunk, and then violates her person, he is guilty of rape, though the jury find that he administered the liquor for the purpose of exciting her only, and not with the intention of rendering her insensible, and then having sexual connection with her.

THE prisoner was tried at the Old Bailey on an indictment for rape, committed on the person of a girl thirteen years old. The evidence was that the prisoner made her quite drunk, and whilst she was insensible, violated her. The jury found that the prisoner gave her the liquor for the purpose of exciting her, and not intending to render her insensible and then have connection with her. The prisoner's counsel objected that the crime of rape was not proved, and that point was reserved for the opinion of the judges.

Ballantine, for the prisoner, now contended that in order to constitute the offence of rape, there must be an actual resistance on the part of the person ravished; and that the form of indictment containing the words "violently and against her will," proved that necessity; but, further, that in the present case, according to the finding of the jury, there was neither force nor fraud. It was an improper thing to give the girl liquor,

but the jury had negatived any intention to commit a rape. All the evidence went to shew that if the man had any intention at all, it was to induce the woman to consent; and the learned judge distinctly put to the jury the two questions, whether the prisoner gave her the liquor intending to have connection with her by force, or only for the purpose of exciting her.

Authorities referred to: 1 Hawk. 41, s. 6; *R. v. Jackson* (R. & R. 487); *R. v. Saunders* (8 C. & P. 265); *R. v. Williams* (ibid. 286); *R. v. Stanton* (1 Car. & K. 415).

Upon consideration, the judges held the conviction right.—*Law Times*, June 28.

SURGERY.

ON THE EMPLOYMENT OF OXYGEN GAS AS A MEANS OF RESUSCITATION IN ASPHYXIA.

BY DR. GEORGE WILSON, OF EDINBURGH.

THE author of this valuable communication does not undertake to discuss the subject at any length as a medical question, but quotes an opinion of Dr. Roget (from the *Cyclopædia of Practical Medicine*, art. Asphyxia), who says, "It has been proposed to inflate the lungs with oxygen gas instead of atmospheric air, and it is exceedingly probable that if a supply of this gas were immediately at hand, together with every facility in the way of apparatus for administering it, its efficacy in restoring animation would be superior to that of common air, but the cases must be exceedingly rare in which we can command these means; and whenever they are not in complete readiness, it would be very wrong to lose any time in waiting till we can obtain them." Acting upon this hint, Dr. Wilson recommends a means of generating the gas, and a form of apparatus which he conceives would be very available under such circumstances. He describes the greatly improved means lately introduced in the manner of preparing oxygen from chlorate of potass. This consists in mixing the chlorate with a tenth of its weight of black oxide of manganese, the black oxide of copper, or of certain other oxides, and applying heat as is done in the ordinary process with the unmixed chlorate. The chlorate by itself does not give off oxygen till it is fused, and although it gives it off with considerable rapidity at first, at a subsequent stage of the process it becomes thick and pasty from the formation of hyperchlorate of potass, and the temperature must be raised to nearly that of a red heat to secure the evolution of the remaining oxygen. During this last stage, moreover, the salt cakes, and conducts heat very badly; and from all these causes the evolution of oxygen is extremely fitful and irregular. The extraordinary effect of the simple addition of a little metallic oxide, in preventing all this,

and quickening the evolution of oxygen, can only be appreciated by those who have witnessed it. But it may give those who have not some conception of the difference it occasions, when it is mentioned that, with a small glass retort (heated by a single spirit lamp) containing the chlorate of potass mixed with a tenth part of its weight of oxide of manganese, it is easy to obtain 200 cubic inches of oxygen within four minutes of the first application of the flame. The gas begins to come off in a few seconds after the light is applied, and literally gushes in a full stream till the whole is evolved. On account, however, of various disadvantages attending the use of the black oxide of copper, or the native black oxide of manganese, the author recommends the substitution of common red or peroxide of iron, which is very easily procurable, and acts as well as the others. The oxide is to be pulverized, and triturated along with five times its weight of chlorate of potass, previously reduced to fine powder. The mixture should be preserved in tightly stoppered bottles, capped or tied over with leather. It is, of course, extremely important to prevent dust or any other organic combustible matter finding its way into the mixture of oxide and chlorate.

Two retorts of 12 oz. liquid capacity, heated by argand or rose burners, would suffice to obtain the gas at the rate of 300 or 400 cubic inches per minute, which would probably be sufficient. Should it be thought desirable to have it supplied in larger quantity, it would only be necessary to enlarge the containing vessel. The retorts, with a view to convenience and economy, might be constructed of sheet brass or iron. In every case it would be necessary to have at least two similar generators, so that when the contents of one were exhausted, the other might immediately be substituted for it, while it was being refilled.

The author then very judiciously proposes that, at our public hospitals, lying-in institutions, humane societies' rooms, police stations, and wherever else cases of asphyxia frequently come before the medical officers, the mixture of chlorate and metallic oxide should be kept ready for use. Along with these there should be provided glass or metallic retorts, with suitable arrangements for heating them, and one or more gas holders to receive the gas. The original outlay for gas holders and other apparatus might be about £5. The chlorate may be procured at a low price.

The author adds, that it would always be advisable to pass the gas through an intermediate vessel containing a little caustic potash in solution, both to detain any carbonic acid resulting from the accidental presence of combustible matter in the original mixture, and to arrest any of the latter

carried over mechanically in the current of oxygen. A Woulfe's bottle for this purpose would cause no great complication of the apparatus, and would be an effectual means of securing the purity of the gas. The author concludes by suggesting the use of oxygen in inflating the lungs of infants whose respiration is suspended at birth, and conceives that it would apply to every form of asphyxia occurring in hospital practice, including cases of poisoning by opium.

[REMARKS.—It must, nevertheless, be remembered that, however well this remedy may appear to promise in theory, its value has still to be tested and proved, and that too with great caution. We doubt altogether the propriety of throwing oxygen into the lungs of a new-born infant in any instance where ordinary means of restoring respiration could be employed. At all events, in these cases, the remedy should at first be used only in a diluted form, and with great care, in almost hopeless cases. We do not very clearly see how the safety of throwing pure oxygen into the lungs of an infant can be tested; for our own part, we should be greatly afraid to commence a series of experiments of the kind upon the human subject. We suspect, too, that the success of this remedy in the asphyxia of adults, will be found to be far more limited than the author anticipates; it may be of great use in cases of submersion, and of apparent death from the effects of irrespirable gases, and in cases of poisoning by opium, if applied early, just when the respiratory functions are beginning to fail; but only temporary relief can be expected from it in those numerous instances where the fault lies in irreparable lesions and fixed obstructions in the respiratory and vascular systems. Still, experiments upon young animals, and upon others in which asphyxia has been artificially produced in various ways, should immediately be commenced, and no hospital should be unprovided with an apparatus and materials of the kind recommended by the author, provided great caution be used in selecting proper cases for their employment. —ED. GAZ.]

APPLICATION OF PURE ARSENIC TO CANCERS, TO OBTAIN A RADICAL CURE.

BY M. ANGELO BARLIERI.

THE different arsenical preparations used in France, for the treatment of cancerous ulcers, contain only a very small quantity of the mineral, such as *la pâte de Rousseott, la poudre de Dupuytren, &c.* This dilution has been considered indispensable to prevent the pernicious effects which this deleterious substance might have if absorbed; and even these weak preparations are recommended never to be applied over a large surface at one time. The recommendation of M. Angelo Barlieri may therefore appear to savour of rashness. He proposes to apply

pure* arsenic over the ulceration, and he cites many cases in which this practice has been adopted, and a radical cure has resulted, without any of the deleterious properties of the arsenic being manifested in the system. He has thus succeeded in supra-orbital cancer, cancer of the nose, also of the temporal region, and in a case of a wound which had assumed a fungoid character after removal of the axillary glands (ganglions.) The following case, which completes this successful series, merits a more detailed report, and will also explain the mode of application generally adopted.

CASE.—A man, 41 years of age, consulted M. Angelo Barlieri for a cancer of the prepuce and glans penis. The tumor was of the size of the fist, hard, nodulated, ulcerated in parts, pouring out a foetid bloody discharge, and attended by the most acute pains. The disease dated two years previously. The inguinal glands were enlarged. Many surgeons had been consulted, and had recommended amputation as indispensable.

On July 13, 1814, M. Angelo Barlieri thus commenced his treatment. He first shaved (*rasa*) the surface of the tumor with a bistoury, thereby removing the irregular prominences which then presented themselves; then, after having ligatured two arteries, he covered the whole of the diseased parts with arsenic, keeping it in its place by a little lint smeared over with simple ointment, and lastly enveloped the whole in a bandage. The integuments of the penis, scrotum, and groin became swollen (an usual consequence of the treatment) but disappeared under the application of Goulard water. The febrile reaction was moderate, and lasted 48 hours.

The slough began to separate the 8th of August. On the 6th it had fallen off, leaving an ulcer equal in surface, red, and secreting healthy pus. The patient finding himself quite well returned home, when he exposed himself to fatigue and various errors of diet. The wound nevertheless cicatrised, and was so perfectly healed on the 22d of September, that the author presented the man for inspection to the subsection of surgery of the congress of Milan. — *Gazetta Medica di Milano; Gazette Med. de Paris, Mai 3.*

PHYSIOLOGY.

CASE OF ATTEMPTED SUICIDE BY STARVATION. BY DR. CASPER.

MANY cases are recorded of individuals who have attempted suicide by starvation, but those in which daily observations of the progress of the symptoms can be made are always of especial interest to the medical practitioner. In the following case the sensation of hunger entirely disappeared after

* It must be understood that by the word arsenic, the author means arsenious acid, or the white oxide.

the third or fourth day of abstinence; and it is singular that the individual first expressed a strong desire for milk, the nutritious aliment of all young mammalia. It is further worthy of notice, that the deprivation of food, as Lassaigue had already observed, made no difference in the properties of the urine, and it was especially remarked that the quantity of urea was not diminished. The urine was analysed by the celebrated chemist Mitscherlich.

C., æt. 36, was condemned to seven years' solitary confinement. On the 17th February, 1844, after he had been a year in prison, he took the resolution to destroy himself by starvation. He refused his breakfast, but swallowed a small quantity of food at dinner. On the morning of the 18th he had some soup, but after this he declined all kinds of food. On the 23d, after five days' complete abstinence, he was seen for the first time by Dr. Casper. He was lying upon a mattress, the cheeks sunk, his countenance depressed, the temperature of the skin natural, the tongue covered with a white mucus; the gums were pale, but there was no foetus in the breath, the respiration normal, the pulse eighty-eight, regular, soft, and full, the speech thick, the abdomen collapsed, although it contained air, slight buzzing sound in the ears, the sleep good: there had been no stools since the 18th, and very little urine had been passed. The man did not experience any sensation of hunger or thirst. 24th, in the same condition. The house-surgeon made him swallow a few drops of Hoffmann's liquor. 25th. The prisoner still refused to take any food, declaring that he made a vow to eat nothing more while he was in prison. He was pale, and had evidently become emaciated. He experienced a dazzling in the eyes, which prevented him from reading, as also a ringing in the ears. The tongue was dry, but red in the centre, and covered with a thick layer of liquid; the breath was fetid, the skin moist and warm; there had been no evacuations, and no urine had been passed for twenty-four hours; the intellectual faculties were undisturbed, (the seventh day of fasting).

The 26th. A small quantity of high-coloured urine was passed; great weakness and loss of voice; pulse 96; tongue more moist; in other respects the symptoms were unchanged. 27th. There was no sensation of hunger, but an intense desire in the patient to moisten his parched and burning mouth. For this purpose he used some cold water, but would not swallow it. Abdomen more collapsed; no desire for an evacuation; great weight in the head; the breath more foul. 28th. The pulse 76, and very small; diplopia in the morning; cramp in the stomach, relieved by pressure. On the

preceding evening he took about six ounces of sugared water. He pretended that he did not experience any sensation of hunger, but said he perceived a smell of milk. On the night of the 28th he became very hungry, and ate some dry bread, which he found on his bed; milk was given him at his own request, and afterwards soup. He gradually resumed his ordinary diet, and soon regained his usual good state of health.—*Gazette Médicale*, Mars 1845.

CAUSE OF THE FEVER OF THE NIGER.

SOME years ago, the late Professor Daniell inferred that the pestilential miasmata of the coast of Africa were owing to the evolution of a large quantity of sulphuretted hydrogen gas, from the decomposition of the sulphates contained in the waters in contact with organic matter aided by a high temperature. He found in examining the copper sheathing of the ships which had been placed on that station, that the metal was partially changed to sulphuret. He also detected sulphuretted hydrogen in the water procured from the African coast, which had been sent to him by government for analysis. The medical officers attached to the late Niger expedition, have, however, proved that the symptoms attending the fever are entirely different from those which accompany poisoning by sulphuretted hydrogen gas, and further they have not discovered sulphuretted hydrogen in the waters of any of the lagoons on the coast. In the water examined by Professor Daniell, it had, therefore, probably resulted from a decomposition which had taken place in it subsequently to its removal from Africa. We quote the following remarks from the last number of the *Edinburgh Medical and Surgical Journal*.

"The banks of the mouth of the Niger are from one foot and a half to two feet above the level of the river, and even this moderate elevation extends very little from the river, for all behind is flat and swampy. A short distance up the river, the banks are broken into lagoons and creeks, the edges of which are profusely covered with mangroves. Small bays even are formed by the sea running into them during the flowing tide, and these abound with crocodiles and multiplied races of reptiles, while the mangrove-roots are covered, as in all other places, with numerous shell-fish and various forms of mollusca. During low water a disagreeable odour was perceptible in some of the lagoons entered by Drs. McWilliam and Stanger, but the most delicate tests gave no evidence of the presence of sulphuretted hydrogen in any of the waters."

[Some of the most offensive effluvia resulting from the decomposition of animal and vegetable matter do not contain a trace of sulphuretted hydrogen gas.—*ED. GAZ.*]

PATHOLOGY.

ON THE ACTION OF SUGAR UPON THE
TEETH.

FROM researches made on this subject, M. Larrey has come to the following conclusions:—

1. Refined cane, or beet-root sugar, is prejudicial to the teeth more from its direct contact than from the evolution of gaseous matter during digestion.

2. If a tooth be allowed to macerate in a saturated solution of sugar, it is so decomposed as to acquire almost a gelatinous character, while the enamel becomes opaque and spongy, and crumbles down under the slightest pressure. Sugar ought not, therefore, to enter into the composition of tooth-powder.

3. The erosion of the teeth by this substance does not depend on an acid, for none is present in sugar: but on the affinity which this organic principle has to enter into combination with the calcareous base of the tooth.

4. If the enamel be less attacked than the osseous part of the tooth, the reason is that it contains fluoride of calcium, a body which resists chemical agency even more than the sulphate of lime.—*Gazetta Medica di Milano*; and *Heller's Archiv für Physiol. und Pathol. Chemie*, 1844.

[REMARKS.—That sugar easily combines with lime, and forms a compound out of which the lime may be obtained crystallized as carbonate, has been long known; but it is something new that it should thus exert a solvent power over the phosphate and carbonate of lime. M. Larrey's last conclusion does not appear to us to be sound: the enamel contains only traces of fluoride of calcium, while the phosphate of lime forms 78 per cent., and the rest is chiefly animal matter. A better reason will be found probably in its hardness and close texture. It would be interesting to know whether these chemical results are borne out by observations made among those who are in the habit of taking large quantities of molasses and saccharine substances.—ED. GAZ.]

ON SPERMATOOA IN THE FLUID OF
HYDROCELE.

IN two instances, spermatozoa were discovered by Lloyd in the fluid of hydrocele. In one drop he counted four of these animals, and some of them lived four hours. This observation has been confirmed by the researches of Childs and Velpau. I have often submitted the fluid of hydrocele to microscopical examination, but in no instance have I detected in it spermatozoa, although, from the observations of the authorities above mentioned, my attention had been particularly drawn to the subject.

I am therefore led to believe that the occasional appearance of these animalcules in cases of hydrocele, must be owing to an accidental puncture of the tunica vaginalis during the operation for evacuating the fluid. The spermatozoa, therefore, do not constitute a part of the serous liquid, but their presence must be ascribed to the accidental escape of a small quantity of the seminal secretion.—*Heller, Archiv. für Physiol. und Pathol. Chemie*, 1844.

[REMARKS.—In a late number* a communication on this subject was inserted from Mr. Adams, in which it was suggested, contrary to the received opinion, that the spermatozoa might be secreted from the spermatic artery. The observations of so accurate a microscopical pathologist as Heller, appear to be against this view. If our correspondent's opinion were correct, we might expect that the fluid of hydrocele would always contain these spermatozoa; but the above extract shows, on good authority, that this is not the case. The facts appear to justify the conclusion at which Heller has arrived.—ED. GAZ.]

ANEURISM OF THE ASCENDING AORTA,
OPENING INTO THE RIGHT VENTRICLE.

DR. PEACOCK was called to see a man, æt. 48, whom he found in a state of great prostration, the pulse being imperceptible at the wrist, and his extremities cold; he complained of constant vomiting, and pain in the feet and ankles; his face was sallow and puffy; and the abdomen swollen. With these symptoms he had been suddenly seized, while engaged in his occupation as a horse-keeper; he was removed to the Chester Infirmary, but, though appropriate treatment was had recourse to, he continued to sink, and died about eighteen hours after the commencement of his attack. No history of his previous state of health was obtained. He had continued his occupation regularly till his seizure, and was of very intemperate habits.

Upon examination after death the pericardium was found universally adherent to the heart by a thick layer of condensed cellular membrane. The heart was of very large size. Both ventricles were greatly dilated, and their muscular substance had undergone the fatty degeneration. This change, however, although considerable, was less marked in the left than in the right ventricle. The ascending aorta was the seat of a large aneurism, which commenced about a quarter of an inch above the attachment of the right and posterior semilunar valves. The inferior portion of this sac formed an egg-shaped swelling, projecting into the right auricle, immediately below the entrance of the vena cava descendens; and on the left side

of this projection, in the appendage of the auricle, there existed two apertures, by which the cavity of the aneurism communicated with that of the auricle. These apertures, each of which was of sufficient size readily to give passage to a large bougie, were situated immediately together, and were surrounded by a belt of small granular concretions of decolorized lymph. — *Lond. and Edin. Monthly Journal*.

ALCOHOLIC ODOUR OF THE FLUID IN THE VENTRICLES OF THE BRAIN.

DR. BRADLEY, of Illinois, was summoned before a coroner's inquest, held on the body of Samuel Page, as a medical witness. The deceased was found about two miles from the village, in his waggon, with his feet hanging over the footboard, his body resting upon a bag of grain, and his head upon the bottom of the waggon. He was totally insensible, and his breathing stertorous and difficult. He was taken to a neighbouring dwelling, where he died in about ten minutes. He had been drinking very freely for several days previous, but was not an habitual drunkard. He had left a grocery-store a short time previous to being found, partially intoxicated, without mittens or any other "extra over-clothes," though the weather was somewhat below the freezing point. On dissection, six hours after death, dark fluid blood poured forth from the sinuses of the brain to the amount of eight or ten ounces. The brain exhibited excessive vascular turgescence; in the corpora striata a small amount of sanguineous extravasation was detected, and in the lateral ventricles some serous effusion. Verdict—"Death from apoplexy, caused by intemperance."

The effused fluid found in the ventricles yielded strongly the alcoholic odours. This was so apparent, that it was readily recognised by every member of the jury. — *Illinois Med. and Surg. Journal*; and *American Journ. of Med. Sciences*, Oct. 1844.

THERAPEUTICS.

APOPLEXY PRODUCED BY COLD FOOT-BATHS.

A PLETHORIC female, about sixty years of age, was advised to try cold foot-baths for a rheumatic attack, from which she was suffering in her right leg. After the first two baths, she felt herself very comfortable, but when for the third time she put her feet into cold water, she became suddenly dizzy, and in a few minutes was seized with an attack of apoplexy. She fell down insensible, and became paralysed on the left side of her body. The face was red and swollen, the head hot, the eyes suffused, the pulse slow, full, and somewhat hard. Venesection

was performed, leeches and cold lotions were applied to the head, with mustard plasters to the nape of the neck and the lower extremities. Under this treatment, the patient soon recovered her consciousness, but there was still a partial paralysis of one side of the body, which slowly disappeared under medical treatment only after several weeks. — *Casper's Wochenschrift*, März 1845.

OPHTHALMOLOGY.

PUNCTURED WOUND OF THE EYE.

A HEALTHY boy, about eight years old, while running with a table-knife in his hand, stumbled and fell. The point of the knife, which was about half an inch wide, entered the upper eyelid, and penetrated into the lower fourth of the globe of the eye. Dr. Cramer saw the child a few minutes after the accident, when the mother showed him, on a sponge with which she had wiped away the blood, the crystalline lens. A portion of fluid escaped from the wound whenever the eye was moved. Dr. C. contented himself with a superficial examination, considering that any interference with the wound would probably lead to prolapsus of the iris, or to the loss of all the humours. As the after consequences of such an injury were likely to be severe, a strict antiphlogistic regimen was adopted; the wound in the eyelid was sewed up, and the patient was ordered to keep the recumbent position. In the course of time, the wound in the lid cicatrized well, while that in the ball of the eye closed, leaving a slight opacity in the lower segment of the cornea, and a red streak in the sclerotic, shewing the length and course of the stab. The eyeball, slightly collapsed, was perfectly clear; the iris was sound in its upper three-fourths, the form of the pupil being changed by the deficient portion below. The sight was entirely destroyed. — *Casper's Wochenschrift*, 1845.

ROYAL COLLEGE OF SURGEONS.

Gentlemen admitted Members.

FRIDAY, June 20. — J. S. Drury. — R. S. Thornbey. — F. Horsfall. — L. Llewellyn. — H. Young. — J. E. Palmer. — H. A. Oldfield.

MONDAY, June 23. — C. E. G. Lamotte. — W. Price. — C. Mulholland. — W. Ewing. — W. Bainbridge. — P. E. Downs. — W. T. Black. — D. M. Bride. — J. Orred. — J. Jones. — J. E. Hamilton.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

THURSDAY, June 19. — Wm. Henry Colborne, Chippenham, Wiltshire. — Henry William Laver, Essex. — Frederick Francis Kingdon, Barnstaple, North Devon. — Edward Cooke Odling, Lincoln. — Orlando Salathiel Winstanley.

THURSDAY, June 26. — Amos Jowett, Holds-worth, near Halifax, Yorkshire.

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURE,

At St. Bartholomew's Hospital,

By W. LAWRENCE, Esq. F.R.S. &c.

[Reported by MR. HOLMES COOTE.]

Purulent ophthalmia, continued. Catarrhal ophthalmia. Effects of lunar caustic on the conjunctiva.

CASE III.—*Gonorrhœal ophthalmia of the left eye; antiphlogistic treatment, with mild astringents; recovery.*

JOHN WEST, æt. 23, a person of slender frame and unhealthy appearance, contracted gonorrhœa, about the middle of March, 1842. A fortnight afterwards, April 2nd, the left eyelids were sore, stiff, and itching; they shortly became red and swollen. Inflammation soon spread to the ball of the eye, and a thick yellow discharge flowed from between the lids. He was not aware that any of the discharge from the urethra had come in contact with the eye, but thinks such an occurrence not improbable. He pursued his ordinary habits, without adopting any treatment, until April 12th, when, finding the eye daily getting worse, he became an out-patient of this hospital. Sixteen ounces of blood were taken from the arm: he was ordered pills containing calomel and colocynth every night, and a mixture containing sulphate of magnesia and tartrate of antimony three times a day. He continued this treatment to April 16th, with no improvement of the local malady, but with great reduction of strength. He was then received into the hospital.

April 17th.—Both lids of the left eye, more especially the upper, are considerably swollen, with general vascularity of the conjunctiva, and profuse puriform discharge. The ocular conjunctiva, of a bright red colour, forms a tumid ring, projecting irregularly over the circumference of the cornea. This chemotic swelling yields upon pressure, being apparently formed by effusion of serum, not of fibrine, into the submucous tissue. The cornea is quite clear. There is considerable pain in the eye, with headache; general uneasiness, with loss of strength, and great depression of spirits.

Finding him so feeble, and with a weak pulse, I ordered him a pint of porter daily, with broth diet.

Blister behind the left ear. The eyes to be frequently bathed with the solution of alum, three grains to the ounce. Solution of Argent. Nit. gr. ij. ad ℥j., to be introduced between the lids twice or thrice a day.

17th.—The patient is more comfortable and cheerful; the state of the eye unchanged.

18th.—The swelling of the lids, and the chemosis, are diminished; the pain in the eye is much relieved; he has less headache, but continues extremely feeble. Meat diet. Treatment continued.

19th.—Progressive improvement. The caustic solution gives no pain. To be continued, of double strength.

20th.—The first application of the stronger solution caused so much pain that it has not been repeated this morning. The pain continues, with marked increase of redness and chemosis: the headache and febrile symptoms are returned.

Hirudines viii. tempori sinistro.

21st.—The inflammatory symptoms are not abated.

Hirudines xii. temp. sinistro.

23d.—The swelling of the lids, the chemosis, the pain in the eye, and headache, are lessened.

The two-grain caustic solution to be used night and morning. Alum wash, meat diet, and a pint of porter daily.

25th.—The conjunctiva has lost its bright scarlet colour; it is of a duller red, showing diminution of the vascular excitement; the chemosis is nearly gone; the discharge considerably diminished.

May 3d.—Discharged. The eye had nearly resumed its natural appearance: there were merely a few tortuous vessels in the conjunctiva, and slight mucous discharge. The organ felt weak, but in other respects it was well, and vision was perfect.

6th.—He called to show us the eye, which was still somewhat irritable.

Emp. Lyttæ pone aurem.

11th.—He was again seen with the eye quite recovered.

CASE IV.—*Gonorrhœal ophthalmia; nitrate of silver applied to the conjunctiva: opacity of the cornea.*

John Jones, æt. 17, a shoemaker, of slender frame and irregular habits, but in good health, had been confined in the city Bridewell, and kept to hard labour for eleven weeks. He had never contracted any venereal complaint. On April 13th, gonorrhœal matter from the urethra of another prisoner was applied to his left eye. This fact, which was not discovered for a few days, was enveloped in some mystery, which neither prisoner chose to explain. He slept well that night, but on the following morning there was slight swelling of the left eyelids, with pain and itching.

15th.—He suffered more pain; the swelling of the lids was increased, and there was a thin discharge. He could not sleep at night.

The circumstance that gonorrhoeal matter from the urethra of another prisoner had been applied to the eye was first discovered this day.

Hirudines xviii. statim.

In the course of the afternoon he was removed to this hospital.

17th.—Both eyelids are much swollen, especially the superior, which overlaps and completely covers the lower; the conjunctiva is of a bright scarlet colour, and is raised from the sclerótica in the form of chemotic swelling, partially concealing from view the cornea, which, however, retains its transparency. There is profuse puriform discharge; great pain in the eye, extending over the forehead and temples; febrile disturbance; pulse 104, soft, and without power; tongue coated with a white fur.

Hirudines xx. statim; Hyd. Chlor. gr. ii.; Opii, gr. $\frac{1}{4}$ hâc nocte. Fotus papaverum.

18th.—Has slept somewhat better; pulse 104; tongue coated; bowels confined: no change in the condition of the eye.

Haust. Sennæ statim, et postea Haust.

Menth. Sulph. c. Magnes. Sulph. $\mathfrak{z}$ j. sextis horis.

The stick of nitrate of silver was passed over the prominent chemotic swelling of the conjunctiva. This application, though quickly done, was very painful at the time; subsequently it arrested the discharge, and lessened the pain for three or four hours. It was repeated towards night-time, and forty minims of laudanum were given afterwards.

19th.—Slept well; eye less painful; the tumefaction of the lids and the chemotic swelling considerably diminished; the discharge lessened in quantity.

Rep. Haust. Menth. Sulph. c. Mag. Sulph. Aluminis, gr. iv., Aquæ, $\mathfrak{z}$ j., pro lotio; Tinct. Opii, $\mathfrak{m}$ xxx. hora somni sumenda.

20th.—Has slept well, but complains of increased pain this morning. The lids are more swollen; the discharge is more purulent and profuse. The cornea is become opaque towards its central and lower portion for about two-thirds of its surface. The opacity, of a whitish colour, but not of uniform density, has a well defined margin, beyond which the part preserves its natural transparency. This change in the cornea, obviously effected by the escharotic, resembles that which we observe after the application of lime or mortar to the eye. Vision is now lost.

21st.—Has slept well without taking opium; the eye is less painful; the swelling of the lids, and the chemotic swelling are diminished; the discharge is not so purulent, and more spring in quantity. There is a small superficial ulcer in the centre of the opacity.

Broth diet.

22d.—The swelling of the lids still lessened; the inferior palpebra now exposed to view; pulse 112, and feeble; tongue clean.

Meat diet; a pint of porter daily.

23d.—The porter is discontinued, as it causes headache.

24th.—Has slept badly; the conjunctiva more inflamed; eye more painful.

Hirudines viij.

27th.—The pain is entirely gone; the swelling and chemosis have again subsided: he can see a little, though he cannot bear the light. A portion of the pupil is perceptible; cornea clearer.

Lot. Aluminis.

May 1st.—Haust. Quinæ disulphatis ter die. Vin. Opii, $\mathfrak{m}$ j. omni nocte instillandum.

9th.—It was now discovered that a broad and close adhesion of the lower eyelid to the globe had taken place near the external canthus (symblepharon). It did not interfere with the motions of the eye.

He left the hospital on the 22d, the conjunctiva having regained its natural colour, the corneal opacity being much diminished, and vision proportionably improved.

CASE V.—*Gonorrhœal Ophthalmia; extensive ulceration of the cornea: prolapus iridis.*

Robert Smith, æt. 21, a sailor, of stout make, with heavy inexpressive countenance, stated that he had suffered from venereal disease repeatedly; nine months ago he contracted syphilis, and six months after gonorrhœa, which was still un cured. Six days ago the right eye became painful, and there was a thick viscid discharge sticking the lids together. He could assign no reason for this state of his eye. Towards evening the pain and the discharge increased, and on the following morning the lids were much swollen, the pain constant and severe, and there was abundant puriform discharge. Since that day the pain has gradually subsided, but the palpebral swelling and the discharge have continued. He has taken a little aperient medicine, but has done nothing to the eye.

He was admitted into St. Bartholomew's Hospital, June 9, 1843. The right eyelids were much swollen, and of a dusky red. A

thick yellow discharge adhered to their edges, and covered the surface of the eye; the conjunctiva oculi was uniformly reddened, the tint being dull, and it was raised into a thick roll around the circumference of the cornea, which therefore appeared sunk in the front of the eye. The latter preserved its transparency in the upper half, but presented a dull nebulous opacity in the lower; the line of division between them being well defined. Vision was very much impaired, but there was little or no pain in the eye, and the trial of the organ causes no uneasiness. He slept well. Upon the mucous membrane of the lips, and particularly at the commissures and upon the fauces, there were superficial ulcerations of a syphilitic character. He had slight gonorrhœa. Cicatrices of former ulcerations were seen upon the lining of the prepuce.

Pil. Hyd. gr. v. ter die. A solution of nitrate of silver, gr. x. ad ʒj. to be applied with a camel's-hair brush to the chemosis.

The application, made in the evening, caused severe smarting pain, which however subsided after an hour, and he slept well.

June 10th.—The opacity of the cornea is of a deeper tint; state of the conjunctiva unaltered; lids still swollen.

The caustic solution to be repeated.

Subsequently a strip of the chemotic conjunctiva, overlapping the opaque portion of the cornea, was raised by a pair of forceps, and snipped off with scissors. The portion removed was firm, as if fibrine had been effused into the sub-mucous tissues.

Omitte Sol. Argent. Nitrat. Cont. Pilul. Hyd. gr. v. ter die ut antea.

12th.—The chemotic swelling is increased, and the membrane is of a bright red colour; the upper half of the cornea has lost its transparency, and about the centre the conjunctiva seems to be abraded; purulent discharge very abundant. The stick of nitrate of silver was passed over the tumid conjunctiva.

Tinct. Opii, gr. ʒxl. statim.

Severe pain followed the application, and continued till evening: about 8 p.m. it subsided. It was then found that the cornea had given way at its lower and inner part, and that the iris was protruding, forming a reddish brown projection, with an irregular puckered surface. The chemosis and purulent discharge continue.

15th.—Has no pain; the conjunctiva, still red, is somewhat less swollen; the cornea can be more clearly seen; the extent of the slough corresponds with the original opacity of the lower half, and the space is accu-

rately filled by the protruded iris. He left the hospital a few days afterwards.

July 14th.—He was again seen at the hospital. The regular shape of the eye is restored, but it is not so prominent as the sound organ, and the globe has lost its elasticity and firmness; it has a soft, yielding feel, indicating the beginning of atrophy; the protrusion of the iris has entirely subsided; a thin pellicle fills up the former aperture, to which and to the cornea the iris is adherent. He can discern light from darkness with the affected eye. In other respects vision is lost.

I have now placed before you the particulars of five cases of purulent ophthalmia, in three of which the disease was clearly produced by the application of a morbid secretion to the affected membrane. The patient at present in the hospital (Case I.) while suffering from gonorrhœa, applied his own urine as a lotion to the eye. The youth from Bridewell (Case IV.) admitted that gonorrhœal matter from the urethra of a fellow prisoner had been introduced between the lids; and the subject of Case II., whilst engaged in syringing the eyes of a child suffering from acute purulent ophthalmia, the nature and cause of which were doubtful, felt some of the fluid pass into his own eye. The contact of such morbid secretions, then, whether proceeding from the mucous membrane of the same individual, or from the urethra or conjunctiva of another person, is sufficient to produce this malady. It is not unlikely that the disease had the same origin in the two other instances (Cases III. and V.) Both patients laboured under gonorrhœa at the time that the purulent ophthalmia occurred; they were at the age, and belonged to the rank in life, in which we see carelessness and indifference to personal cleanliness; and the disease in both, as in the three other instances, was confined to one eye.

The character of the affection, in point of severity, does not depend on its being produced in this direct manner; for the inflammation was comparatively mild in Case I.; severe, so as to endanger the eye, in Cases II. and IV. In the milder case, the morbid secretion was from the patient's own person; in the more severe cases, from that of another. I believe that this difference may have been accidental, having seen severe gonorrhœal ophthalmia induced by the same cause as in Case I.

In the milder instances purulent ophthalmia yields readily to the ordinary antiphlogistic treatment; but in other cases we have to encounter danger and difficulty. Case II. was of severe character; one of those, in which, even with every care, and the advantage of early attention, the organ is endan-

gered, and the patient may be considered fortunate if the eye escapes uninjured.

The chief object of treatment is to prevent the extension of disease from its original seat in the palpebral and sclerotic conjunctiva to the cornea. So long as that important structure retains its natural transparency, the eye is safe, and a favourable termination may be reasonably expected. The first question is, whether this particular affection can be controlled by the usual antiphlogistic treatment, and how far such means, more particularly bleeding, may be safely carried. The inflammation of the conjunctiva gave way quickly to moderate depletion, with other corresponding means, in Case I.; the result being unequivocal, as local stimuli and astringents were not used until the inflammation had been removed. The favourable influence of a single venesection is apparent in Case III.; the violence of the disease was checked by the depletion in Cases II. and IV.; but it may be doubted whether an equally favourable result would have been obtained from simple antiphlogistic measures in the former instance, as the local symptoms were still unrelieved, after the production of nearly complete syncope by cupping on the temple.

In an early stage of the affection, particularly in a patient of good constitution and good health, you may bleed freely, generally or locally, or in both ways, and administer purgatives, with antimony. Very commonly you will derive from these measures the same beneficial effects as in other inflammations. You will, at all events, lessen the violence of the excitement, so that you may proceed to employ astringents and escharotics, if you should think them advisable, with more effect, and less danger.

I do not advise you to resort to bleeding in all cases, nor to pursue and repeat it under all circumstances. You must look to the state of constitutional power, as well as to the local symptoms. When strength is much reduced, disease becomes obstinate, and runs on from want of restorative energy; it may even assume an aggravated form from this cause. In public charitable institutions we often have to treat persons with constitutions not originally good, and enfeebled by various depressing influences. Active treatment incautiously pursued will bring them into a state of dangerous depression, sometimes without arresting the local malady, the symptoms of which still persisting, may seem to require a perseverance in the antiphlogistic treatment. The doctrine of inflammation, and of the means necessary to check and remove it, forms so large a portion of pathology and therapeutics, and the very nomenclature of disease is so much founded on this doctrine, that we run great risk of depending too much on

one kind of treatment. This tendency, encouraged, perhaps, by systematic lectures and books, will be counteracted by careful clinical study, with the mind divested as much as possible of what has been learned from lectures and authors. In Case III., the patient, at his admission into the hospital, was extremely enfeebled by loss of blood, and by profuse purging continued for three or four days, the inflammatory symptoms in the eye being unabated. The state of the organ, and that of the constitution, presented opposite indications. Rest in the hospital, with diet of meat and porter, not only improved strength, but had a beneficial influence on the local complaint, which would certainly have been made worse by loss of blood, or any other depressing measures.

Under circumstances of doubt, we may derive assistance from attending to particular symptoms. A bright scarlet colour denotes active vascular excitement; a paler colour, especially with anything of livid hue, shows that inflammation is subsiding. Firmness of the chemosis depends on effusion of fibrine, and acute inflammation; softness of the swelling shows that serum only is poured out, and that the local action is of feebler character.

Confinement to bed is not necessary in purulent ophthalmia, and the recumbent is less favourable than the erect position of the trunk, as the latter impedes the flow of blood to the head, and facilitates its return. The patient in Case II. found himself much easier in the erect attitude.

Excision of the chemosed conjunctiva has been strongly recommended by Scarpa and others. To accomplish this effectually must be difficult in almost all instances, in many impracticable. I speak of the severe cases in which the eye is in danger, the proceeding in question being applicable to those only. The great swelling of the lids, particularly the upper, which overlaps the lower, their state of tension from the general swelling of the conjunctiva, the painful condition of the organ, which will, in some cases, hardly bear the slightest touch, are the obstacles to that complete exposure of the globe which is necessary for the excision. In Case II. the vessels of the lids and globe were emptied by faintness, which, at the same time, allowed free exposure of the eye, so that there was no difficulty in cutting away the chemosis around the entire circumference of the cornea. The success was complete, in immediate relief of pain, and ultimate recovery; no unpleasant symptom remained after the adoption of this decisive measure. Its effect confirmed what had been previously observed in this case; namely, that the severe pain in the eye proceeded from the pressure of the swollen lids on the che-

mosed conjunctiva, the effect being probably propagated to the globe itself. This will alter our estimate of that symptom, which has been usually considered to indicate extension of disease from the conjunctiva to the globe. The beneficial effect of the excision may be accounted for, either by its cutting off the continuity of the inflamed membrane with the mucous covering of the cornea, and thus preventing the extension of disease in that quarter, or by its putting an end to the mutual pressure and tension of the inflamed and swollen eyelids and conjunctiva oculi—a state analogous to that of the inflamed glans and prepuce. The late Mr. Tyrrell reprobated the practice of excising the conjunctiva in a circular direction, believing that the cornea derives its vessels from that membrane, and that if these were cut across, interrupted supply of blood and sloughing might be expected. He recommended incisions through the chemosis with a cataract-knife, entering the point at the edge of the cornea, and keeping the back towards the sclerotica, from four to ten in number, and radiating from the cornea as from a centre. To make these incisions would be equally difficult, if not more so, than the circular excision, and they are not calculated to afford the same kind of relief. Mr. Tyrrell's recommendation of radiated incisions through the chemosed conjunctiva was founded on views that he entertained of the corneal circulation, and of the mode in which sloughing of that texture occurs in some cases of purulent ophthalmia. The correctness of these views is not generally admitted. I have made these incisions in some cases without any useful result, and I understand that the practice is no longer followed at the London Ophthalmic Hospital, where it was first introduced.

In Case II. a symptom occurred which I had not met with before, and of which I do not remember to have seen any notice; namely, temporary but complete loss of vision, the cornea being clean. The disease was obviously confined to the conjunctiva. I was certain that the inner membranes of the eye could not be affected; I concluded, therefore, that the amaurosis was functional only, and that it would pass away. I therefore positively assured the patient—speaking with rather more confidence than I absolutely felt at the time—that his sight would return; and the event justified the prediction.

We come next to the important subject of local applications, amongst which the nitrate of silver holds the most prominent place. It is a matter of consequence to determine whether such applications are either advisable or safe; at what period of the disease they should be used, and in what form and strength. There are three modes of employing the nitrate of silver:—

1st, In solution—the strength varying from two to ten or even twenty grains to the ounce of water.

2dly, In substance.

3dly, In the form of ointment.

In all acute inflammations of the conjunctiva, whether catarrhal or purulent, the great source of danger is the extension of disease to the cornea. Hence, in the application of escharotics, especially if they be strong, it is an important object to limit their action to the diseased surface, and thus prevent them from injuring the cornea, which is supposed to be sound. When the vascular excitement has been checked by suitable means, the two-grain solution of nitrate of silver may be employed with safety. If it does not do good, it cannot do much harm. The same remark is applicable to its use in an early stage, with the view of arresting mischief at its commencement. I should never trust to it alone if the attack were of serious character. In Case II. the first application seemed to relieve; the second was injurious. In Case I. the four-grain solution, although not employed until vascular excitement had nearly disappeared, brought on return of inflammation. Sometimes it causes no sensation in the eye, and its efficacy may then be doubted. This happened in Case III. when the strength of the solution was doubled: it now caused pain and renewed vascular excitement, which required further loss of blood. We have frequently witnessed similar results from the four and even the two-grain solution, in cases treated in this hospital, although the remedy has not been employed until the inflammation had been decidedly checked by other measures. Such being the effects of the application in its comparatively milder form, I consider its employment in stronger solutions altogether inadmissible. Such a solution was tried in Case V., certainly without benefit. As an astringent lotion, I think the solution of alum preferable to that of the nitrate of silver in purulent ophthalmia; it has the great recommendation of being a safe remedy.

M. Ricord, surgeon to the Venereal Hospital at Paris, who has great experience in the treatment of gonorrhoeal ophthalmia, uses the nitrate of silver in substance in all cases, as he alleges, with invariable success. He passes the stick of caustic effectually over the entire surface of the palpebral and ocular conjunctiva. I have tried this plan twice. Case IV. was one of the instances, the application being made by Mr. Currey, the house-surgeon, who had seen it frequently employed by M. Ricord. The stick of nitrate of silver was passed over the chemosed conjunctiva, and over the lining of the lids. It caused acute pain, but of short duration, followed by marked relief, with diminution

of swelling and discharge; but it left behind two injurious effects, and I do not see how they can be avoided. One of these was the cauterization of the cornea, a considerable portion of the structure being rendered densely opaque, very much in the same way as it suffers from the application of lime. Thus the remedy may produce one of the evils which it is the object of our treatment to ward off. The escharotic action was not deep in this case, and the opacity had lessened considerably before the patient left the hospital. From the application in Case V., we can draw no clear inference. When the chemosed conjunctiva overlaps the cornea, and the lids are so swollen as to be separated with difficulty, being also spasmodically closed as soon as the caustic comes in contact with the eye, it must be very difficult, if not impossible, to limit its action so as to ensure the safety of the cornea.

Another serious consequence in Case IV. was excoriation and ulceration of the opposed mucous surfaces, and subsequent accretion of the lower lid to the globe (symblepharon). No injurious effect was observed in this instance; but a similar adhesion of the upper lid would cause, not only deformity but more or less considerable impediment to vision, if not its entire loss. The application of the solid nitrate to the palpebral conjunctiva is attended with the risk of causing symblepharon, without any corresponding advantage. If this treatment should be tried at all, it should be confined to the chemosis, and an essential condition would be that the action should not extend to the cornea.

When the remedy is used in the form of ointment, ten grains being incorporated with a drachm of spermaceti serate, and a portion introduced between the lids, which are gently rubbed so as to diffuse it over the mucous surfaces, the action must be similar to that of the substance, except that the influence is more prolonged. Here no attempt is made to exempt the cornea from the effect of the escharotic. I have never employed this plan, which seems to me altogether objectionable.

In determining on the employment of lunar caustic in inflammation of the eye, you must bear in mind that the question is not like that of using an ordinary lotion, which can do neither much good nor harm. A single application will often excite active inflammation; I saw severe ophthalmia brought on by a small particle flying into the eye as a person was scraping a stick of the caustic to a point. If the use of the nitrate of silver in the ten-grain ointment, or in strong solutions, be repeated and continued, it is capable of exciting a peculiar inflammation of the most obstinate kind, attended with change of structure in the membrane, and leading to other alterations

injurious, or even fatal to vision. This kind of effect is so peculiar, that it almost deserves to be named from its exciting cause lunar caustic ophthalmia. The conjunctiva becomes thickened and indurated; its papillæ undergo a kind of hypertrophy, and project on the surface of the membrane, which thus loses its smoothness and polish, becoming granulated. The secretion is augmented and altered in quality. The granulations are most numerous on the reflexion of the membrane from the lids to the globe, and on the concavity of the upper lid. The friction of this rough surface on the cornea enlarges its vessels, so that they admit red blood, and tortuous vessels of considerable size are sometimes seen; it causes interstitial deposition and opacity, with a general loosening and thickening of texture, so that the mucous layer becomes assimilated to the conjunctiva scleroticæ. Deeper opacity and ulceration of the cornea are sometimes produced. The inflammation may be seen in a more or less active state. In the former, the membrane is bright red, and produces a viscid puriform discharge, which agglutinates the lids. There is a gritty feel in the eye, with pain from the friction of the rough lining of the lids, and increased suffering on exposure to light. Hence, the eye is kept closed, or only opened momentarily, and the patient is to all intents and purposes blind so long as that state lasts, which it may do for months. In the chronic state, the vascular congestion is less active, and the membrane paler; the lids generally adhere in the morning; the eye is weak, and will not bear exertion; and vision is imperfect to a greater or less extent, from loss of transparency in the cornea. The latter change is sometimes partial, the upper two thirds being opaque and vascular, while the lower third is clear. The conjunctival lining of the lower lid, although thickened, is hardly rough, while that of the upper may be granulated throughout. The mischief may not be confined to one eye: the opposite organ sometimes becomes affected, and suffers in the same way as that first diseased. When both eyes are involved the patient is in a truly deplorable condition. He is blind for the time, and fears, from the obstinate nature of the malady, that sight will not be recovered; the spirits are depressed; a kind of despondency is induced, with fearful depression of the system. You will perhaps understand the subject better if you hear the particulars of two or three cases.

CASE.—Charles Pendrill, æt. 47, not of strong constitution, but enjoying good health, was servant in the family of a gentleman residing a few miles from London. In executing his duty of attending to the front gate, he had to cross a court-yard, and in leaving his bed to do this at an early hour

in the cold spring weather, he felt himself chilled, and thought that he had taken cold. The left eyelids were a little swelled, and sore, with a gritty feeling. The eye was unaffected, neither bloodshot nor painful. He resorted, as it would seem rather unnecessarily, to a public institution, where he was cupped on the temple, and had an application made to the eye. On his return home he took a powder, which caused violent sickness. He attended the institution three or four times a week; hot drops, caustic, or blue-stone, being employed on each occasion, with the effect of keeping up almost constant severe pain. The right eye became gradually affected, and in little more than a month he was rendered nearly incapable of performing any part of his duty. He experienced intolerance of light and severe pain, which was only relieved by laudanum. He had continued aching of the eyes and through the head, with a sensation as if the eyes would come out. On one occasion, towards the conclusion of his attendance, his suffering from the application was intolerable; he rolled on the ground in agony, and could not leave the place for an hour. He was led to this hospital in August, 1841, unable to find his way, or to see persons. The palpebral linings on both sides were thickened, red, and rough with granulations; both cornea being so vascular and nebulous as to prevent all useful vision. Stimulating applications had been discontinued for some time, and the eyes were no longer painful. The patient was thin, pale, and feeble, much distressed in mind from having lost his sight, and being rendered incapable of those exertions on which he had depended for the support of himself and wife. The treatment consisted in tonic medicine, with good diet and porter. Soothing means were employed locally in the first instance, and subsequently mild astringents, particularly solution of alum. He remained in the hospital many weeks, becoming much recruited in strength; the eyes were also considerably improved, so that he had tolerable vision for ordinary purposes, and short periods of occupation. Being unfit for his former, or indeed any other employment, and his wife also falling ill, his means were soon exhausted, and after struggling for some time with poverty and distress, he was again admitted here on account of general debility, the eyes remaining tolerably well. He was extremely pale and feeble, with colourless lips; his condition would have been best described as that of *anæmia*. He rallied for a time under nourishing diet with porter, wine, and steel; but the weakness returned, and he slowly sank, dying in a state of complete exhaustion.

CASE.—A middle-aged healthy female met with a slight accident to the eye, and felt occasionally a little uneasiness during

the following year. Although there was no inflammation, nor diminution of vision, she was under some anxiety in consequence of a brother having lost his sight; and she took the opportunity of calling at a public institution, as she was passing, to ask an opinion. A drop was introduced into the eye, giving pain which lasted ten minutes, and then went off. She returned at the end of a week, on a Wednesday, when the application was repeated, causing severe pain and watering, which lasted all day. On Friday the eye was so much inflamed as to require loss of blood by cupping; the local application was repeated with increase of pain. On Saturday a dry substance was applied, and caused still greater suffering. On Monday the eye was stated to be in great danger: calomel and opium were administered. The left eye now began to be affected. She continued her attendance for five or six weeks, always having something applied to both eyes, which caused great suffering. Each of the two last applications excited severe pain, which continued forty-eight hours. At this time she had become blind; the eyelids and face were swelled and discoloured, and the former could hardly be opened: there was great flow of tears. She now went to another institution, where she was cupped twice on the back, and had blisters and sinapisms. In the course of three months she was somewhat improved; but she became impatient, and placed herself under the care of a practitioner, who repeated the cupping and leeches, used blue-stone to the lids three times, and dropped in *vinum opii*. She then came under my care in this hospital, with thickening and granulation of the lids; vascularity and opacity of the cornea fully developed in both eyes. The disease was in an active state, with so much uneasiness on motion and exposure, that the lids were kept closed, and she could not open them even for the purpose of feeding herself. Excitement was lessened by regulation of diet, moderate local bleeding, cooling lotions, and counter-irritation; scarification of the lids, and excision of the more prominent granulations, causing free bleeding, were then employed repeatedly, with the solution of alum as a lotion, and the citrine ointment to the ciliary margins at bed-time. After many weeks considerable improvement was effected. The intolerance of light was removed, the lids, no longer swelled, could be freely opened. The palpebral linings were smoother, and the cornea considerably cleared. The course of improvement was, however, suspended, and, after some successive changes for better and worse, the patient became tired, and left the hospital. I have heard nothing of her since.

CASE.—About the same time that the

last mentioned patients were in the hospital, I was consulted by a gentleman labouring under the same affection in an aggravated form. The sight of his left eye had been long defective, and he began to see floating objects (*muscæ volitantes*) before the right; the sight in other respects being good. He felt anxious on the subject, and consulted a surgeon, both eyes being free from inflammation, which, indeed, he had never experienced. After a short time a black ointment was applied to the left eye, and repeated seven times, causing great pain, which lasted in some instances for hours; redness, which had not existed previously; watering and uneasiness on exposure to light. In about three weeks violent inflammation was established, requiring cupping, leeching, blistering, and other means; and the right eye began to be affected. All this had occurred a year and a half previously, and the patient had lost the use of his eyes entirely since that time. The palpebral conjunctiva and the angle of reflection, in both eyes, were thickened, villous, granular, and bright red; the corneæ vascular and hazy throughout, several large vessels, and a network of smaller, being visible in this structure on each side. The lids were swollen, and habitually closed, from intolerance of light: he could not see when they were opened, and was unable to find his way even in the house. There was abundant muco-purulent discharge. Leeches, friction of the emetic tartar ointment, alterative and aperient medicine, had been employed for some weeks without material advantage. This gentleman was in a wretched state of mind; incapable of useful occupation or amusement, and quite uncertain as to the prospect of recovery, he was constantly dwelling on his misfortune. I could not see much chance of material improvement, except under judicious treatment for a long course of time. It appeared to me that much of the mischief would be irreparable.

The affection we are now considering is not mere inflammation—not simply vascular disturbance; there is change of structure in the conjunctiva, thickening, induration, and roughening of the surface, by the prominences called granulations. To restore the membrane to its natural condition is perhaps not practicable; it is difficult even to improve it so far as to prevent continued irritation of the cornea. It may be rendered tolerably smooth; but it remains thickened and hardened, and presents an opaque white appearance, like that of a cicatrix, where it had been previously granulated. Moderate local depletion, with cold or tepid applications, is advisable when an active state of vascular disturbance is indicated by bright redness of the conjunctiva, with pain, intolerance of light, and discharge. Under other

circumstances, scarification of the diseased membrane, excision of the more prominent granulations with scissors, and astringent applications, are proper. Of the latter, solution of alum, the liquor aluminis compositus of the London Pharmacopœia, which will require dilution, especially at first, the undiluted liquor plumbi diacetatis, and the weaker solutions of lunar caustic, are the best. The sulphate of copper may sometimes be cautiously used in substance. If any of these applications bring on a relapse of inflammation, they must be discontinued until the disturbance is removed. The citrine, or red precipitate ointment, should be applied to the edges of the lids. Counter-irritation, by friction of the tartar emetic ointment on the back of the neck, is useful.

Although the lunar caustic, when injudiciously applied, is capable of producing the serious mischief now described, it is not only a safe but valuable remedy under proper restrictions. The two-grain solution dropped into the eye two or three times in the twenty-four hours, will cut short catarrhal and even the milder forms of purulent ophthalmia.

CASE.—James Bond, ætat. 23, was admitted into the hospital on May 30, 1845, with catarrhal inflammation, principally affecting the eyelids. Fourteen years ago he had measles. The eyes were then inflamed, and have continued weak ever since. On the 27th he was exposed for a considerable time to a cold wind and damp atmosphere; the right eyelids swelled, and became painful. The pain and swelling had increased on the following day, and there was a thick discharge. Two leeches were applied on the lower lid. At the time of admission both lids were much swollen, with redness and induration at the internal angle. The ciliary margins and cilia were covered and concealed by a thick yellow viscid discharge, which it was necessary to remove by tepid ablution before the eye could be examined. The appearance of the eye, combined with the age of the patient, immediately suggested the notion of gonorrhœal ophthalmia, which fortunately turned out not to be the case. The palpebral conjunctiva was bright red, and swollen; that of the sclerótica was also reddened, but principally at the circumference of the globe. The cornea was clear, and the sight perfect. There was considerable pain. A dose of calomel and jalap was immediately administered, and a solution of argent. nitr. (gr. ij. ad ʒj) was dropped into the eye. It caused increased pain for twenty minutes, and then the eye became quite easy. He slept well; the eye was free from discharge in the morning, and opened easily. The solution was again dropped in, and he was ordered to take, three times a day, a

draught containing magnes. sulph. 5j., with antim. potassio-tart. gr. $\frac{1}{4}$.

June 3.—The drops have been repeated twice daily, and he is discharged perfectly well.

CASE.—Michael Butler, ætat. 8, was admitted into the hospital April 27, 1843. A fortnight previously, his mother observed, on his return from school, one wet and cold day, that the eyes were inflamed, being, she said, as red as blood, and watering. She put him to bed and kept him there, merely washing the eyes every morning with cold water. On his admission, the mucous lining of the eyelids was bright red, and swollen; the ciliary margins reddened. The ocular conjunctiva was red throughout. There was a yellowish-white discharge on the edges of the lids and at the angles, and the eyes were watery. The two-grain solution of the lunar caustic was dropped into the eye on the 28th and two following days, and he was discharged quite well on May 3.

Original Communications.

ON THE

LIQUEFACTION AND SOLIDIFICATION OF BODIES GENERALLY EXISTING AS GASES*.

By MICHAEL FARADAY, Esq. D.C.L.
F.R.S. &c. &c.

THE experiments formerly made on the liquefaction of gases†, and the results which from time to time have been added to this branch of knowledge, especially by M. Thilorier‡, have left a constant desire on my mind to renew the investigation. This, with considerations arising out of the apparent simplicity and unity of the molecular constitution of all bodies when in the gaseous or vaporous state, which may be expected, according to the indications given by the experiments of M. Cagniard de la Tour, to pass by some simple law into their liquid state,

* A very imperfect abstract of these important researches of Professor Faraday has appeared in some of the English journals. This abstract was made from a translation of a short letter on the subject to M. Dumas, inserted in the *Ann. de Chimie et de Physique*, Janvier, 1845. Through the kindness of Professor Faraday, we are now enabled to give a full account of his experiments as they have been lately published in the Transactions of the Royal Society.—ED. GAZ.

† Philosophical Transactions, 1823, pp. 160, 189.

‡ Annales de Chimie, 1835, lx. 427, 432.

and also the hope of seeing nitrogen, oxygen and hydrogen, either as liquid or solid bodies, and the latter probably as a metal, have lately induced me to make many experiments on the subject; and though my success has not been equal to my desire, still I hope some of the results obtained, and the means of obtaining them, may have an interest for the Royal Society; more especially as the application of the latter may be carried much further than I as yet have had opportunity of applying them. My object, like that of some others, was to subject the gases to considerable pressure with considerable depression of temperature. To obtain the pressure, I used mechanical force, applied by two air-pumps fixed to a table. The first pump had a piston of an inch in diameter, and the second a piston of only half an inch in diameter; and these were so associated by a connecting pipe, that the first pump forced the gas into and through the valves of the second, and then the second could be employed to throw forward this gas, already condensed to ten, fifteen, or twenty atmospheres, into its final recipient at a much higher pressure.

The gases to be experimented with were either prepared and retained in gas holders or gas jars, or else, when the pumps were dispensed with, were evolved in strong glass vessels, and sent under pressure into the condensing tubes. When the gases were over water, or likely to contain water, they passed, in their way from the air-holder to the pump, through a coil of thin glass tube retained in a vessel filled with a good mixture of ice and salt, and therefore at the temperature of 0° Fahr.; the water that was condensed here was all deposited in the first two inches of the coil.

The condensing tubes were of green bottle glass, being from $\frac{1}{16}$ th to $\frac{1}{4}$ th of an inch external diameter, and from $\frac{1}{16}$ th to $\frac{1}{8}$ th of an inch in thickness. They were chiefly of two kinds, about eleven and nine inches in length; the one, when horizontal, having a curve downward near one end to dip into a cold bath, and the other, being in form like an inverted siphon, could have the bend cooled also in the same manner when necessary. Into the straight part of the horizontal tube, and the longest leg of the siphon tube, pressure gauges were introduced when required.

Caps, stop-cocks, and connecting pieces, were employed to attach the glass tubes to the pumps, and these, being of brass, were of the usual character of those employed for operations with gas, except that they were small and carefully made. The caps were of such size that the ends of the glass tubes entered freely into them, and had rings or a female screw worm cut in the interior, against which the cement was to adhere. The ends of the glass tubes were roughened by a file, and when a cap was to be fastened on, both it and the end of the tube were made so warm that the cement*, when applied, was thoroughly melted in contact with these parts, before the tube and cap were brought together and finally adjusted to each other. These junctions bore a pressure of thirty, forty, and fifty atmospheres, with only one failure, in above one hundred instances; and that produced no complete separation of parts, but simply a small leak.

The caps, stop-cocks, and connecting pieces were screwed one into the other, having one common screw thread, so as to be combined in any necessary manner. There were also screw plugs, some solid with a male screw to close the openings or ends of caps, &c., others

with a female screw to cover and close the ends of stop-cocks. All these screw joints were made tight by leaden washers; and by having these of different thickness, equal to from $\frac{1}{4}$ th to $\frac{1}{2}$ th of the distance between one turn of the screw thread and the next, it was easy at once to select the washer which should allow a sufficient compression in screwing up to make all airtight, and also bring every part of the apparatus into its right position.

I have often put a pressure of fifty atmospheres into these tubes, and have had no accident or failure (except the one mentioned). With the assistance of Mr. Addams I have tried their strength by a hydrostatic press, and obtained the following results:—A tube having an external diameter of 0.24 of an inch and a thickness of 0.0175 of an inch, burst with a pressure of sixty-seven atmospheres, reckoning one atmosphere as 15lb. on the square inch. A tube which had been used, of the shape of fig. 1, its external diameter being 0.225 of an inch, and its thickness about 0.03 of an inch, sustaining a pressure of 118 atmospheres without breaking, or any failure of the caps or cement, and was then removed for further use.

Fig. 1.



Fig. 2.



A tube such as I have employed for generating gases under pressure, having an external diameter of 0.6 of an inch, and a thickness of 0.035 of an inch, burst at twenty-five atmospheres.

Having these data, it was easy to select tubes abundantly sufficient in

strength to sustain any force which was likely to be exerted within them in any given experiment.

The gauge used to estimate the degree of pressure to which the gas within the condensing tube was subjected was of the same kind as those formerly described*, being a small tube of glass closed at one end with a

* Five parts of resin, one part of yellow bees'-wax, and one part of red ochre, by weight, melted together.

* Philosophical Transactions, 1823, p. 192.

cylinder of mercury moving in it. So the expression of ten or twenty atmospheres, means a force which is able to compress a given portion of air into $\frac{1}{10}$ th or $\frac{1}{20}$ th of its bulk at the pressure of one atmosphere of thirty inches of mercury. These gauges had their graduation marked on them with a black varnish, and also with Indian ink:—there are several of the gases which, when condensed, cause the varnish to liquefy, but then the Indian ink stood. For further precaution, an exact copy of the gauge was taken on paper, to be applied on the outside of the condensing tube. In most cases, when the experiment was over, the pressure was removed from the interior of the apparatus, to ascertain whether the mercury in the gauge would return back to its first or starting-place.

For the application of cold to these tubes a bath of Thilorier's mixture of solid carbonic acid and ether was used. An earthenware dish of the capacity of four cubic inches or more was fitted into a similar dish somewhat larger, with three or four folds of dry flannel intervening, and then the bath mixture was made in the inner dish. Such a bath will easily continue for twenty or thirty minutes, retaining solid carbonic acid the whole time; and the glass tubes used would sustain sudden immersion in it without breaking.

But as my hopes of any success beyond that heretofore obtained depended more upon depression of temperature than on the pressure which I could employ in these tubes, I endeavoured to obtain a still greater degree of cold. There are, in fact, some results producible by cold which no pressure may be able to effect. Thus, solidification has not as yet been conferred on a fluid by any degree of pressure. Again, that beautiful condition which Cagniard de la Tour has made known, and which comes on with liquids at a certain heat, may have its point of temperature for some of the bodies to be experimented with, as oxygen, hydrogen, nitrogen, &c., below that belonging to the bath of carbonic acid and ether; and, in that case, no pressure which any apparatus could bear would be able to bring them into the liquid or solid state.

To procure this lower degree of cold, the bath of carbonic acid and ether

was put into an air-pump, and the air and gaseous carbonic acid rapidly removed. In this way the temperature fell so low, that the vapour of carbonic acid given off by the bath, instead of having a pressure of one atmosphere, had only a pressure of $\frac{1}{24}$ th of an atmosphere, or 1.2 inch of mercury; for the air-pump barometer could be kept at 28.2 inches when the ordinary barometer was at 29.4. At this low temperature the carbonic acid mixed with the ether was not more volatile than water at the temperature of 86°, or alcohol at ordinary temperatures.

In order to obtain some idea of this temperature, I had an alcohol thermometer made, of which the graduation was carried below 32° Fahr. by degrees equal in capacity to those between 32° and 212°. When this thermometer was put into the bath of carbonic acid and ether surrounded by the air, but covered over with paper, it gave the temperature of 106° below 0°. When it was introduced into the bath under the air-pump, it sank to the temperature of 166° below 0°; or 60° below the temperature of the same bath at the pressure of one atmosphere, *i. e.* in the air. In this state the ether was very fluid, and the bath could be kept in good order for a quarter of an hour at a time.

As the exhaustion proceeded I observed the temperature of the bath and the corresponding pressure, at certain other points, of which the following may be recorded:—The external barometer was 29.4 inches:

When the mercury in the air-pump barometer

inch	deg. Fahr.
was 1 the bath temperature was	—106
10	—112½
20	—121
22	—125
24	—131
26	—139
27	—146
28	—160
28.2	—166;

but as the thermometer takes some time to acquire the temperature of the bath, and the latter was continually falling in degree; as also the alcohol thickens considerably at the lower temperature, there is no doubt that the degrees expressed are not so low as they ought to be, perhaps even by 5° or 6° in most cases.

With *dry* carbonic acid under the air pump receiver I could raise the pump barometer to twenty-nine inches when the external barometer was at thirty inches.

The arrangement by which this cooling power was combined in its effect on gases with the pressure of the pumps was very simple in principle. An air-pump receiver open at the top was employed; the brass plate which closed the aperture had a small brass tube about six inches long passing through it air-tight by means of a stuffing-box, so as to move easily up and down in a vertical direction. One of the glass condensing siphon tubes, already described (fig. 1), was screwed on to the lower end of the sliding tube, and the upper end of the latter was connected with a communicating tube in two lengths, reaching from it to the condensing pumps; this tube was small, of brass, and $9\frac{1}{2}$ feet in length; it passed six inches horizontally from the condensing pumps, then rose vertically for two feet, afterwards proceeded horizontally for seven feet, and finally turned down and was immediately connected with the sliding tube. By this means the latter could be raised and lowered vertically, without any strain upon the connexions, and the condensing tube lowered into the cold bath *in vacuo*, or raised to have its contents examined at pleasure. The capacity of the connecting tubes beyond the last condensing pump was only two cubic inches.

When experimenting with any particular gas, the apparatus was put together fast and tight, except the solid terminal screw-plug at the short end of the condensing tube, which being the very extremity of the apparatus, was left a little loose. Then, by the condensing pumps, abundance of gas was passed through the apparatus to sweep out every portion of air, after which the terminal plug was screwed up, the cold bath arranged, and the combined effects of cold and pressure brought to unite upon the gas.

There are many gases which condense at less than the pressure of one atmosphere when submitted to the cold of a carbonic acid bath in air (which latter can upon occasions be brought considerably below -106° Fahr.) These it was easy, therefore, to reduce, by sending them through

small conducting tubes into tubular receivers placed in the cold bath. When the receivers had previously been softened in a spirit lamp flame, and narrow necks formed on them, it was not difficult by a little further management, hermetically to seal up these substances in their condensed state. In this manner chlorine, cyanogen, ammonia, sulphuretted hydrogen, arseniuretted hydrogen, hydrodic acid, hydrobromic acid, and even carbonic acid, were obtained, sealed up in tubes in the liquid state; and euchlorine was also secured in a tube receiver with a cap and screw-plug. By using a carbonic acid bath, first cooled *in vacuo*, there is no doubt other condensed gases could be secured in the same way.

The fluid carbonic acid was supplied to me by Mr. Addams, in his perfect apparatus, in portions of about 220 cubic inches each. The solid carbonic acid, when produced from it, was preserved in a glass, itself retained in the middle of three concentric glass jars, separated from each other by dry jackets of woollen cloth. So effectual was this arrangement, that I have frequently worked for a whole day of twelve and fourteen hours, having solid carbonic acid in the reservoir, and enough for all the baths I required during the whole time, produced by one supply of 220 cubic inches*.

By the apparatus, and in the manner now described, all the gases before condensed were very easily reduced, and some new results were obtained. When a gas was liquefied, it was easy to close the stop-cock, and then remove the condensing tube with the fluid from the rest of the apparatus. But in order to preserve the liquid from escaping as gas, a further precaution was necessary; namely, to cover over the exposed end of the stop-cock by a blank female screw-cap and leaden washer, and also to tighten perfectly the screw of the stop-cock plug. With

* On one occasion the solid carbonic acid was exceedingly electric, but I could not produce the effect again: it was probably connected with the presence of oil which was in the carbonic acid box; neither it nor the filaments of ice which were formed on it in the air conducted, for when touched it preserved its electric state. Believing as yet that the account I have given of the cause of the electric state of an issuing jet of steam and water (Phil. Trans. 1843, p. 17) is the true one, I conclude that this also was a case of the production of electricity simply by friction, and

these precautions I have kept carbonic acid, nitrous oxide, fluosilicon, &c. for several days.

Even with gases which could be condensed by the carbonic acid bath in air, this apparatus in the air-pump had, in one respect, the advantage; for when the condensing tube was lifted out of the bath into the air, it immediately became covered with hoar frost, obscuring the view of that which was within; but *in vacuo* this was not the case, and the contents of the tube could be very well examined by the eye.

[To be continued.]

ON

A NEW METHOD OF PREPARING MEDICATED TINCTURES.

By HENRY BURTON, M.D.

Physician of St. Thomas's Hospital.

[Concluded from p. 407.]

REMARKS. — *Tinctura Aloes*. — The dissolution of good socotrine aloë, coarsely powdered, and suspended in spirit of the strength directed to be used in making the official tincture of aloë, proceeds uninterruptedly without agitation, and, when perfected, very little residue will remain in the bag. The resulting tincture will obtain its maximum density in forty-eight hours, and no change in its specific gravity will be occasioned by subsequently agitating the materials together in direct contact. Aloë only is thus exhausted by suspension; but if, instead of macerating aloë alone in a bag, it is macerated in admixture with the extractum glycyrrhizæ, another component of the *tinctura aloes*, then the tincture will not attain its maximum density in forty-eight hours, and on opening the bag after this interval, a considerable bulk of feculent residue will be exposed, mingled with portions of the original liquorice, which cannot be entirely exhausted until the materials have been agitated together in direct contact. By subsequent agitation the specific gravity of the official tincture made by suspension in forty-eight hours was raised three units in the third place of decimals, or from 0.996 to 0.999. The difference, however, might be diminished by protracting the maceration by suspension a few

days, and by draining the bag of solids, so as to favour the circulation of the tincture through them, once daily; but as the source of the difference is in the loss of liquorice, and not of aloë, the medicinal virtues of the preparation will not be seriously affected by it, and the deficiency of saccharine taste might be compensated for by the use of a rather larger quantity of liquorice than directed in the London Pharmacopœia of 1836. The plan suggested by Dr. Duncan, in reference to exhausting substances of different degrees of solubility used in making compound tinctures successively in spirit, does not seem to be preferable in this instance to the ordinary plan of macerating all the components together, and failed in one trial to increase the specific gravity of the tincture of aloë.

Tinctura Aloes Composita. — Rectified spirit is a very good solvent of aloë, and is used in making its compound tincture under the form of tincture of myrrhæ. The dissolution of coarsely powdered aloë proceeds without cessation to its completion, and requires no assistance from shaking. The resulting tincture attains its maximum density on the second or third day of suspension, and if the aloë was of good quality, and no crocus used, very little residue will remain in the bag; the tincture may be drained from the residue, for the most part, and little or no additional quantity would be obtained by subsequent compression, if prepared without crocus. In preparing the official compound tincture of aloë crocus is used, but none was employed in the one noticed in the preceding table; consequently its specific gravity is lower than that of the official tincture, and the hard extract yielded by a fluid drachm consisted only of the resin of myrrhæ and aloë.

Tinctura Balsami Tolutani. — Balsam of Tolu is very soluble in spiritus rectificatus, and its tincture is best prepared by suspension in a bag, by means of which its agglutination to the bottom of the macerating vessel, and which occurs in the ordinary process, and the necessity of filtering after maceration, are obviated. The resulting tincture was quite clear at 62°, but became turbid when cooled down below 45°: its density was precisely equal to a similar tincture made by direct contact and agitation, and only a very small

quantity of residue was left in the bag, from which almost all the tincture was drained.

Tinctura Calumbæ.—Spiritus tenuior is used in a large proportion to the calumba in making its tincture, and effectually exhausts it in less than forty-eight hours by mediate contact and suspension, unaided by agitation. The resulting tincture is obtained clear, and precisely resembles a similar one made, *cateris paribus*, by agitation with direct contact, and may be, for the most part, drained from the fibro-amylaceous residue of the calumba, without incurring waste; but the expressed tincture is rather stronger than that which is drained from the bag.

Tinctura Assafœtida.—A large portion of the resin and oil of assafœtida is quickly dissolved by spiritus rectificatus in mediate contact, but its gummy component towards the close of the maceration forms an insoluble residue, which retards the exhaustion of the last portions of it, in the same way as the feculent residue obstructs the dissolution of the last portions of liquorice used in making the tincture of aloe. The perfect exhaustion of assafœtida by spiritus rectificatus cannot be accomplished in two or three days by either of the two processes under consideration, and in seven days the tincture made by direct contact and agitation was a little stronger than that made by mediate contact; but in equal periods of time the tincture made by the one possessed very nearly the same specific gravity as that made by the other process, and by protracting the maceration by suspension to seven days, as well as taking the precaution to drain and reimmerge the bag daily, the tinctures will be found closely to resemble one another in all respects. No difficulty attends on the packing: the bulk of the assafœtida is small in proportion to its solvent, and very little tincture adheres to the bag of residue after the final draining. The assafœtida used in my experiments was soft, and cut into small fragments; but for the purpose of favouring the circulation of the tincture through it, it should be reduced to a coarse powder in a cold mortar.

Tinctura Cascarillæ.—Spiritus tenuior quickly acts on the cascarilla suspended in it, and the resulting tincture, at the end of two days, will precisely resem-

ble one made by the ordinary process, *cateris paribus*, in ten days. The bark should be reduced to a coarse powder, and, as its proportional bulk is small, it may be enclosed loosely in a bag, and will be effectually covered by the spirit. The resinous nature of cascarilla favours the circulation of the resulting tincture, and no extraordinary attention is required to ensure the success of the process. It is scarcely necessary to raise the bag until the end of the maceration, when a large proportion of the tincture may be obtained without the aid of pressure, by draining, and quite clear.

Tinctura Cinchonæ Pallidæ.—Cinchona is rather bulky, but when used in coarse powder, it may be packed in a bag sufficiently small to admit of being effectually covered by the proportional quantity of spirit in which it is to be macerated. The resulting tincture attains its maximum density in forty-eight or seventy-two hours, and will then resemble in all its sensible qualities a similar tincture made with materials of equal goodness by direct contact and agitation in ten days. The tincture is quite clear, and about one-sixth of the original quantity of spirit is retained by the residue after draining, which, for the most part, may be expressed; and the bark loses by maceration about twenty-five per centum of its weight, consisting of water and extract soluble in spiritus tenuior.

Tinctura Conii.—This tincture is made with great ease by suspension, and attains its maximum density in two days. At the end of this time it will resemble a similar tincture made with materials of equal goodness in all its sensible qualities, and be perfectly clear. The herbaceous structure of conium is favourable to its compression within the requisite compass, and its bulk may be sufficiently reduced in a bag without rendering it impervious to the proportional quantity of spirit in which it is to be macerated. The bag should be drained once or twice during the process, and after the final draining a quantity of tincture will continue to adhere to the residue until expressed. This step may be taken immediately after the draining has ceased, and the economy of time as well as spirit which is ensured by preparing the conium in its dry state,

for the subsequent expression of its tincture, strongly recommends this process in preference to the ordinary plan.

Tinctura Digitalis.—Spiritus tenuior acts very readily on, and its proportional quantity is amply sufficient to cover, digitalis under moderate pressure, suspended in it. The resulting tincture attains its maximum density in two days, and, if prepared with the mature leaf, thoroughly dried, will have a specific gravity of 0.934; but if the immature leaf is substituted, and its dessication neglected, the specific gravity of the tincture made with it will be much higher, and has sometimes reached 0.972. But the specific gravity of the best kind of this tincture never much exceeds 0.944; and when above 0.958, its medicinal virtues, according to my observation of its effects at St. Thomas's Hospital, and which were noticed in the MEDICAL GAZETTE for June 1841, cannot be trusted. The bag process is extremely well adapted for making this tincture, and surpasses the ordinary method in most respects, but more especially as regards the economy of spirit, as well as of the attention required to conduct it.

Tinctura Guaiaci.—Guaiacum reduced to a coarse powder, or small fragments, and suspended in a bag, dissolves in spiritus rectificatus with almost the same rapidity as sugar melts in water. The resulting tincture attains its maximum density in one day or thirty hours, and the bag retains, after being drained, only a very small proportion of tincture, besides the usual impurities of the drug. Guaiacum is rather bulky compared with the proportional quantity of spirit in which it is suspended; but it is so very soluble, that the full bag may be at first suspended half above the spirit without prejudice to the process, but as soon as the contents of the lower half have given place for the most part to those of its upper half, the whole bag should be lowered into the solvent. The same remarks apply to the preparation of the officinal tinctura guaiaci composita, and in making both tinctures, the inconvenience which arises from the adhesion of the guaiacum to the bottom of the macerating vessel in the ordinary method is obviated by the intervention of the bag.

Tinctura Hyoscyami.—Notwithstanding the bulky nature of hyoscyamus,

a very moderate degree of pressure will suffice to contract its bulk within the requisite limits, and it may be effectually macerated in the proportional quantity of spirit. The resulting tincture attains its maximum density on the third day, and resembles in all respects a similar tincture macerated eight days by the ordinary process; but as a considerable portion of the tincture is retained by the hyoscyamus after draining, moderate pressure subsequently applied to the bag will be required to separate it. Its separation may be effected with little or no comparative waste of tincture; and for reasons similar to those given in reference to the tinctura lupuli this part of the bag process far excels in its economy that of the ordinary method.

Tinctura Jalapæ.—Jalap should be macerated in the form of a coarse powder, and not be finely pulverized; it is rather bulky, but with the ordinary precautions before frequently alluded to it may be effectually covered by the proportional quantity of spirit in which it is to be suspended. A considerable proportion of pulpy residue, intermingled with a little jalap, remains in the bag towards the close of the maceration, and, for the purpose of aiding the circulation of the solvent through it, and of exhausting the jalap, the bag should be raised once daily and drained. About one-seventh of the original quantity of spirit is retained by the bag of residue after the final draining, and the resulting tincture attains its maximum density on the third or fourth day, when it will be found to resemble in all respects a similar tincture made by the ordinary mode, with much more trouble, in fourteen days.

Tinctura Kino.—Kino is very soluble in spiritus rectificatus, and its tincture is made by the bag process with the greatest facility in twenty-four hours, at the end of which time it will have acquired its maximum specific gravity, and resemble, in all respects, a tincture made, *cateris paribus*, by the ordinary method. A small proportion of residue, insoluble in spirit, remains in the bag, varying, however, with the kind of kino employed, but which never exists in quantity sufficient to interfere with the action of the solvent, nor to retain the

tincture by adhesion, and seldom varies more than between $\frac{1}{4}$ to $7\frac{1}{4}$ per centum of kino. In the ordinary process of making this tincture, the kino, after being softened by the spirit, adheres to the bottom of the macerating vessel, and from which it is best detached by violent agitation; but this additional labour is obviated by the intervention of the bag; and simple draining only, at the termination of the maceration, will separate almost all the tincture from the residue.

Tinctura Lupuli.—The bag process is admirably suited for making the officinal tincture of hop, and obviates, in great part, the loss by evaporation consequent upon the tedious transfer of the strobilus, saturated with tincture, from the macerating vessel to the press and filter, which is requisite to be made in the ordinary process, and a moment's comparison of the steps of the two processes will serve to show the great superiority of the bag over the ordinary process. The hop employed in making the officinal tincture retains, after the final draining of the bag at the close of the maceration, very nearly one-half of the resulting tincture; the other half can be drained from it without loss, but the portion which adheres to the residue can only be separated by pressure, and its separation is effected with much greater celerity, and with much less waste from the hop now moist, but which had been previously enclosed whilst dry, in the bag, which now serves also as a filter, than from the moist hop compressed in and adhering to the sides of an ordinary macerating tub, and from which it has to be transferred to a filtering cloth, and submitted to the press. No impediment to the exhaustion of the hop is caused by the pressure which is required to contract its bulk within a compass sufficiently small to be covered by the proportional quantity of spirit in which it is macerated; but the circulation of the solvent will proceed freely through the solids, and in less than thirty hours the resulting tincture will have attained a specific gravity equal to that of a tincture made in eight days, and greater than another made in an equal period of thirty hours by the ordinary process.

Tinctura Myrrhae.—Myrrha should be used in the form of a fine powder, and is soon deprived of its oily and

resinous components by spiritus rectificatus, through the bag in which it is suspended; but in consequence of the large proportion of its gummy component, which is insoluble in rectified spirit, and forms a residue in the bag, intermixed with myrrha, the circulation of the resulting tincture is retarded towards the end of the maceration, and hence it is requisite to favour the dissolution of the last portions of myrrha by raising and draining the bag once or twice during the process. With this precaution, the resulting tincture attains its maximum density in two or three days, and will resemble in all respects another tincture made with materials of the same quality by agitation in twenty days. But the qualities of commercial myrrha vary, and it will be perceived, by inspecting the table, that the quantity of hard extract yielded by equal measures of different tinctures was very unequal. The most fragrant and palatable tincture possessed the highest specific gravity, but afforded a less proportional quantity of extract, as represented by the figures on line No. 3, than the least fragrant tinctures, noticed on the lines Nos. 1 and 2. Very little tincture adheres to the residue after draining, and subsequent pressure may be dispensed with without incurring any serious waste.

Tinctura Opii.—The proportional quantity of spiritus tenuior effectually covers the opium employed in making this tincture, and reaction begins in a few minutes after the materials have been placed in mediate contact. The opium should be used finely pulverized, and when loosely packed its dissolution will proceed satisfactorily for the first twenty-four hours, without interruption, through the bag in which it is suspended. But at the end of this interval the heavier tincture will have gravitated towards the bottom of the macerating vessel, and the rate of solution will be slower. Hence, with the object of equalizing the specific gravity of the several strata of tincture, and of favouring the dissolution of the last portions of opium intermixed with the various substances which it contains insoluble in spiritus tenuior, it will be proper to drain the bag of residue, and, as soon as drained, to re-immerser it in the tincture. The draining and re-immersion should be repeated once

daily, or every second day; and lastly, after the final draining, the residue should be compressed. By taking these precautions, the tincture will attain its maximum density about the sixth day of maceration, and resemble in all respects a similar tincture made *cateris paribus* by direct agitation in the same length of time.

The results exhibited on the lines Nos. 1 and 2 were obtained from experiments on two portions of the same kind of opium, and are rather favourable to protracted maceration, but do not affect the question of suspension; for it will be perceived by the results on lines Nos. 3 and 4, obtained from an experiment upon one portion of another kind of opium, that when the time of macerating opium by suspension is equal to that during which it has been macerated in direct contact with spirit, then the specific gravities of the resulting tinctures will be also equal.

Tinctura Scillæ.—The dissolution of squill in spiritus tenuior proceeds slowly after the first day or two of its maceration by suspension; and the precautions requisite to insure the success of the process are analogous to those noticed in reference to making the tinctura opii. The tincture of squill cannot be made by either process, of the greatest strength, with the materials directed to be employed, until after the fifth day of maceration; but on the tenth day the exhaustion of the squill was completed by both processes, and the tincture made by suspension resembled in all respects another made by the ordinary process in the same interval. Squill when saturated with spiritus tenuior is viscid, and in consequence of its consistency the circulation of the weak tincture through it is languid towards the close of the process, and requires to be accelerated by gravitation in air; but with the precautions above noticed, and packing the bag loosely, the squill will be exhausted in the same interval by the bag process as by the ordinary process, and the saturated residue be ready prepared for the press after its final draining. The bag and residue retain after draining about one-fifth of the original quantity of spirit employed; and this portion cannot be collected in the form of tincture until expressed.

Tinctura Valerianæ.—Valerian is

readily deprived of its soluble components by spiritus tenuior in forty-eight hours; it should be packed loosely in a bag, and is effectually covered by the proportional quantity of spirit.

I beg, in conclusion, to observe, that in the experiments before referred to, the compression applied to the bag after draining was only moderate, and not powerful; and consequently, as expressed are often stronger than drained tinctures, the specific gravities of several of the tinctures named on the table are probably less than they would have been had more force been exerted; but as the residues in both processes were subjected to an equal amount of pressure, a fair comparison may be drawn between the foregoing results. It has been above stated, and the statement was founded on experiments, that a considerable proportion of the tincture is retained by the residue when bulky, and which can only be effectually separated from it in the form of tincture by forcible compression. The expressed tincture was stated also to be in some instances stronger than the drained tincture; hence, with the object of economizing the tincture, and obtaining it of the greatest possible strength, pressure must be applied to the residue. This requisite compression can be effected, I repeat, with greater facility and less waste of spirit, by transferring the packed bag, after its final draining, from the macerating vessel to the press, than is practicable by the old plan of agitation. The consumption of spirit in the bag process is also less than in that of percolation and displacement in all the examples in which the residua are bulky, and retain a large proportion of tincture. For in my experiments with a percolator similar to one described by Dr. Christison, it was impracticable to remove the residue from the vessel to the press without waste; and, with the view of separating the tincture adhering to the saturated residue in the percolator, by the addition of a portion of fresh spirit, equal in quantity to the bulk of tincture retained by it, after the manner proposed in books, I found the resulting tincture, after the addition, to be weaker than the tincture which had been previously percolated. The displacement cannot be effected by the purely mechanical gravitation of the fresh spirit, but a combination

must previously ensue between it and the adhering tincture when brought into contact, and the latter is consequently obtained in a diluted form. The plan, also, of recovering the fresh spirit, on a principle of economy, by subsequently pouring water on the residue, and distilling the diluted spirit, is also objectionable, as being attended with expense and trouble, and as, moreover, producing a rectified spirit, which, after volatile substances had been macerated in it, would be flavoured by them, and rendered useless for many purposes. On the score, therefore, of economy, the process of percolation can scarcely remunerate the pharmacist; and notwithstanding the experienced opinion of Mr. Bell, stated in the *Pharmaceutical Journal* for April 1845, I presume to repeat my impression, that the process of percolation is far more expensive, more difficult to perform, and less generally applicable to the preparation of medicated tinctures, than the plan of macerating substances packed in bags and suspended in spirit.

ON THE CAUSE OF THE PULSE.

(From a Correspondent.)

THE object of the present communication is to examine whether the view entertained by physiologists concerning the cause of the pulse be true or false; and if, on examination, this view shall appear incorrect, to offer another explanation of the facts relating to this branch of physiological investigation.

The prevalent idea regarding the cause of the pulse may perhaps be stated in the words of Müller:—"The impulse given to the blood by the heart distends first merely the arteries nearest to the chest. These, by their elasticity, again contract, and thus cause the distension of the next portion of the arterial system, which also, in its turn, by contracting, forces the blood into the next portions, and so on; so that a certain interval of time, although a very short one, elapses before this undulation, resulting from the successive compression of the blood, and the dilatation and contraction of the arteries, reaches the most distant parts of the system." He then proceeds to

compare the pulse to the undulation on the surface of water.

Again: "The arterial pulse, then, we may conclude is the effect of the oscillation propagated along the coats of the arteries, and in the blood itself, in consequence of the pressure exerted upon the column of blood in the aorta by the heart in its contraction*." I am not aware that physiologists have, in any material respect, altered their opinion on this subject.

It appears to me that the view of the pulse above stated is essentially incorrect for the following reasons:—

1. If the pulse in a distant artery (*i. e.* of any artery whose pulse is not dependent on the first wave of blood) were dependent on the contraction of the tube above it, or, to speak more correctly, of the portion of the arterial system between it and the heart, this pulse would of necessity follow the second sound of the heart. For no arterial contraction could exert any force in aid of the circulation, until after the closure of the aortic valves. But the pulsation of such an artery does not follow the second sound; if it did, we ought to feel the pulse in vessels so situated during the moment of pause in the heart's action. Every one knows that this is not, and cannot be the case, because the pulse in the most distant artery, as, for instance, in the dorsal artery of the foot, is only $\frac{1}{8}$ — $\frac{1}{7}$ of a second later than the pulse in the carotids. Again, it is equally manifest, on the other hand, that all force exerted by arterial contraction, before the closure of the aortic valves, would retard the flow of the blood, and tend to force it back again into the ventricle. This fact, then, that the pulse in distant arteries precedes the second sound, seems to militate very strongly against the supposition that such pulsation is due to the propagation of a wave of blood, by the contraction of that portion of the arterial tube which lies between the artery felt pulsating, and the heart.

2. Again, let us imagine the ventricle to have driven a wave of blood into the commencement of the arterial system. The recoil of this portion propagates the wave of blood, and dilates the tube beyond it. But when this second portion contracts, it will exert

* Baly's Müller, vol. 1, p. 213.

the same power and tendency to dilate the tube beyond it. The pressure of fluids is uniform, and there is no vital contraction of the arterial tube behind the portion of artery supposed to be contracting; the elasticity is a merely physical property of the walls of arteries, and will exert the same influence in preventing dilatation, in an advancing, as in a retrograde direction. Or, to speak more clearly, the elasticity of the tube behind the portion of artery supposed to be contracting, will offer no more obstacle to *its* dilatation. And hence we are led to the conclusion, that the arteries, if they act according to the commonly received theory, cannot fail to exercise a force highly detrimental to the circulation of the blood.

3. On the commonly received theory of the pulse, all causes which would render arterial contraction of less effect would naturally be expected to produce weakness of the pulse.

This is not the case. In regurgitant disease of the aortic valves, the pulse is very hard and full, until such period as, from the extensive ossific induration, there occurs considerable obstacle to the passage of the blood into the aorta.

4. The quantity of blood which the ventricle throws into the aorta at each pulsation would be much more than sufficient to cause a mere wave. The left ventricle, according to the most recent authorities, discharges 5 oz. of blood at each pulsation. Let us suppose, for the sake of illustration, that the first six inches of the aorta may hold the same quantity. Admitting that this is dilatable to $\frac{1}{10}$ of its capacity (more than the real amount), $\frac{1}{10}$ of the blood propelled by the ventricle, or 4 drachms, will bring it to its maximum of distension. Where does the rest of the blood expelled by the ventricle go to? This leads to the opinion which it is the object of the present paper to establish.

When we consider that the great bulk of the blood is contained in the capillaries, and that, of the remainder, the veins contain probably nearly three times as much as the arteries, it will be at once apparent, that the real amount contained in these latter tubes must be comparatively inconsiderable. An approximation to the real amount may be perhaps obtained by considering the amount of injection which may be thrown into the arterial system after

death. Under the most favourable circumstances, that is, when the minute ramifications are well injected, (and these it is well known are often stretched) the quantity of injection thrown in, probably never exceeds a quart and is seldom so much.

After this preliminary remark, we may recur to the previous question, viz. what becomes of the blood which is thrown into the aorta, over and above that which is received in the dilated tube? The answer which I shall give is the following:—The blood passes on through the whole of the arterial system, driven by the force of contraction of the left ventricle, and causing that dilatation of the arteries which is felt at the pulse. The conclusion appears self evident on paying attention to the facts of the case. It appears to me, that this distension of all the arteries, even to the smaller branches, must precede any contraction of those parts of the tube nearest the heart; and if it do precede this contraction, where is the necessity of conjuring up an undulatory theory, to account for a distension which has already taken place?

I remark—1st. That there is a relation between the amount of blood discharged by the ventricle at each pulsation, and the amount of dilatation which the arteries undergo. Any one who will take the trouble to compare the amount of blood expelled by the contraction of the ventricle (5 oz.) with the whole area of the arterial tube, as stated approximately above, will perceive that the 5 oz. is sufficient to account for the highest amount of dilatation which the arteries are conceived to undergo, whilst a considerable surplus is left sufficient to account for other circumstances which would tend to reduce this dilatation.

2. It will perhaps be said, that this explanation might be true enough, if the arterial tree itself were alone concerned, and if the arteries terminated in closed extremities; but that, as the arteries terminate in the capillaries, and the blood has an exit in that direction, the blood ejected by the ventricle would not be sufficient to dilate the arteries to the requisite extent. In answer to this we may observe, that it is in the capillary vessels that the blood is first retarded, through the increase of friction. There is no doubt that the com-

plete closure of the terminal ramifications of the arteries would produce a greater distension of those vessels, supposing that such closure could take place just at the moment when the ventricle discharges its contents; and the contrary is equally true, viz. that the exit afforded to the blood must tend to diminish the effect which the blood expelled by the ventricle will exert in distending the arteries. But we have seen above, that probably the 5 oz. are more than sufficient to produce the utmost degree of dilatation which the arteries undergo; and it is fair to conclude, that the dilating effect of the surplus is lost by its passage into the capillaries; and to this we may add the fact, that we are not to regard the capillaries as affording a free escape to the blood, inasmuch as they themselves are always full, and must present considerable obstacle to the passage of more blood into them.

The theory of the pulse, then, which I propose to the consideration of your readers is the following:—

1. The cause of the pulsation felt in the arteries is their progressive and universal distension by the blood expelled by the left ventricle.

2. This distension is due to the direct force of the left ventricle; not to that force transmitted by the successive undulatory contractions of the arterial walls.

3. This distension still partakes of the character of one long wave, in so far that the first part of the arterial tube is necessarily dilated before the middle and last parts; but still the dilatation of these middle and last portions is not due to the contraction of those portions of the arterial tube, which are nearer the heart than they are. To use the illustration of the pulse which has been drawn from waves on water, I should say, the pulse does not resemble the successive undulations produced by the fall of a stone on the surface of a lake; but is rather to be compared to the uniform swell of a river when the tide rushes rapidly up it. Any one who has witnessed the rush of a body of water up a river confined within high banks, at unusually high spring-tides, will at once understand the comparison.

The mode in which the elasticity of the arteries aids the heart in conducting the circulation, is much more

strongly apparent, in my own opinion, in the present view of the causes in action, than when we take the explanation of successive undulations.

I have especially avoided giving any precise quantities in my present communication, as such statements could only be approximations to the truth. I will now conclude by stating my conviction that, when by an improved method of accurate measurement, the real capacity of the arterial system shall have been determined, that capacity will bear a definite proportion to the amount of blood discharged by the ventricle—a proportion less than is usually supposed; and that the relative quantities taken together and connected with the other modifying circumstances, will afford the true explanation of the pulse.

Θ

CASES OF POISONING BY PRUSSIC ACID.

WITH REMARKS.

Read before the South London Medical Society, May 1845.

By JAMES HICKS, Esq. Surgeon,
Newington, Southwark.

I BELIEVE it will be readily granted there is no subject in the whole range of medical science of more importance, of greater interest, or one that requires a more comprehensive knowledge of medicine and its collateral sciences for its elucidation, than that of toxicology; embracing as it does, an inquiry into the action of poisons, the symptoms produced when taken internally, the antidotes required for their relief, and, lastly, into the means requisite for their detection. Yet, notwithstanding its importance, it is only within these few years, in this country, it has received that attention from the hands of medical men which the subject so fully deserves; and even now, I fear, it is by far too much neglected by the profession in general. The number of cases of murder, suicide, and accidental death from poison, that have lately occurred, together with the difficulty that has at all times arisen in bringing their true nature to light, has, however, at length clearly convinced every well-informed medical practitioner how absolutely necessary a knowledge of this

subject may at times become, in order that he may be capable of duly performing the duties attached to his office; and certainly, when we recollect that it is on our thorough knowledge of the symptoms produced, we can ever hope to distinguish between such symptoms, whether they be the result of poisonous agents, or merely the effect of natural causes; and still more, when we remember it is on our correct diagnosis of this very point that our successful application of remedies, in the way of antidotes, must depend, little can be required to be said by me to prove its importance in relation to medical treatment. Still, however, there is another point of which I have as yet made no mention. I allude to its value in a medico-legal point of view; for when we consider the weight at all times attached to medical evidence, and, at the same time, remember it is by no means unfrequent that on medical evidence alone innocence is vindicated and crime detected, nothing more can be required to be urged by me as to the importance of a knowledge of this science. If, therefore, my position be granted with respect to poisons in general, to none can it apply with greater force than to prussic acid—a substance which, by the rapidity of its action, and the virulence of its nature, is not surpassed, if equalled, by any known agent; and still more, as this poison has latterly been the cause of death in two instances from criminal administration, it certainly behoves us all to inquire, as far as lies in our power, into its toxicological peculiarities; especially so, when we bear in mind how exceedingly difficult it has been to prove its administration, arising from the volatility of its nature, as well as the great variability in the symptoms and morbid appearances produced by its action. A case, therefore, having lately occurred to me, where I had an opportunity of witnessing many of the symptoms prior to death, assisting at the post-mortem inspection, and where, also, the quantity of the poison was satisfactorily ascertained by chemical examination, the history of the case being thus complete, I considered that it might tend to elucidate many points hitherto the subject of so much dispute. It was as follows* :—

On Friday, the 21st of March, I was sent for in great haste to see a person who was described to be taken suddenly seriously ill. On my arrival, I found the patient, a female about two-and-twenty, lying on her back, perfectly insensible, with her teeth clenched, foam issuing from the mouth, and the face so greatly congested as to be almost purple; the breathing was slow, laborious, and at long intervals; the pulse was not perceptible, while the action of the heart was but feebly to be felt; the eyelids were partly closed, and the eyes appearing as if pushed forward between them, the pupils, at the same time, being fully dilated, and quite insensible to the stimulus of light, the body being, at the same time, under such strong spasmodic action that the head seemed buried between the shoulders, and the arms nearly turned round by the action of the pronator muscles. Such were the symptoms, as nearly as I can recollect, when I first arrived; and, from the bloated state of the countenance, together with the foaming at the mouth, my first impression was, that the patient was labouring under some form of epilepsy; but upon finding the pulse gone, and the weak state of the heart, I naturally looked for some other cause, when I found, on inquiry, that the symptoms had come on immediately after taking a dose of medicine, which I ascertained, by tasting and smelling the portion left, to contain prussic acid; this led me to the conclusion that the person was suffering from an overdose of that poison, when I, in conjunction with Mr. Watson, lost no time in resorting to those remedies recommended in similar cases—such as applying ammonia to the nostrils, the cold affusion to the head, and in endeavouring to give ammonia and brandy internally; but from the muscles of deglutition being so fully under the influence of the poison, I think but little, if any, passed into the stomach, notwithstanding every exertion was made, by irritating the fauces, to stimulate those muscles to action. Our efforts were, however, perfectly useless, as the breathing became gradually slower and at longer

abridged form; 1, because it may not have been seen by many of our subscribers, and 2, because the description of the facts is necessary for the correct understanding of what follows.—ED. GAZ.]

* [A report of this case was published in our last volume, but we here republish it in an

intervals until it entirely ceased, death appearing to have been caused, in this instance, by the perfect inability of the patient to get air into the lungs by inspiration; the time that elapsed between taking the poison and death being twenty minutes.

Upon making inquiries of the father, who was present when the medicine was taken, it appears that on the girl taking the draught, she started up, throwing her hands over her head, at the same time making a kind of gasping-sound (as if she had a difficulty of getting her breath), stood for a second, and then, running forward for a short distance with great violence, fell with her head first to the ground, after which she never moved, but continued to make a moaning noise for five minutes afterwards.

At ninety hours after death (or nearly four days), the body was examined in the presence of Mr. Waterworth, Mr. Watson, and myself, and the following were the appearances presented:—

Externally.—The body of short stature and very fat; the teeth were clenched, and foam was still adhering round the mouth; the face of a dusky-red hue, and the whole of the depending part of the body of a dark purple or violet colour; in fact, from the external appearance, having very much the look of a person who had died from asphyxia.

Head.—The dura mater and sinuses much congested, and the whole substance of the brain dotted with blood, which was fluid and very black; the ventricles empty, and the plexus chorioidea pale and bloodless, but no odour of prussic acid perceptible.

Thorax.—On opening this cavity, the odour of prussic acid became distinctly perceptible, and was certainly far more so in this than in any other part of the body; the lungs much congested, but healthy; heart small, and of feeble power; the right ventricle slightly dilated and loaded with blood, which was fluid and very black; valves healthy, and the aorta perfectly empty.

Abdomen.—The stomach contained about four ounces of fluid smelling strongly of prussic acid, its lining membrane appearing healthy, with the exception of a small patch on the posterior part, near the cardiac orifice, which was red and vascular; but whe-

ther such was the result of the poison is, I think, doubtful, as it was for some pain in the stomach that the patient was taking medicine. The liver and gall-bladder healthy, and not tinged blue; the other organs presented no remarkable appearance, with the exception of the kidneys, which were much congested and of a dark pinkish hue.

On Wednesday, the 26th, being five days after death, the contents of the stomach were taken to Dr. Letheby, of the London Hospital, for examination. At this time the contents still smelt of prussic acid, although much modified by the smell usually connected with half-digested food; they were, however, in the first instance, distilled in a water-bath until a drachm of clear fluid passed over, smelling faintly of prussic acid, a portion of which being tested by the iron test, gave evidence of the poison by the formation of Prussian blue; and afterwards, by testing with nitrate of silver, a white turbidity resulted, soluble in boiling nitric acid, but perfectly insoluble in cold—a proof of its being cyanide of silver: these tests, taken in conjunction with the odour, satisfactorily proved the presence of prussic acid. The next point to be considered was the determination of the quantity taken by the deceased. To ascertain this question, half of the mixture was submitted to distillation until five drachms of fluid passed over, smelling strongly of prussic acid; this being tested with nitrate of silver, nine grains of cyanide of silver were obtained. In the whole mixture, therefore, amounting to four ounces, there would be a quantity of prussic acid equivalent to eighteen grains of cyanide of silver; this would amount, according to the usual mode of calculation, to three grains and six-tenths; consequently, as the deceased had taken one-fourth part of the mixture, it is evident death was caused by a quantity not exceeding nine-tenths of a grain of pure anhydrous acid, equivalent to 18 grains of Scheele's, or from 45 to 49 of the Pharmacopœial acid, the former containing five per cent., and the latter two per cent.

The above case appears to me to present many points of great interest, and more especially so at the present time, so much having been said as to the symptoms produced, as also with

respect to the quantity of this poison required to cause death. Before, however, alluding to these points, I should wish briefly to notice a few of the peculiarities which have been observed by the best authorities on this subject.

Death from prussic acid being generally the result of either suicide or murder, it is evident our opportunities of witnessing the symptoms produced have been but few; our chief knowledge therefore of its effects has been derived from experiments performed on animals; and of all poisons, there are few which have engaged the attention of physiologists more than the one under consideration. From the few cases, however, which have been met with in the human subject, it appears that the symptoms produced are in many respects very similar; indeed, from the highest to the lowest, all suffer from its deadly influence.

With respect to the difference observed as existing between the effects on animals and the human subject, they will be noticed as we proceed. It is also equally detrimental to vegetable life, while seeds immersed in the acid lose their power of germination, Majendie, who has experimented with the pure acid more than any other physiologist, states that if a drop be put into the throat of a dog it makes a few hurried respirations, and drops down dead; that it acts almost as violently when dropped into the eye, and when injected into the jugular vein: the animal drops down instantly.* Dr. Christison, however, wishing to ascertain the shortest as well as the longest period that elapsed prior to the poison affecting the system, found that while in some instances the effect is instantaneous, in others a period of twenty seconds may elapse. The effects of the diluted acid are very similar, if the dose be large (as was proved by Mr. Macauley, and others, at Leicester); on the contrary, if the quantity administered be not so large, there is a slight difference; the action on the system not being so immediate, while life is protracted for a longer period. Pereira states, when the diluted acid is used, in some instances the poison does not begin to affect the system for several minutes†; from experiments, however,

which I have performed on cats and dogs, I have never known a longer period than forty seconds to elapse prior to its action becoming visible.

I would also observe, with respect to my own experiments made with Scheele's acid, that I have not witnessed a single instance of death taking place without being preceded by convulsions. I am inclined also to believe, from two or three experiments, where I injected the poison into the stomach by means of a tube, that its action is not so immediate when so administered as when poured into the mouth; for in one experiment, where I injected into the stomach of a cat a quantity as much again as what I had usually observed to destroy life, the animal remained for some time quite insensible to its action, when, after in the first place vomiting, it became suddenly violently convulsed, and died in about five minutes; the usual period being from one to two. The same effects were also observed in a young bull terrier (with the exception of the vomiting), for, notwithstanding the quantity injected amounted to three drachms of Scheele's acid, diluted with water, the animal survived its administration five minutes, and was a minute before its action became at all visible; while, as a proof that its action on the stomach had been very great, I might mention, that, on subsequently examining that organ, its whole surface was found highly injected, and bearing signs of very great irritation. This, I think, may be satisfactorily accounted for by the vapour of the acid passing into the lungs, when the poison is administered in the usual mode by pouring it into the mouth; and by that means acting on a large extent of highly delicate membrane like that lining the bronchial tubes, its action must be more rapid than when in contact with the mucous membrane of the stomach alone.

Of all forms the vapour appears to be the most deadly in its influence; cats dying when exposed to it in two seconds, and dogs in five.* On the human subject the symptoms following the exhibition of this acid vary consi-

lated, it appears that Dr. Pereira is correct in this opinion, the symptoms not taking place in this instance for fifteen minutes after the poison had been swallowed.

* See page 859, last volume.

* Dr. Lonsdale found it most rapidly fatal when injected into the trachea.

† From Mr. Garson's case, hereafter to be re-

derably according to the dose administered, and that in a threefold degree; as, when the quantity is insufficient to destroy life, the usual symptoms are pain in the head, nausea with vomiting, rapid pulse, hurried respiration, and sometimes salivation*; secondly, when sufficient to destroy life, but not immediate, the symptoms are similar to those in the case related; and thirdly, where the dose is so large as to cause death almost instantly, the patient sinks down without any unnatural appearance, or, if any, being a few hurried attempts at respiration, when death takes place with or without convulsions. In illustration of which I will briefly relate a case I saw some years ago. A girl having quarrelled with her lover, expressed a wish to leave the room, on account, as she stated, of feeling faint; but she had not done so more than a minute, than she was observed to throw her hands over her head, and then fall to the ground; the breathing for a time was quite imperceptible, when, after making a few gasps for breath, she died five minutes after taking the poison, without having been in the least convulsed from the first. Within a short time after she died, I arrived at the house; at this time the body was still warm, but, with the exception of a pallid state of the countenance, there was not an unnatural appearance to be seen about the corpse. It appears in this case that the girl took the poison as soon as she had left the room, and that she merely complained of feeling faint as an excuse for doing so. But the most interesting facts were, that, notwithstanding the dose was large, being an ounce of Scheele's, she had sufficient time to put the bottle into the front of her dress prior to volition being destroyed, while, at the same time, there were no convulsions, neither was there any scream, the girl falling down without making any noise whatever; it is also of interest as forming so striking a contrast to the first case related, where it will be recollected that the action on the system was immediate, although the dose was not twenty minims, whereas, in the second, a period elapsed sufficiently long to allow of the girl putting the bottle in the front

of her dress, the dose being an ounce, proving that in all cases the rapidity of its action does not depend on the quantity administered. With respect to the symptoms observed in the first case, it would appear from the father's statement that he first heard a gasping noise, but there was no shriek or scream; but, knowing the importance many persons have of late attached to this symptom, I made most particular inquiries of the father as to the noise made, and certainly, from his description, it did not bear the least resemblance to a shriek, but rather that of a gasping for breath, arising, as I believe, from the ineffectual efforts of the patient to get air into the lungs, in consequence of the function of respiration being so much interfered with, from the spasmodic state of the muscles of the chest, and probably of the glottis. These two cases, then, as well as another reported in the *MEDICAL GAZETTE** a short time since, where death took place without any shriek or scream, are sufficient to put an end to the theory that death from prussic acid is invariably preceded by a scream, a subject of so much discussion at the late trials of Tawell and Belany; besides which, if the supposition I have advanced as to the cause of this gasping sound be correct, we should expect to have a similar noise wherever that function is interfered with; consequently clearly proving the assumption to be incorrect that any peculiar cry precedes death by this poison. How this opinion of death from prussic acid being invariably preceded by a scream should have become so very general amongst medical men, it is very difficult to explain: that it is not from observing cases in the human subject, will, I think, be evident, when I say, that, although I have read over every case published in the different works on poisons and medical jurisprudence, I have not found a single instance where a shriek has been mentioned as occurring prior to death; I think, however, to a certain extent the reason of this opinion becoming so very prevalent is, from observing a cry frequently (but by no means invariably) to occur with animals, when poisoned by prussic acid.

* Drs. Macleod and Granville.

* See page 359, last volume.

That an exclamation may be made, I do not doubt, as a case in Dr. Christison's work on Poisons clearly proves; where a boy, having swallowed this acid by mistake, cried out to his brother apprentices for hartshorn twice prior to volition being destroyed; so also in the instance of Belany's wife, when she cried out, stating that she had drunk the hot liquid out of the glass. But this is merely a cry likely to be made by any person who might fancy he had taken poison, and certainly ought to be distinguished from the cry made by animals prior to death from prussic acid, which is an involuntary act, caused by spasm of the muscles of expiration, very different to the exclamation made in the two instances above, and requires to be taken into consideration before giving an answer to such a question as that put to Dr. Thomson, at the late trial of Belany, which was, whether an individual had sufficient volition after the symptoms have arrived at that period when a shriek is made, to speak so as to describe what had happened? Now, in answer to such a question, if the distinction I have endeavoured to point out as to the difference of an exclamation and the cry made by animals prior to death be correct, I think it will be readily granted by all who have witnessed the effects of this poison on animals, to be quite incompatible with its known action, to believe an individual capable of speaking even a word after the symptoms have arrived at that period; for, although volition is frequently not so far destroyed as to prevent their running about the room during the time of making the crying noise, I believe it is of a perfectly involuntary nature, and usually occurs at that stage of the symptoms when in the human subject convulsions take place.

To prove, moreover, that I am correct as to this cry being connected with the interference with the function of respiration, I might adduce the experiments of Dr. M. Hall, who distinctly states in his lectures* he has frequently observed animals to make a crying noise just before they die.

[To be continued.]

* The Gulstonian Lectures.

SOME OBSERVATIONS
ON THE
MEDICAL TOPOGRAPHY, CLIMATE,
AND DISEASES,
OF THE
BIGHTS OF BENIN AND BIAFRA,
WEST COAST OF AFRICA.

By W. F. DANIELL,
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England, &c.

[Continued from p. 198.]

IN phlegmonous and other tumors, or in local turgescence of the capillary vessels, where any tendency to suppuration exists, and in which topical bleeding is not required, the green pods of the *Capsicum frutescens*, pounded into a pulp, are applied to the part, the acridity of its essential oil acting as a powerful counter-irritant. On several occasions in which I have seen this pungent pepper employed, it could not otherwise but have augmented the painful sensations of the patients; they have nevertheless borne its infliction with the most philosophic fortitude. On some of the domestic slaves brought from the inland districts, a curious operation is practised when in infancy, and previous to their transmission for sale. It consists in the dissection or corrosion of the cuticle covering the forehead, from its subjacent textures, which leaves a large unpleasant cicatrix as the person progresses in years. Natives so disfigured have been designated by the title of Eché, the result of this partial cuticular denudation being considered as a popular mark of distinction in those countries in which its performance is inculcated. Polygamy, in conformity with the usages of African life, is fully tolerated in all classes; the number of wives each individual may possess varying in proportion to his wealth and position in society. The females are not so prolific as those of the kingdoms of Soudan, and rarely give birth to more than two or three children, if so many. Should, however, any woman at her accouchement be unfortunately delivered of twins, both the mother and her offspring are condemned to immediate destruction, inasmuch as the affair is viewed in the light of a public degradation, the Jujumen asserting that under such circumstances it places the woman upon a disgraceful

equality with the brute creation. The wife, provided she is a favourite, not unfrequently escapes with life, but the children are never suffered to exist. This barbarous custom is also adopted by the Eboes of the Quorra and Andony, and by the people of Guiana, in South America. It is likewise upheld in some of the towns of Benin, according to the statements of Bosman, who relates that "in all parts of the Benin territories twin births are esteemed good omens, except at Arebo (Reggio), where they are of the contrary opinion, and treat the twin-bearing women very barbarously, for they actually kill both women and children, and sacrifice them to a certain devil."* Parturition in the negro female has been generally represented to be an easy process, and not attended with much danger; such, however, is not invariably the case. Inquiries among the different tribes have amply satisfied me, that in many instances the parturient woman has perished from want of a little timely assistance in those complex and preternatural labours which have hitherto been supposed to be of less frequency among them than in the females of more civilized communities. Puberty in these regions commences about the age of eleven or twelve years, and sometimes much earlier.

Women, during the continuance of the catamenia, are deemed unclean, and are not permitted to touch or go near any object in use. Most of them, when in this state, retire from public life, and are usually immured in a solitary apartment, until the cessation of the discharge, and the subsequent purification, allows of their liberation; all sexual intercourse in the interim being firmly prohibited. In the interior it is a well-known fashion for the females to paint themselves in glaring colours, in order to denote the existence of this periodical secretion, and at the same time to warn strangers from being in any degree contaminated by their proximity. It is well worthy of remark, that several of these ordinances are precisely in accordance with those Mosaic laws laid down in the book of Leviticus†, which strictly enjoin many wise and salutary precautions relative

to this subject. Females of all ranks are accustomed to besmear different parts of the skin with the powder of a species of redwood tree, triturated with palm oil. This pigment has been thought to correct the factor of the perspiration, and also to enjoy certain prophylactic influences. Not a few, however, adorn themselves with it, to heighten the effect of their charms. In Katunga, Rabbah, Boussa, and other towns in central Africa, it is also used for similar purposes. Clapperton says, that it is brought from Benin, "pounded into a powder, and made into a paste; women and children are rubbed with this mixed with a little grease, every morning; and very frequently a woman is to be seen with a large score of it on her face, arms, or some part of the body, as a cure for some imaginary pain or other."* Circumcision is performed on both male and female; the consummation of this rite, however, in the latter sex, is not of such general prevalency as in Eboe and Old Calabar.

The Rio Bonny has been justly considered to be the least insalubrious river of this Bight, and not so inimical to European constitutions as the others, owing doubtless to the merchant vessels lying but a few miles from its mouth. The wide and open expanse of the stream, its near proximity to the ocean, with the sanative effects of a more protracted sea breeze, contribute, however, to render it less fruitful in those deleterious agencies that predominate in the other maritime localities of tropical Africa. The deaths among the white crews who reside in this place seldom exceed twenty-five per cent., and in the healthy season it often occurs that they do not lose a single hand out of a large complement of men. All vessels, when they enter these rivers for any length of time, are housed over with mats, made from a species of palm, which, although not waterproof, serves as a temporary protection from the rays of a fervid sun, and the inclemencies of the weather. The natives of this river in their physical conformation resemble the Eboes of the inland districts, especially in their pale yellow skin, and its smooth delicate organization. They

* Description of the Coast of Guinea, p. 415.

† Chap. xv. &c.

* Journal of Second Expedition into Interior of Africa, p. 136.

are of less stature, thinner, and of more symmetrical proportions, without that tendency to corpulency manifested by other tribes of a similar progenital derivation. Notwithstanding the intimate commercial connection which has prevailed between them and the white traders, but slight progress has been effected in the amelioration of their wretched habits, nor has there been any inclination towards the adoption of the more intelligent and refined customs of Europeans. A glance at the class of men who figure as the representatives of civilized society would not render the explanation difficult. Treacherous, vindictive, of fierce and brutal passions, with a host of degrading vices peculiar to the lowest negro tribes, there are perhaps but few people in Western Africa who bear a more disreputable and odious character. Like the inhabitants of New Calabar, they are professed cannibals, and, with many disgusting and superstitious ceremonies, eat the flesh of their prisoners of war, after putting them to death with the most callous indifference. By the ancients the inhabitants of this part of the coast were named *Xyliuces Ethiopes*. The currency of the country is a small copper bar, in the shape of a horseshoe, and termed a *manilla*.

Fifteen miles to the eastward of Rough Corner is the Rio Dony, or St. Domingo, now known as the river Andony. Its narrow and contracted entrance, blocked up by a shallow bar of sand, is alone an obstacle to the admission of trading vessels, and the little commerce it carried on formerly was monopolised by slavers. This stream leads to the short Eboe, previously alluded to, and also to the countries of the Mocoës and Quas, in the latter of which the customs and language of the natives are almost identical with those of Old Calabar. There are two or three insignificant villages a few miles inland on the margin of the eastern bank.

The coast from this river inclines to the eastward for sixty miles, to the estuary of the old Calabar river; it is low, thickly wooded, and unattractive; and is thinly populated by a wild and savage race who have been denominated *Funimen*. The Rio Calbarine, or Old Calabar, is a large and noble stream, about ten miles broad at its

junction with the sea. Its earliest frequenters were the Dutch, who gave it the title of *Oude Calburgh*, but who soon ceased to visit it in consequence of the extreme unhealthiness of the anchorage near the towns. Two peninsular projections, termed *Tom Shots* and *Backassey*, or *East Head*, mark the respective terminal boundaries of the land on either side. The first, or western point, is in lat. $4^{\circ} 36' N.$ and long. $8^{\circ} 19' E.$ Effeat, or *Tom Shots* town, is a dirty and unimportant village, erected within a curve of the beach, and encompassed by mangrove woods which conceal it from view. Its inhabitants possess extensive fisheries, of which the chief products, a species of *silurus*, are smoked and cured in immense quantities for the remote markets of the interior. For forty miles this river presents one broad and continuous stream, until it arrives at an insular swamp, called *Parrot Isle*, where it separates into two navigable branches; the left, or largest one, named *Cross River*, flows for several hundred miles through a beautiful and fertile country, which has only recently been explored through the indefatigable exertions of Mr. Becroft. The second, or eastern branch, runs a brief course of forty or fifty miles, and abruptly terminates in a petty creek. On it are located those mercantile towns to which European traders resort.

After passing *Tom Shots Town*, the western bank of this river becomes more elevated. The strand here is formed of the friable particles disintegrated from a series of low sandstone cliffs, which are more or less hid from view by a foliaceous screen of young woodshoots. The higher portion of the land adjacent to *Parrot's Isle* has received the appellation of *Tobacco Head*, from a species of the *Nicotianum* having been discovered in a wild state growing thereon. The opposite, or *Backassey* shore, is a vast densely wooded, and swampy flat, intersected by four tributary streams that empty their water into the main trunk, viz. *Backassey*, *Little Backassey*, *Little Qua*, and *Qua Rivers*. The last of these, which is the one of the greatest magnitude, and most accessible, takes its source from the uplands north-east of *River Town*, where its banks, before entering the delta, are diversified by native farms and cultivated plantations,

to which the affluent inhabitants of Old Calabar retire for the restoration of their health in cases of sickness. One point connected with the medical topography of these regions is deserving of consideration. From the aperture of Qua River down to East Head, and for some leagues beyond the outer bar, the soundings are indicated by black, viscid, and alluvial mud, which projects over more than a third of the bed of the stream, the other two-thirds, as far as Tom Shots point, being composed of banks and patches of straw-coloured sand. This, similar to most of the embouchures of the rivers in the Bights, is not embellished by any picturesque or pleasing scenery, and the only signs of human habitations are a few dusky fishing villages, built on the verge of the forest, the abject and destitute condition of the natives of which are precisely the counterpart of their wretched domiciles. This river has been stated to be one of the radiating branches of the Quorra; this is, however, an error, since it has not the slightest communication with it.

Fishtown is an obscure village, populated by fishermen, and erected upon a headland six or seven miles above Qua River on the same side. This promontory has been distinguished by the name of Fishtown Point, and is one of the principal guides for the navigation of the shipping. In the centre of the river, nearly facing it, and about a mile distant, is Parrot Island, attired in the sombre livery of the Rhizophoræ, and, as its title implies, the haunt of the *Psittacus erythacus* (grey parrot), who congregate in immense flocks within its recesses to roost or rear their young.

[To be continued.]

ANALYTICAL EVIDENCE RESPECTING THE CHEMISTRY OF FOOD.

LIEBIG ascertained, by average calculations, that each soldier of the body-guard of the Grand Duke of Hesse Darmstadt consumed daily, among fourteen different articles, $1\frac{1}{2}\frac{5}{8}$ oz. of pork, $1\frac{1}{2}\frac{4}{8}$ oz. of sourkront $\frac{5}{8}\frac{5}{8}$ oz. of lard, and $\frac{1}{17}\frac{1}{10}$ pint of vinegar. The carbon of the various articles eaten amounted to more than double that of the fæces and urine taken together. "In the soldier the fæces amount daily, on an average, to $5\frac{1}{2}$ ounces; they contain 75 per cent. of water, and the dry residue contains 45.24 per cent. of carbon, and 13.15 per cent. of ashes. 100 parts of fresh fæces consequently contain 11.31 per cent. of carbon, very nearly

the same proportion as fresh meat. In the calculation, the carbon of the fæces and urine have been assumed (!) as equal to that of the green vegetables and of the food (sausages, butter, beer, &c.) consumed in the alehouse."—*Animal Chemistry*, 286, 289. There is no reason why, on the same principles, all kinds of food should not be represented by symbolic formulæ, and their equivalents calculated in the usual way. Modern chemistry, in its transcendental relations, appears to be fast tending to these important results. One gentleman has lately calculated the quantities of oxygen, hydrogen, nitrogen, and carbon contained in the body of a *dried mouse*! Another step, and we shall have the equivalent number.

CASE OF CALCULUS IN THE DUCT OF THE SUB-MAXILLARY GLAND.

MR. GRADY details the case of a lady, æt. 21, of strumous diathesis, who had been subject to a swelling under the left jaw bone since her childhood, which, however, attracted little notice, until her approach towards puberty, when the rapid increase of its growth occasioned alarm. She was at onetime suddenly seized with dysphagia and aphonia; her tongue became enormously swollen and painful, and she was obliged to sit up in bed for several nights, the dyspnoea was so urgent. She appears to have laboured under an attack of glossitis, but, in course of time, these symptoms were got under. Mr. Grady found, on the left side of the neck, a tumor, overshooting the ramus of the maxilla, about the size of a hen's egg, exceedingly prominent, oval, and well defined, and in front of this, a second, having its long axis transversely, and sensibly fluctuating. At first no indications of the lodgment of a calculus in the duct could be discovered; but, after the lapse of some time, the orifice of the left submaxillary duct was found swollen and redder than that on the right side. After several unsuccessful probings of the duct, a calculus was felt at a considerable distance from its orifice. It was removed by passing a silver sound through the duct to the calculus, and cutting down on it, commencing the incision half an inch behind the orifice of the duct, proceeding backwards and inwards towards the base of the tongue. It lay deep, and great difficulty was experienced in rooting it from its bed. It lay close to the gland, and caused excruciating pain in removing it. The second tumor now disappeared by the escape of muco-purulent fluid. A small lead bougie was left in the duct for several days, being occasionally removed to allow of the escape of accumulated saliva. In about three weeks, the submaxillary tumor had disappeared, the duct remaining in its natural pervious condition.—*Dublin Medical Press*.

MEDICAL GAZETTE.

FRIDAY, JULY 11, 1845.

It had been supposed by many that a further discussion on the Medical Reform Bill would have taken place in the House of Commons last Monday, July 7th. It appears, however, that Government merely announced what legislative measures it had the intention of carrying through, and what would be postponed until another session. From this announcement we learn that the Medical Bill occupies a sort of intermediate position. It is to be reprinted, *i. e.* there will be a fourth edition; and if its provisions should then be acceptable to the bodies whose conflicting interests have to be reconciled by this measure, it will be brought forward and passed during the present session. If, however, there should still be such a difference of opinion on the subject as to render a lengthened discussion probable, then it is the intention of Government to postpone it until the next session. It will, indeed, be a matter of surprise if, within the short period which now remains, such changes should be made in the measure as to render it satisfactory to the Universities, Colleges, and Practitioners of the three kingdoms. Nothing short of a miracle can, we think, lead to such a result, seeing the strong feeling which has been lately expressed against certain parts of the Bill by the influential Bodies of the profession. Should it be passed in this hurried manner, we may expect next year to have an act to amend and explain the Act; but the probability is, we still think, that it will be deferred.

WE have elsewhere printed the report of a trial which has recently taken

place in Dublin (p. 476). As there is, at the present time, much discussion concerning the maintenance of strict discipline, and the mode in which the respectability of the profession should be preserved, we think it right to call the attention of our readers to some of the facts elicited at this trial. An action was brought by the plaintiff, a member, as it was alleged, of the Royal College of Surgeons in England, against the defendant, the editor of a Dublin paper, for describing an advertisement on the treatment of "Stomach and Chest Diseases" as a "quack advertisement." Had not the plaintiff been what is called a "regular" practitioner,—had he not possessed a license to practise, there would, we apprehend, have been no ground of action; but to call a licensed physician or surgeon a quack, or to impute quackery to the practice of either, creates a fair ground of action, because the law presumes that it may impair or hurt the trade or livelihood of the individual. If a justification can be made out, the liability of the defendant ceases; but the result of the Dublin trial clearly shows that this is no easy matter. The possession of a license to practise, is allowed to cover conduct which, in an unlicensed practitioner, would, we think, have been by most persons designated by the term quackery. Indeed, we are quite unable to find any difference between this advertisement and hosts of others by unlicensed pretenders which find their way into our daily and weekly journals.

A member of the Royal College of Surgeons of England deliberately offers to send his "invaluable medicine to all parts, with ample directions, in packages (free) at 2s. 6d. on receipt of a post-office order, or reference in town for payment!" It is recommended, "not only as a cure for existing diseases of the vital organs, but as an

unfailing preventive that will arrest those colds that, neglected, produce bad coughs, inflammations, influenza, asthma, and consumption. Over this latter scourge in all its stages, this side of the actual grip of death, it exercises an immediate healing control." Such is a part of this extraordinary document, which we have now the authority of the Court of Queen's Bench in Ireland, under the charge of the Lord Chief Justice, for stating not to be a quack advertisement in one possessing a diploma, whatever it might have been considered, had it issued from an individual not possessed of a license to practise granted by a College or University.

A futile attempt was made, on the part of the defendant, to show that there was something like quackery—*i. e.* the pretence to cure incurable diseases, or diseases of various origin and seat, by one and the same *secret* remedy, about this advertisement; but with the Irish jury this attempt signally failed. Sir Herbert Marsh was called as a witness, and he actually went so far as to declare that it was "the *beau ideal* of a quack advertisement," he never "read one more perfectly so." (See p. 479). He thought there was no more truth in it than in "the Philosopher's stone;" and he was adventurous enough to state, that he did not think "confirmed consumption a curable disease, thereby strongly insinuating that this "invaluable medicine," capable of being sent to all parts in packages at 2s. 6d. was not likely to exercise "an immediate healing control over this scourge in all its stages this side the actual grip of death"! Will the profession agree with Sir Herbert Marsh, or with the jury, who have come to a diametrically opposite conclusion? By giving a verdict with damages and costs to the plaintiff, they have substantially decided that this was not a quack advertisement, that

Sir Herbert Marsh could know nothing about consumption, or what would cure it, and that the two-and-sixpenny packages may be lawfully sent all over the Queen's dominions, for the cure of an incurable disease, without let or hindrance! Further, their verdict leads to the inference, that any one is now liable to an action for libel with damages and costs, who ventures to apply an epithet to an advertisement issued by a "*regular*" practitioner, which might with reason and justice be applied to it if it came from one of the "*irregulars*."

The learned judge left it to the jury to decide upon the law as well as upon the facts; but it seems to us that they must have been in a state of complete mystification to have returned a verdict affirming that the livelihood of the plaintiff had been damaged to the extent of forty shillings! Juries are always very doubtful interpreters of the law, and we believe that it is not much the custom on this side of the Channel to leave the law in their hands in these cases, without some particular directions on the professional merits of the question at issue. Let us suppose that an advertisement referred to the restoration of an amputated limb, by rubbing the stump with an "invaluable" embrocation which the advertiser had discovered, and that an eminent surgeon had been bold enough to pronounce this the *beau ideal* of quackery, because it pretended to do what was impossible,—is it to be left to an uninformed jury to debate among themselves whether legs can be restored by embrocations, and to give damages and costs against any one who had used an expression to imply that they could not be thus replaced? If so, this is a most extraordinary method of dispensing what is called "justice." It appears to us, that in such a case a jury should be told, a quack advertisement

is one which professes that the party can work impossibilities, or cure incurable diseases by secret remedies : you have heard from an eminent professional man that legs cannot be restored by the use of this or any embrocation to the stump : a libel is a malicious defamation of any person made public by printing : it is left to you to consider whether there can be any malicious defamation in this case, or whether the defendant has not fully justified his conduct ?

We quite agree with the counsel for the defendant, that the real question at issue was, whether this was a quack advertisement or not ? The jury, however, appear to have returned their verdict on the ground that the plaintiff had suffered damage in his professional capacity. This may well have been ; and we had innocently supposed that there were cases recognized by law in which plaintiffs were nonsuited on such occasions, because it was supposed that the damage inflicted was no greater than their unprofessional conduct merited. We now, however, learn from this verdict, that truth indeed is a libel in its worst sense, and that the question in such a case is, what damage the individual has sustained, and not whether the language for which the action is brought was justly applied or not.

The result of this trial has, however, removed one difficulty which has been so much debated in reference to the Physic and Surgery Bill,—namely, the definition of the term “quackery.” This verdict has settled that the term cannot be applied to the dealings of men, who have a *legal* right to practise. Quackery, therefore, is a term, which henceforth can only be safely employed in speaking of the *unlicensed*, *i. e.* if the law as laid down by the Irish Court of Queen’s Bench is to prevail. The definition, however, appears to us to be more simple than satisfactory.

It is a serious question, whether, in a case like this, the College of Surgeons is not called upon to interfere. They objected to make a fair proportion of their members Fellows, because there were among them “venders of quack nostrums, and writers of indecent advertisements,” &c. The diploma of the College, or a legal substitute for it, enabled the plaintiff in the case referred to, to bring his action. Without it, he might have had no *locus standi* in Court. Further, it appears that he had been, as stated by his counsel, “for upwards of twelve months in the habit of publishing advertisements of a similar character, and if anything professing and promising more largely.” With this statement of the facts, we shall now print the Rules of the Royal College of Surgeons of England with respect to the

MISCONDUCT OF MEMBERS.

1. No member of the College shall *advertise a secret method or process of cure relating to his practice as a surgeon* ; or put forth or publish, in whatever way, *any indecent advertisement or notification relating to the said practice* : and any member of the College, who may in any manner offend herein, shall be liable to removal by the Council from being a member of the College ; and every member of the College, who shall thereupon be removed as aforesaid, shall forfeit all his rights and privileges as a member thereof.

2. No member of the College shall *advertise or publish any matter or thing prejudicial to the interest or derogatory to the honour of the College, or disgraceful to the profession of surgery* ; and any member of the College, who may in any manner offend herein, shall be liable to removal by the Council from being a member of the College : and every member of the College who shall thereupon be removed as aforesaid, shall forfeit all his rights and privileges as a member thereof.

3. Should a member of the College render himself in the judgment of the Council disgraceful to the College, his name *may be omitted* in the printed lists of the members thereof.

The Irish jury had to decide whe-

ther the plaintiff had sustained any damage,—whether, in the terms of the law, his trade or livelihood had been impaired or hurt by the conduct of the defendant. The College of Surgeons is differently situated. Unless the rules are to be regarded as mere *brutum fulmen*, its duty is to inquire whether *this* is not to be regarded as an indecent advertisement or notification relating to practice,—whether the contents of this advertisement do or do not contain “any matter or thing prejudicial to the interests or derogatory to the honour of the College or disgraceful to the profession of Surgery.” The questions are very simple, and we think that the College has fair ground to institute an inquiry; and if necessary it is bound to exercise the power of removal which it professes to hold for the benefit of the profession.

Reviews.

A History of Infusoria, Living and Fossil, arranged according to “Die Infusionsthierchen” of C. G. Ehrenberg. By ANDREW PRITCHARD, M.R.I. Whittaker and Co. London, 1845. 8vo. pp. 439.

THE researches of Ehrenberg and his followers have opened to the naturalist a vast field for the most interesting inquiry, and to the moral philosopher a grand subject for admiring contemplation, in a department of nature which the sages of past generations would have considered entirely beyond or below the reach of human perception. There are some who, in ignorance of its uses, argue that but little valuable result can be derived from microscopical observation; but even these persons must acknowledge its value when they are told that it has disclosed to our view a new world of complicated living beings which exist everywhere around us in incalculable myriads;—that “in the clearest waters, and also in the troubled, strongly acid, and salt fluids of the various zones of the earth; in springs, rivers, lakes, and seas; in the internal moisture of living plants and animal bodies, and probably, at

times, carried about in the vapour and dust of the whole atmosphere of the earth, exists a world, by the common senses of mankind unperceived, of very minute living beings, which have been called, for the last seventy years, *INFUSORIA*.”

The particular shades of many large bodies of water, and of the ocean itself, are often imparted by hosts of these minute creatures. The aggregation of masses formed by their innumerable remains is shewn to be one of the chief causes of the deposits of mud which obstruct harbours, and in the course of years narrow the beds of rivers. Their siliceous shells, almost entirely unmixed with any other substance, are known to form the coverings of certain plains many miles in extent, affording a material which has been usefully employed in the arts; and lastly, the greater bulk of many calcareous and siliceous rocks—the uses of which in the œconomy of creation are apparent to all—are now understood to be principally formed of the consolidated remains of multitudes of these creatures which existed previously to the deluge. And here late discovery has revealed a most beautiful and striking fact—as illustrating the unity of the divine plan in the formation of living creatures—for, mingled with the relics of many animals, of what we are accustomed to term far “higher organization,” every individual species of which has, for ages, ceased to exist, are found parts of infusoria, which, in every particular, correspond exactly with those which, at present, inhabit our lakes and seas: proving that these, at first sight, unimportant animals, are, in all probability, the most ancient race of creatures upon our globe—an impressive lesson to human pride!

This subject would not come exactly within our province as medical reviewers, were it not that the existence of infusoria, not only in many alimentary substances, but also in some of the secretions of the body, renders the discovery of every new fact regarding them of great interest to the profession, and it appears to be by no means improbable that, as knowledge upon this point advances, its importance,—especially with regard to pathology,—may be greatly increased. Let it but once be proved that, under one diseased condition of the secretions or excretions of

the body, certain peculiar kinds of infusoria are uniformly generated in the discharged fluids; and that, in another form, other different species, as constantly make their appearance, and a new and remarkable field for inquiry will at once be opened. This suggestion is, of course, merely hypothetical; but, we submit, it should not be entirely disregarded.

The chief part of Mr. Pritchard's work consists of minute descriptions of 780 living and fossil species of infusorial animals; these details are illustrated by more than 500 beautifully engraved figures. A large number of the descriptions are from the writings of Ehrenberg and other authorities, but a great many record the author's own discoveries; and the whole work is written in a style which proves that Mr. Pritchard is very conversant with his subject.

We shall make a few extracts, regretting that we cannot avail ourselves of more. The following are some of the conclusions given in Dr. Ehrenberg's summary of the subject.

"1. All the infusoria are organized, and the greater part of them (probably all) are *highly* organized bodies.

"2. The infusoria constitute two very natural classes of animals, according to their structure, which classes admit of subdivision upon the same principle.

"3. The existence of the infusoria in the four quarters of the globe, and the sea, is proved; as also that of individuals of the same species in the most opposite ends of the world.

"4. The geographical distribution of the infusoria upon the earth follows the laws observed regulating that of other natural bodies.

"5. Most of the infusoria are invisible to the naked eye; many are visible as moving points; and the size of the body does not exceed, in any case, the $\frac{1}{12}$ th of an inch.

"6. The minute invisible infusoria, in consequence of their immense and swarming numbers, colour large tracts of water with very remarkable hues.

"7. They give rise to one kind of phosphorescence of the sea, though, in themselves, invisible.

"8. They compose (though singly divisible) a sort of mould, through living in dense and crowded masses.

"9. In a cubic inch of this mould,

more than 41,000 millions of single animals exist, and constitute, most likely, the chief proportion of living bodies upon the face of the earth.

"10. The infusoria are the most reproductive of organised bodies.

"11. From one of the known propagative modes of the infusoria—that is, of self-division—a continual destruction, beyond all idea, of the individual, and a similar interminable preservation and extension of it, in air and water, ensues, which, partially, borders upon eternal life and growth.

"12. The copulation of gemmæ, which perhaps includes the hitherto unsolved poly-embryonate riddle of the seeds of all plants and vegetable formations, is solved in the family Closterina.

"13. The infusoria, in consequence of their siliceous shells, form indestructible earths, stone, and rocky masses.

"14. With lime and soda we can prepare glass, and swimming bricks out of invisible animalcules; use them as flints; probably prepare iron from them, and use the *mountain meal*, composed of them, as food in hunger.

"15. The invisible infusoria are sometimes hurtful, by causing the death of fish in ponds, deterioration of clean water, and boggy smells, but not, as has been supposed, in giving rise to malaria, plague, and other maladies.

"16. The infusoria form invisible intestinal worms in many animals, and in man, even if the spermatozoa are excluded from amongst them.

"19. The invisible infusoria have also *live and intestinal worms* themselves.

"20. The infusoria possess a comparatively long life.

"21. As the pollen of the pine falls yearly from the clouds, in the form of *sulphur rain*, so do the much smaller animalcules appear (from being passively elevated with the watery vapour) floating in a live state in the atmosphere, and sometimes, perhaps, mixed with dust.

"22. In general the infusoria maintain themselves pretty uniformly against all external influence, as do larger organized bodies. It is true that they sometimes consume strong poisons without *immediate injury*, but not without an after effect.

"25. Linnæus said, *omnis calx e vermibus*:—either to maintain or deny *omnis silex omne ferrum e vermibus*, would be, at the present moment unjust.

"26. The direct observations as yet known upon the theory of *generatio primitiva* are wanting in necessary strictness. Those observers who profess to have seen the sudden origin of the minutest infusoria from elementary substances, have quite overlooked the compound structure of these organic bodies."

Mr. Pritchard says, that "since the time of their discovery (1676) up to the present period, all we know of the *true* spermatozoa of animals is that they are not distinguishable from the *Cercaria* found in the liver of snails, the animal organization of which has been made out by Bauer, Wagner, and Ehrenberg." p. 22. But this is a very narrow statement of the subject;—surely every physiologist knows many facts respecting the spermatozoa beside that of their similarity to the *Cercaria*. Some very interesting particulars are given with respect to the spermatozoa of plants. The "*Spirillum (bryozoon)*. *The moss Spirillum*.—Its coils consist of a thick body with a delicate wavy hair-like proboscis. These creatures, found in the reproductive organs of plants, are called by their discoverer, Dr. Unger, of Gratz, spermatic animalcules." The following condensed view of the subject is translated from Dr. Meyen's *Jahresbericht*. "The spermatic animalcules in *Sphagnum* consist, according to the earlier observations of Unger, of a thick body, and a thin filiform tail. In motion, this tail being anterior, he holds it to be analogous to the proboscis of many of the infusoria. No true active motion of the body itself has been observed by Unger; but he distinguishes between the mere locomotive and rotatory movements of the whole animalcule. The simplest motion takes place in a spiral direction, and, if the proboscis is contracted, the movement is simply rotatory. Unger endeavours to shew that the spermatic animalcules of the mosses are analogous to the spermatic animalcules of animal organisms, although we find certain things in the former, not seen in the latter, and which may somewhat embarrass their classification, the chief of which are the steadiness of the

spiral direction of the proboscis, and their manner of movement. Lately, Unger has found spermatic animalcules in the anthers of *Polytrichum juniperum*, *P. commune*, *P. urnigerum*, and *P. alpestre*, as well as in other plants specified. In *Polytrichum commune*, the animalcules were found in very small hexædral cells with rounded corners." p. 138. Many further particulars are given with reference to this interesting subject.

We believe that, in publishing this work, Mr. Pritchard will add much to his reputation as a scientific observer:—he has certainly conferred a benefit upon all who are interested in Natural History.

Letters on the Unhealthy Condition of the Lower Class of Dwellings, &c.
By the Rev. CHARLES GIRDLESTONE,
A.M. Rector of Alderley. London,
1845. 8vo. pp. 92. Longman & Co.

THE object of the author of these Letters is to bring before the public and profession, in a concise form, the substance of the various Reports which have been presented to Parliament on the sanitary condition of the labouring population. Members of the medical profession are deeply interested in these inquiries, for the truth is now beginning to be appreciated, that prevention is better than cure; and it is highly creditable to them that they have assisted in collecting many facts which shew the necessity for improved drainage and ventilation, in order that the fearful annual mortality from zymotic diseases may be reduced. As the author justly remarks in his preface:—

"There is a wide distinction between those disorders and diseases which are entailed on us by the infirmity of our nature, the unavoidable penalty of our fall and sin, and those which, by our personal and joint neglect, we wantonly draw down upon ourselves, or on the community of which we are members."

The one class we must meet with resignation, but the toleration of the other is a simple acquiescence in suicide. The number of lives annually lost in England and Wales by mere neglect and want of sanitary regulations is enormous. It has been aptly compared to the yearly destruction of a large and populous city—as if places

like York or Durham, for example, were, with the whole of their inhabitants, annually swept away and blotted from the map of England! This unnecessary mortality is none the less for being the more diffused; but, unfortunately, this diffusion blinds the eyes of the survivors to the real extent of the evil, and renders them indifferent concerning the application of remedies.

It is not to be supposed that medical men can find the time necessary for wading through the bulky Parliamentary Reports on these subjects, covering as they do many thousands of pages; and those who have had the courage to attempt it are well aware, that from their being so voluminous, it is difficult for a reader to find exactly what he wishes. We can only express our surprise that the task of condensation should have been left to be undertaken by a clergyman of the Church of England; but, from the manner in which it has been accomplished, we do not think it could have fallen into better hands, or that it could have been better performed. In the space of 92 octavo pages, we have the substance of six Parliamentary Reports, brought down to 1845. The Letters embrace the subjects of "Drainage and Sewerage," "Supply of Water," "Riddance of Refuse," "Ventilation," "Local Unhealthy Influences," "Decoralization," and the "Application of Remedies." It is not necessary to point out to our readers the importance of these subjects in reference to the sanitary condition of the labouring population, or to shew how materially the spread of disease may be diminished, and the comforts of the lower classes increased, by well-directed efforts for the removal of evils which have here proved to exist. In a note attached to the preface it is well observed:—

"We endeavour to civilise distant people by winning their confidence, by striving to develop the better qualities of their nature, by promoting intercourse with them, and making them live to its benefits: the same measures are needed at home, where the moral and intellectual extremes of society are as far asunder, as if separated by untrodden deserts or untried seas. This mental remoteness and local proximity cannot long co-exist without change; a great community is never

stationary; there is always a tendency upwards or downwards, according as the few above or the many below exercise influence; while, independent of the movement of the general body, there are ever some individuals sinking, and happily more—successfully struggling to rise."

We can strongly recommend this pamphlet to those of our readers who are interested in inquiries which are connected with the origin of disease, as well as its suppression by hygienic rules. The author has acted wisely in fixing the price of the pamphlet so low as to place it even within the reach of those classes for whose benefit it has been written.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Tuesday, June 24th, 1845.

DR. CHAMBERS, PRESIDENT, IN THE CHAIR.

On the Frequency, and on some of the Causes of Pericarditis, with incidental observations on the frequency, and on some of the causes of various other internal inflammations. By JOHN TAYLOR, M.D. Professor of Clinical Medicine in University College, and Physician to University College Hospital.

Frequency of Pericarditis.—The author has found one case of severe pericarditis, as distinguished from the very slight forms of the disease, to occur in about every eighty of the physicians' cases in University College Hospital.

Pericarditis was four times as frequent in the fatal cases as in all others taken indiscriminately, for it was found sixteen times in the bodies of 355 patients, in all of which the heart was examined; old adhesions of the pericardium were found in one out of every sixteen bodies, and white spots or patches in one out of every four bodies.

Causes of Pericarditis.—The causes were examined in thirty-five cases of the more severe forms of the disease; nearly two thirds occurred in the progress of acute rheumatism, and nearly one third in connexion with Bright's disease. Besides these causes, the author has found the following only, viz. extension of inflammation from the pleura in one case, and from the liver and diaphragm in another. A third case occurred in connexion with cyanosis and malformation of the heart.

Nearly all the cases occurring in persons previously in good health were found to be associated with acute rheumatism, whereas nearly all those occurring in persons in bad health were complicated with Bright's disease.

The author has observed some form of morbus cordis in about half the cases of acute rheumatism which he has treated in University College Hospital. Pericarditis of considerable severity occurred in about one in twelve cases, which proportion is nearly the same as that found by various writers, with whose observations a comparison could be made.

Valvular Disease was found in about half the cases of rheumatism. This amount is nearly the same as that observed by various authors, but most writers state, or imply, that these cases were examples of *recent endocarditis*, and consequently they make endocarditis to be very much more frequent than pericarditis in rheumatism. The author of the present paper is uncertain how many of his cases of valvular disease were recent. He believes that the diagnosis between acute endocarditis and old valvular disease in acute rheumatism, is in many cases impossible, and in a large proportion doubtful. He has found signs of valvular disease which he supposes to be of old standing, in all physicians' cases taken indiscriminately, in a proportion so nearly approaching to that found in cases of rheumatism, that he considers the greater number of cases of valvular disease found in rheumatism to be of old standing, and that the frequency of acute endocarditis has been over-rated, and perhaps does not much if at all exceed that of pericarditis.

With respect to the circumstances under which cardiac inflammation appeared in rheumatism, the author found that metastasis occurred in none of his cases—the rheumatism was of the *fibrous* variety, as distinguished from the capsular, in every instance; pericarditis was not more frequent, but it was more intense and more fatal in severe than in mild cases of rheumatic fever. The heart was more frequently affected in the early stage of this disease in young subjects, and in a first attack, than in the opposite circumstances. Venesection had nothing to do with the production of inflammation of the heart in any case. Some writers appear to think that pericarditis hardly ever occurs except in connexion with rheumatism; others believe that the causes are in many cases unknown. The author has found a satisfactory cause in every case, and he believes that the two grand causes are acute rheumatism and Bright's disease. Both these appear to produce inflammation of the heart and of other organs in the same way

ultimately, viz. by a morbid state of the blood; we may expect therefore to find pericarditis in connexion with other blood diseases, such as the eruptive fevers, typhus, erysipelas, &c. Instances of this kind are recorded, but the only case belonging to this class seen by the author was one of pericarditis with *cyanosis*.

Pericarditis has long been known to occur occasionally as one of the secondary inflammations produced by Bright's disease; but the frequency with which it is met in these circumstances appears not to have been hitherto suspected. The author believes that Bright's disease in its advanced stage has as great a tendency to produce inflammation of the heart as acute rheumatism has. It is true that acute rheumatism was more frequently the cause of the pericarditis in his cases than Bright's disease, but this may be due to the greater frequency of rheumatism than of Bright's disease. From a comparative examination of fifty bodies in which advanced disease of the kidney was found, and of 142 bodies in which there was no disease of the kidney, the author found that acute pericarditis was met with in one in ten of the former, and in one in thirty-five of the latter class, and that acute endocarditis was met with in one in twelve of the former, but only in one in seventy-one of the latter. Hence it appears that inflammation of the heart was much more common in cases with, than in those without renal disease; and also that acute pericarditis was met with as often in cases of advanced Bright's disease, as in cases of acute rheumatism.

Account of a Case of External and Internal Cephalhæmatoma complicated with Fracture of the Right Parietal Bone, in a Newly-born Infant. By CHAS. WEST, M.D.

The author details in this paper the history of a child aged sixteen days, on whose right parietal bone there existed a swelling presenting the ordinary characters of sanguineous tumor of the cranium, or cephalhæmatoma. This tumor had appeared on the third day after birth, and had progressively increased; the child's health, however, continued undisturbed. Slips of plaster were applied so as slightly to compress the tumor, which, under this treatment, ceased to enlarge. The child continued quite well until the eighth day after this treatment had been commenced, no alteration having been made during this time in the plaster originally applied. At the end of this time, without any apparent cause, she was attacked with vomiting, and convulsive twitchings of the muscles of the face. On the ninth day, general convulsions occurred, which returned early on the tenth,

when they proved fatal, the child being twenty-six days old at death.

The tumor on the exterior of the skull presented the ordinary characters of external cephalhæmatoma. The author, in describing it, takes occasion to make some remarks on the nature of the hard ring which surrounds these tumors. He mentions the existence of a fissure in the parietal bone, and of a large collection of blood internally, betwixt the dura mater and the skull, in a situation nearly corresponding to that of the external tumor. He gives a minute description of this effusion, and calls especial attention to the reparative process which was going on at the time of the infant's death, consisting partly in the heaping up of bone around the tumor, and partly in the deposit of bony matter between the two layers of the dura mater.

The author next assigns reasons for believing the fissure of the parietal bone to have occurred during labour, and not to have been produced by injury after birth. He likewise inclines to the opinion that the internal effusion was not the result of the escape of blood effused originally on the surface of the cranium, through the fissure into its interior, but thinks it most probable that it took place at the same time as the external effusion, and from similar causes.

The variety of recorded cases of internal cephalhæmatoma, of which only eight have been described, and particularly the fact that no other instance has been related in which the process of cure of internal cephalhæmatoma has been observed, are the reasons which have induced the author to present this case.

The paper is concluded by some remarks on affections of this kind, suggested by the peculiar features of the case he has detailed.

Case of Pytyriasis Nigra. By Mr. TEEVAN.

THIS case occurred in the practice of Mr. Teevan. The patient, a young lady from the neighbourhood of Belfast, was otherwise healthy. The disease having baffled the skill of the Belfast physicians, the patient was brought to London, where her father consulted Dr. Chambers, and other medical men, and finally placed her under the care of Mr. Teevan, by whom she was on more than one occasion carefully watched, as he anticipated that the case was one of imposture. Reiterated investigation, however, convinced him to the contrary. The disease commenced by tension and irritation of the brow and eyelids, which lasted for about ten minutes, and then there ensued an exudation of a blackish fluid, which gave these parts the appearance of having been smeared with Indian ink. This secretion was removable by washing with sponge and water, and

was renewed in the course of eight hours. The disease finally disappeared. The treatment employed was merely palliative.

Dr. MAYO made inquiries with reference to the catamenia, and whether they were regular before the disease made its appearance.

Mr. TEEVAN had been informed that the patient was regular as to menstruation previous to the appearance of the disease, but that the discharge only continued for one or two days. The mother had also informed him that the discharge itself was healthy character.

Dr. CHAMBERS had seen the patient only on one or two occasions. The appearance at first was that of a person who had been under the care of an oculist, and had had extract of belladonna smeared over her eyelids and forehead. On looking at the surface, however, through a microscope, it was found not to be homogeneous, but it was apparently broken into minute granules, in most respects resembling miniature ichthyosis. All suspicions of imposture, which he had at first entertained, were banished on the observance of this peculiarity.

Dr. MAYO, having regard for the remarkable freaks occasionally played by nature, suggested that the appearances might be the result, in some way, of vicarious menstruation.

Dr. CHAMBERS said, that Bateman had seen no case similar to the one under discussion, but had made reference to one detailed by Wilson. In this case, however, the disease differed from the one under discussion, inasmuch as it occurred only in children coming from the West Indies, and it was confined to the extremities.

Dr. C. J. B. WILLIAMS would be glad to know whence the exudation proceeded; was it from the sweat-glands, sebaceous follicles, or from whence? It scarcely resembled a modified condition of the skin, or ichthyosis, but bore some resemblance to sebaceous secretion in other parts of the system. In colour it was similar to the black pigment of the eye, and to the fluid of melanotic tumors.

Mr. TEEVAN could not determine from whence the exudation proceeded. On first appearing it resembled somewhat the black colour of the eyelids observed in chlorotic girls. It, however, was moist, and was easily removed by ablution.

Dr. CHAMBERS, in examining the exudation with a lens, had found it to consist of a thin lamina of black matter, which, having become dry, had cracked. He did not think it had been exuded from the sebaceous glands. The skin, after the black matter had been removed, was unspotted. The

girl's appearance when the eruption was not out was healthy and good looking.

Dr. GREGORY inquired whether any local application had been used to the parts affected, and if so with what result? Had any acid, alkaline, or nitrate of silver wash been applied?

Mr. TEEVAN had employed nitrate of silver with oak bark decoction, without any effect on the disease. In answer to a question from Dr. Chambers, Mr. Teevan further stated, that the skin after ablation was quite healthy. It had been examined by Dr. A. T. Thomson, Dr. Hodgkin, and himself, and they could detect no change in it. The exudation was easily removed by oil, or soap and water. The appearance of black matter on the face was preceded by irritation, pain, and tension. The skin, from the frequent removal of the exudation, had become tender.

Mr. TOYNBEE said, it appeared from the examination of the secretion by means of the microscope, that it was composed of sebaceous matter and pigmentum nigrum. Mr. T. had had opportunities of examining small round jet-black masses developed upon the skin, and he had distinctly ascertained them to be made up of black pigment, granules, and sebaceous matter.

Dr. CHAMBERS said, that the black matter in the follicles of the face in acne punctata were often thought to be particles of dust, but it was also found in the follicles of the intestines.

Mr. TOYNBEE said, in favour of the opinion that the black matter in these cases was composed of pigmentum nigrum, and not of extraneous matter, it might be stated that the colouring granules were of a uniform size and shape.

The Society then adjourned until November next.

Medical Trials and Inquests.

WHAT IS A QUACK ADVERTISEMENT?

LIBEL.

Michael Larkin *v.* Charles Duffy, Editor of the *Nation* Newspaper.

THIS cause was tried, before the Lord Chief Justice, in the Court of Queen's Bench, Dublin, on the 17th of June last. The damages were laid at £500.

The plaintiff's counsel stated the complaint to be, that the defendant, Mr. Charles Gavin Duffy, had published a libel upon him, in his character as a professional medical gentleman, charging him, in substance, with being a quack practitioner; and he (Mr. Hatchell) thought he need scarcely tell the

jury that such a charge was pregnant with mischievous consequences to gentlemen belonging to the profession in which Mr. Larkin practised. In the *Nation* of the 22nd of February last, a paragraph appeared, in "Answers to Correspondents," which was to the following effect:—"Our readers probably know so much of the mechanical arrangement of a newspaper as to be aware that one side of it is printed before the other goes to press, and that errors are in this way frequently corrected in the same number that contains them. In the first side of our present number, we observe, with great regret, that a quack advertisement from Surgeon Larkin has crept in, which would have been excluded if it had met the editor's eye before the first side was printed off." That paragraph referred to an advertisement appearing in another side of the same paper, which had been sent by Dr. Larkin to the *Nation* newspaper, and the insertion of which had been paid for. The learned counsel then proceeded to state that the plaintiff, who was a licentiate of the Royal College of Surgeons of London, and also of the Apothecaries' Hall of Dublin, originally practised in the town of Tullamore, but subsequently resided at Dublin; and in the year 1832, when the cholera raged, his exertions for the relief of those who suffered from that malady were so strenuous as to break down his own health, in consequence of which he went to France, and spent some years there. During that period he discovered, by diligence and study, a medicine which relieved his own sufferings; and upon his return to Ireland, in the year 1840, he determined to give the public the benefit of a medicine which he had found by experience to be valuable. The learned counsel, in continuation, stated that the plaintiff came to reside in Denzille Street, in this city; and in order to make known to the public the value of his medicine, published advertisements announcing its qualities in the *Nation* and other newspapers, during the space of twelve months previous to the time when the paragraph complained of was published in the *Nation*. The following was the advertisement published by Dr. Larkin, to which it had reference:—

"STOMACH AND CHEST DISEASES.—Friends in town and country have represented to Surgeon Larkin that many recoveries from appalling stomach, liver, bowel, asthma, and consumptive diseases, published in the *Nation*, though on particular request, were not calculated to advance his interest. These considerations he now casts to the winds when opposing his duty to afflicted humanity. These generous impulses arise no doubt from their hopeless recoveries; and as a guide to others, these being strictly privileged, have been shown to gentlemen in

the *Nation* office, to remove all doubt. On the earnest recommendation of philanthropic clergymen, of all persuasions, his patients, he will in future send this invaluable medicine to all parts, with ample directions, in packages (free) at 2s. 6d. on receipt of post-office order, or reference in town for payment; that all families, however healthy, may have one or more packages of this happy medicine, which will keep good for years, suited to infancy and the most delicate female constitution, not only as a cure for existing diseases of the vital organs, but as an unailing preventive that will arrest those colds that, neglected, produce bad coughs, inflammations, influenza, asthma, and consumption. Over this latter scourge in all its stages, this side of the actual grip of death, it exercises an immediate healing control, inspiring hope that astounds both friends and patients; as also over asthma and burning anguish of stomach, and other abdominal viscera. To the respectable non-medical public, it appears a mystery that a modification of the same medicine can equally cure diseases of the chest as the abdomen; but with the faculty there is no difficulty, who know not only the intimate connection, but the sympathy that exists between these vital organs, especially in diseases. Mr. Larkin has been called to see many appalling cases of dropsy, even among the wealthy, proceeding from organic diseases of these all-important organs improperly treated."

The learned counsel dwelt upon the injurious effect which a paragraph styling the above a "quack advertisement," thereby meaning that it was a "humbug," an imposition, was calculated to work against the plaintiff, it being in fact condemnatory of his character as a medical practitioner for the rest of his life; and proceeded to say, it was utterly inexplicable to him that the paragraph complained of should have been brought out on the occasion of a particular advertisement, after advertisements of a similar character, and, if anything, professing and promising more largely, having been published in the *Nation* newspaper for upwards of twelve months before. When such was the fact, what justness was there in the conduct of the defendant in putting forward the present publication, and by it declaring the above advertisement to be a quack? The learned counsel referred to an advertisement of the plaintiff published in the *Nation* newspaper in July 1844, which was in the nature of a letter to the editor, and having submitted it to the jury as a publication similar to that which was termed a quack advertisement in the libel, proceeded to ask why was it not disapproved of by the editor, and refused. Having read other like advertisements of the plaintiff published in the *Nation* antecedently to the one at present in question,

he stated that he should produce several persons who had been relieved of dangerous maladies under which they had laboured by the medicines of the plaintiff, and that if he should satisfy them that it was not, neither had been treated by the public as a "quack" medicine, they should find a verdict for the plaintiff, and give him such damages as would compensate him for the injury he had suffered by the libel.

The plaintiff's original diploma as a licentiate of the Royal College of Surgeons in London could not be obtained; but a certificate of the above College was given as evidence of the plaintiff's qualifications.

Dr. George M. Mc Cormack of Usher's Island, proved the signature of the secretary of the Royal College of Surgeons of England to be attached to the above mentioned certificate, which was handed to him; the name was Edmund Balfour.

Cross-examined by Mr. Fitzgerald—Was a licentiate of the Royal College of Surgeons of England himself. Witness had heard of a disease called scirrhus of the stomach; also knew of a disease called asthma.

Mr. Fitzgerald—Tell me, doctor, did you ever hear of a disease called "broiling anguish of the abdominal viscera?" (laughter).

Witness—I might have heard a disease so described.

Mr. Fitzgerald—Do you know of another disease called "burning disease of the stomach?"

Witness—I have heard persons say they laboured under such a thing.

Mr. Fitzgerald—Did you ever know in the whole course of your practice all these diseases affecting different parts of the human body at the same time, and when the patient was almost in the grip of death, cured by a pill valued at two-and-sixpence?

Witness—No; I don't think it possible.

Mr. Fitzgerald read the advertisement setting forth the cures which would be effected by the medicines, and asked the witness would he consider it a quack advertisement.

Witness—I don't know what else I could call it.

Re-examined by Mr. O'Hea—It was by reason of diseases being represented in the advertisement as having been cured by the medicine that he (witness) believed to be incurable, that he held it to be a quack advertisement; considered burning "disease of the stomach" a curable disease, but did not consider consumption curable; never saw a case which he pronounced to be consumption cured by any man.

Mr. O'Hea—Did you ever hear of dyspeptic consumption?

Witness—What I consider to be consumption is described as "tubercular consumption." Dyspeptic consumption might be

cured. The same medicine that would cure "burning disease of the stomach" would cure consumption arising from dyspepsia.

Mr. O'Hagan, on the part of the defendant, stated that he did not consider the certificate produced by the counsel for the plaintiff to be evidence that he was a licentiate of the English College.

Charles H. Leet proved that the plaintiff was a licentiate of the Apothecaries' Hall, of Dublin.

William Rudkin examined by Mr. O'Hea—I am a druggist; I know the plaintiff; he has been in the habit of trading with me for medicines; the medicines he purchased were always of the purest and most genuine description; my customer, Surgeon Larkin, is the person alluded to in the paragraph complained of; a quack advertisement I consider to be "an impudent attempt by an unqualified person to impose on the public;" I consider the paragraph calculated to injure the plaintiff.

Cross-examined by Mr. O'Hagan—If a qualified medical practitioner advertised a "universal nostrum" I would consider him to be worse than a quack.

Thomas Joyce examined by Mr. M. J. Martyn—I was under the care of the plaintiff last October; when I was brought to him I was hardly able to walk; I'd be dead only for Dr. Larkin, and that settles the whole of it (great laughter)—I had a cough for twenty years, and I took all sorts of herbs and all sorts of syrups that could be got (renewed laughter); yez may laugh, but I know my own story well, and the breathing was very bad, my lord.

Mr. Martyn—Well don't mind the history, but answer my questions. You had been suffering for years, had you not? Oh, many years.

And previously to your applying to Dr. Larkin you were under the care of other medical gentlemen? Oh, many a one; they used to examine me and give me a bottle (laughter).

The Chief Justice—Did you derive much benefit from Dr. Larkin?

Witness—I did; in three days after I began to take his medicine I was better and able to walk.

Cross-examined by Mr. Fitzgerald—Between all the doctors, I was made like a gridiron (laughter).

Was it the flat or the round pills that cured you? Both of them.

What did you pay for them?—Whatever he asked me for them.

Oh, but how much? Ten shillings I gave him; for the space of four or five years I was going from one doctor to another, taking a regular course round about (laughter)—and altogether I took bucketfuls of physic (renewed laughter).

Other witnesses, principally persons in humble stations of life, but not labourers, were examined for the plaintiff, and deposed that they had suffered from diseases of the thorax and stomach, and had obtained relief by using the medicine of the plaintiff. They were for the most part feeble in personal appearance. One of the number, in reply to Mr. O'Hagan, deposed that by the advice of the plaintiff, in addition to taking his pills, he drank new milk, ate mutton chops, and took exercise (laughter).

The case for the plaintiff closed after the examination of these witnesses terminated.

Mr. O'Hagan then addressed the court on behalf of the defendant in a lengthened and eloquent speech, in which he contended that the advertisement in question was a quack advertisement, inasmuch as it promised to perform impossibilities, and was calculated to delude the ignorant into the belief of these professions; and affirmed that he would prove this to be the case by the evidence of eminent members of the medical faculty, so that the pleas of justification would be substantiated, and the jury would be bound to find a verdict for the defendant."

John L'Estrange examined—(A box of Surgeon Larkin's pills put into the hands of the witness) I purchased this box from Surgeon Larkin for 2s. 6d.; I brought the pills it contained to Mr. Drinan.

"Mr. William Drinan was sworn, and proved that the pills which he received from the last witness were given to Professor Kane for analysis.

"Professor Kane examined by Mr. Fitzgerald—I heard the evidence of the last witness; Mr. Drinan called on me with two packages of round and flat pills; I subjected some of each to examination; I could not detect in either of them any material that could be capable of exercising any medical action; I believe that the mass of which they were composed consisted of bread.

"Cross-examined by Mr. O'Hea—I cannot undertake to say that they did not contain anything but bread; I could not swear to the absence of digitalis, or fox-glove, in the pills, because it is one of a class of very active medicines not capable of being detected if used in composition in small quantities; in such a case it is not possible to detect them, because they are destroyed by the operation of analysis, and therefore I cannot undertake to swear there is no active principle in the pills I analysed.

Sir H. Marsh, Bart. examined by Mr. Fitzgerald—The learned counsel read the advertisement, and said to the witness—"Do you believe the statements in that advertisement to be true?"

Witness—No; not in the least.

Mr. Fitzgerald—Is there any medicine, preparation, nostrum, or concoction, known

to men of science, that will cure these contradictory diseases affecting different parts of the human frame ?

Witness—In all their stages ? No ; none whatsoever. There is just as much truth in it as in the “*Philosopher’s Stone*.”

Mr. Fitzgerald—Is consumption a curable disease ?

No ; not at the stages which I suppose are described there ; that is, where there is confirmed consumption.

Mr. Fitzgerald—You have heard the advertisement read ; now I ask you, in your opinion, as a member of the medical profession, is it a quack advertisement ?

Witness—I call it so, certainly ; I really designate it as the *beau ideal* of a quack advertisement. I never read one more perfectly so.

Dr. Corrigan examined by Mr. O’Hagan—I heard the advertisement read ; I do not believe it to be true, but very untrue ; I heard all the diseases it enumerated, and I do not believe it possible that the medicines could cure them ; I believe the advertisement to be one which comes under the denomination of quack advertisements.

Mr. Robert Gunn, one of the proprietors of the *General Advertiser*, examined by Mr. Fitzgerald—There are certain advertisements which may be classed as quack advertisements ; an advertisement was tendered to me by Surgeon Larkin, which I rejected, because it was a quack advertisement ; unquestionably I never knew a more decided case of quack advertisement than the one in question, and I have seen many a one.

The Lord Chief Justice proceeded to charge the jury. After stating, at some length, what was stated to be the libel, and again reading that document, he said—

Now I may proceed to tell you the respective situation in which you as the jury, and I as the judge, stand in regard to this case. Gentlemen, generally speaking the jury are the judges of the fact—the judge is the judge of the law ; but by an act of parliament which took place in this country, and a similar one in England, in matters of libel the jury, and not the judge, are pronounced to be the judges of the law as well as judges of the fact. Therefore, gentlemen of the jury, in this case you are the constitutional judge or judges of both law and fact, and it lies upon you particularly to dispose of it according to such conclusions as you may come to in your better judgments upon the subject. In Roscoe’s Digest upon the Law of Evidence, it is laid down “whether a writing is a libel or not is a question for the jury, and the judge is not bound to give any opinion on it.” This does not say that the judge is forbidden to take this course where he may think it right to do so ; it does not say that he is forbidden

to do it, if he thinks proper ; but the jury are certainly, by the act of parliament, the judges of the law and the fact, and the judge is not bound to give any opinion upon it. Now considering the nature of this case—considering the way in which the action has been conducted—considering the ample attention and great ability exhibited by the counsel who have spoken to it, and considering, also, the position in which the case actually stands, and how little difficulty there is in it, I do not feel myself at all called upon to go into the question, and I, therefore, leave the determination upon the law and upon the fact to you—who have heard so much—in whose judgment the legislature has confided in matters of libel, to pronounce and come to a conclusion—such a conclusion as your consciences may dictate, and your judgment approve. The proper course is said to be for the judge to define what a libel is in point of law. The judge is not bound to take that course ; but it is said to be a proper course for him to take ; and though I am not going to take this case out of your hands in point of law or in point of fact, I will follow the course that was laid down in *Armiter v. Copeland*, 6 *Mason and Welsby*, 106, and that is, to define to you what libel is in point of law. A libel is a publication without justification or lawful excuse calculated to injure the reputation of another by exposing him to hatred, contempt, or ridicule. You will recollect these terms, gentlemen, and you will, having heard the case, have to say, whether this be a publication without justification or lawful excuse, calculated to injure the reputation of the plaintiff—that is to say, if he be a member of the medical profession—showing and proving to you his diploma, obtained from proper authorities, the president and vice-presidents of the College of Surgeons in England ; being therefore a qualified person, and having been examined by these authorities, was approved of and admitted of their college on the 6th of January, 1815 ; that, gentlemen, is a document to go to you ; another document of a similar kind will be the certificate or the book of enrolment from the Corporation of Apothecaries of Dublin, who have a right, by act of parliament, of conferring diplomas. Then the question comes—the fact of publication and proprietorship of the newspaper having been admitted—was this publication of the 22nd February, 1845, a publication without justification or lawful excuse—calculated to injure the reputation of the plaintiff by exposing him to hatred, contempt, or ridicule ? If it was, it will be your duty then to consider the amount of damages you ought to be give for such libel, taking care not to exceed £500, which is the extent at which they are laid.

But if you be of a contrary opinion, that this medical man did print and did circulate a quack advertisement, and he has brought this action for the words "quack advertisement" alone, then you will have to consider in your character of judges as well of the law as of the fact, whether this was or was not a publication without justification or lawful excuse. If you think it was a publication justified in point of fact, and having lawful excuse—why, then, gentlemen of the jury, I need not say what will be your duty, and I leave it to your own judgment and discretion. On the whole, you will recollect what the particulars of the evidence were. You will recollect the opinions given by the medical men who were examined. You will recollect whether any decided opinion was given by any witness in favour of the plaintiff that this was not a quack advertisement—for this is the libel. If you think it was not, it will be for you to decide what ought to be your verdict. As judges of the law and of the fact, you are bound to give your upright and just decision. If you find for the plaintiff, you cannot go beyond £500. I don't mean to say by that that you are to give him anything. If you find otherwise, you will find for the defendant. However, it will be for you to consider all the facts and circumstances, and I may therefore leave the case in your hands.

The jury then retired.

Mr. J. D. Fitzgerald called upon his lordship to state more explicitly to the jury the precise nature of the question they had to try—it was simply whether the advertisement alluded to, in the paragraph complained of was a "quack advertisement" or not.

Chief Justice—I have informed the jury on the subject, Mr. Fitzgerald.

Mr. Fitzgerald—Yes, my lord; but possibly they do not see clearly that the consideration is to be entirely confined within the limits of that question, and that they are not to take into account whether the plaintiff was or was not injured by the publication in question.

Chief Justice sent for the jury.

The jury having re-entered the box,

The Chief Justice informed them that some apprehensions were entertained by the counsel for the defendant that he (the Chief Justice) might have given them reason to misunderstand the intent of his charge in the way he delivered it.

The Foreman—Oh, your lordship is very clear on the subject.

Several other jurors expressed the same opinion.

Chief Justice—The question between the parties is this—is the paragraph, or is it not, a libel? and if so, is it, or is it not, without justification or lawful excuse?

Mr. Fitzgerald—With great respect, my lord, whilst the first question is, whether the paragraph be or be not a libel, I look upon the second and most important question to be, whether this advertisement is a quack advertisement or not. If the jury are of opinion that the paragraph is not a libel, of course the second question, as to the quack advertisement, falls to the ground. I therefore submit—though I don't like doing so in the presence of the jury—that your lordship should so send it to them.

Chief Justice—Well, gentlemen, you have heard the "supplement" to the charge given by Mr. Fitzgerald, and you will receive it into your consideration.

The jury again retired, and after a deliberation of about fifteen minutes, returned to court with a verdict for plaintiff, 40s. damages and costs.—*Dublin Medical Press.*

Correspondence.

A HINT TOWARDS SUPPRESSING QUACKERY.

To the Editor of the Medical Gazette.

SIR,

THE enclosed extract from a journal lately established as the organ of one of the bodies of dissenters, and having a circulation already of upwards of 30,000, seemed so sensible and apposite that I have copied it out for your journal.

Another periodical, having a high reputation among dissenters (the Evangelical Magazine), has since followed the good example of the Christian Witness. As this journal has a circulation of 16,000, by this combined movement quack advertisements have been excluded to an extent of 40,000 copies, and probably from the sight of nearly a quarter of a million of readers.

I am one of those who doubt the possibility of suppressing quackery by direct legislation; but I think our professional societies might do much good by bringing the subject of quack advertisements under the notice of respectable editors, and inducing them to follow this good example of exclusion. Many of our journals would, I doubt not, be willing to resign this inferior source of profit if the evil were fairly brought before them.—I am, sir,

Your obedient servant,

M.D.

The editor, and the confidential committee appointed to communicate with him, have unanimously recommended to the general committee the *exclusion of all quack advertisements*; and this recommendation has, by that body, been framed into a resolution, and transmitted to the publisher for his guidance.

"This measure will considerably affect the profits from advertisements, for quacks are among the best supporters of the Stamp Office. But we have an unalterable conviction that the step is right and proper, an act of homage to religion and decency; for the bulk of quack advertisements are not meet accompaniments of a family magazine, which is the hand-book of youth, and forms, to a large extent, the subject of Sabbath reading. We fell into the current, following the bad example of pre-existing religious magazines; but reflection has led us to see our mistake, and we hasten to repair it, assured that we shall give satisfaction to all our readers who properly estimate the character of modern quackery, which is one of the vilest and foulest of all foul and vile vocations, sustained to an incredible extent by fraud, forgery, and falsehood, and fraught with delusion, disease, and death. To publish their nostrums is to partake of their deeds, to receive their money is to share their spoils, and aid them in making war upon mankind. *No vehicle renders them such assistance in the work of rapine as the religious magazines, which, among the thoughtless masses, naturally tend to dignify the hateful system, and to sanctify the ruthless imposture.* On this point, the communications from some of our correspondents are both startling and grievous, and such as shew the necessity of religious men and religious magazines cutting all connexion with quacks and quackery."—*Christian Witness*.*

INSPISSATED OX-GALL AND PICROMEL.

To the Editor of the Medical Gazette.

SIR,—The remarks of Dr. Hunter Lane, contained in the last MEDICAL GAZETTE, on the mode of preparing ox-gall for medicinal purposes, require one or two brief observations. I am inclined to think the practice to which he alludes, of allowing the fresh gall to stand in a vessel until the heavier portions subside, and of selecting only the clear supernatant fluid, would tend in some degree to the deterioration of the remedy, for human bile, like that of the ox, contains a certain amount of yellow matter in suspension, of which it is deprived by the method indicated by Dr. Lane. This yellow matter is what was formerly denominated "resin of bile," but has been subsequently found to contain *picromel*. Until experiments shall have been instituted to establish the precise action of the different portions of gall on the animal economy, I deem it not altogether prudent to reject any in our modes of preparation.

* Editors may exclude them, but the trial of Larkin v. Duffy, p. 476, shews they must be very careful in giving a reason for their exclusion!

The following is the way to obtain *picromel*, which is said to contain all the active properties of bile:—Sulphuric acid, diluted with five parts of water, is mixed with fresh bile, when a yellow precipitate is produced. The mixture is then heated, and, on cooling, the clear portion drawn off. The precipitate is a greenish compound of *picromel* and sulphuric acid. Digest it in water with carbonate of barytes, and pure *picromel* is liberated in solution, which, on evaporation, will be obtained in a solid state. Another method consists in dissolving the green sulphate of *picromel* in alcohol, and digesting the solution over carbonate of potash until it ceases to redden litmus paper. *Picromel* thus produced is combined with alcohol.

Pure *picromel* resembles inspissated bile, is of a greenish-yellow colour, and intensely bitter. It is not affected by infusion of galls, but the salts of iron and acetate of lead decompose it. It yields no ammonia by destructive distillation; hence the absence of azote is inferred.

Dr. Lane complains of the great tendency of inspissated ox-gall to become deliquescent, but this I have not found. There is by me, at this moment, a quantity which has been kept in a loosely covered vessel nearly two years, and it has not undergone the slightest change, except, indeed, that it has grown so hard as to require gentle warming before it can be removed from the jar. I can readily comprehend, if it be hermetically sealed in stopper-bottles soon after preparation, that further evaporation is prevented, and it will grow moist; but I think this may be always guarded against by keeping it in a moderately warm and dry situation, with a certain degree of exposure to the atmosphere.

I am, sir,

Your most obedient servant,

R. H. ALLNATT.

Parliament Street, Whitehall,
July 5, 1845.

INSPISSATED AND DESICCATED OX-GALL.

To the Editor of the Medical Gazette.

SIR,—In your number of to-day there is an article, I find, from the pen of Dr. Hunter Lane, on the mode of preparing ox-gall for medicinal purposes, in which he particularly insists on the superiority of the *desiccated* over the *inspissated* ox-gall. In the opinion he expresses I fully coincide. About two years since I began to employ this medicine in its inspissated form, but from the frequent complaints that were made to me about the difficulty there was of preventing the pills from running together, or preserving the substance at all dry, I was almost obliged to relinquish its employment, when Dr. Hunter Lane suggested its desiccation, which I willingly adopted. Since that time it has

been prepared for me in that manner, and I have heard no repetition of the complaints. The pills are with ease preserved, and the drug, being kept in closely stoppered phials, maintains its dry and pulverizable quality. It may, perhaps, be needless to add, that I now prescribe no other than the desiccated ox-gall.

Independently of the difference in the physical properties of the two preparations, I should, from a superficial review of some of the cases in which I have employed this medicine, have almost been led to suppose that the dried possessed greater medicinal virtues than the inspissated ox-gall, for in several instances where my prescriptions of it have been compounded near the patients' residences, they have bitterly complained of the disagreeableness of the pills as well as of the griping pains they produce, and the utter impossibility of keeping them separate. Whereas, if the same prescriptions were compounded at some apothecary's where I knew the gall was kept desiccated, the patients represented the pills as totally different, having no foetid smell, and producing no griping action of the bowels. Although this might, at first glance, appear attributable to the different state to which the drug is reduced, I believe it to arise from the careful separation of the diseased from the natural bile evaporated, or from due care being taken during its preparation to protect it from decomposition by exposure to too great a heat,—the two essential precautions so justly indicated by Dr. Hunter Lane.

In the many and various cases in which I have prescribed desiccated ox-gall, it has proved a highly useful stomachic and aperient, admirably supplying the necessities created by torpid or disordered livers.

In some instances I have found diarrhoea follow its employment, but this was the consequence of the patients' own negligence in persevering in its use after its natural operation had been established. When this diarrhoea was excited, it seemed identical with that following an inordinate secretion of bile, such as we meet with in spring and autumn, and it soon subsided after suspending the medicine.—I am, sir,

Your obedient servant,

G. W. BLANCH, M.R.C.S.E.

3, Vassall Place, Brixton Road,
July 5, 1845.

Medical Intelligence.

COLLEGE OF PHYSICIANS.

AN election of Fellows took place at the London College of Physicians on the 25th ult., and the following gentlemen were

nominated:—Dr. Pereira, Dr. Jenks, Dr. S. Thomson, Dr. G. Bird, Dr. P. Black, Dr. B. Jones, and Dr. R. G. Latham.

PHYSIC AND SURGERY BILL.

FROM a report of the petitions sent to the House of Commons, we find that there have been presented 273 petitions for an alteration of the Physic and Surgery Bill, signed by 3624 persons; and 11 petitions for sanatory regulations in towns, signed by 2,192 persons.

STATISTICS OF INSANITY IN SCOTLAND.

A RETURN has been published relating to lunatics in Scotland (moved for by Lord Ashley, M.P.) From this it appears that the gross total number of lunatics, parish paupers, and furious or fatuous persons confined in the various counties and stewardries of that country on the 1st of January, 1845, amounted to 1,694, of whom 785 males and 714 females (1,499 in all), were immured within public lunatic asylums; and 195 (92 males and 103 females) in licensed mad-houses. The number of lunatics privately confined under the provisions of the Act 9 George IV. cap. 34, at the same period, amounted to 13. The total number of dangerous lunatics committed by the sheriffs of Scotland under the provisions of the Act 21 and 5 Victoria, cap. 60, has amounted, since the passing of the Act, to 155; viz. 110 males and 45 females.

MUSEUM OF PATHOLOGICAL ANATOMY.

WE have had much pleasure in viewing a collection of models of pathological specimens, by M. Felix Thibert. His museum contains many hundreds of these models, which are remarkably well arranged in nosological order; it not only comprises a variety of rare forms of disease, but also illustrates all those kinds of ordinary external and internal lesion with which it is necessary that the student should become familiar. The general characters of the morbid changes, and the whole of the minute structural alterations, are imitated with remarkable fidelity. The models have the advantage of being formed of a very solid and durable material, and the colours are said to be permanent. The greater number of the specimens are by no means unwieldy, and are so contrived as to be enclosed in cases which take up very little room, having the appearance of thick quarto and folio volumes. Frequently half a dozen of these "volumes" are made to contain a complete series of illustrations of a class of diseases, such as primary syphilitic sores, the exanthemata, the principal diseases of the eye, the effects produced by poisons, &c. We strongly recommend M. Thibert's works to the attention of the profession.

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURE

ON

CASES OF NEURALGIA,

Delivered at St. Bartholomew's Hospital,

BY DR. GEORGE BURROWS.

THERE is a series of cases of chronic disease of the nervous system at present in my wards, which are well worthy of your observation, and of comparison one with the other. They are varieties of neuralgia and local paralysis.

CASE I.—*Neuralgia, with spasmodic contraction of the muscles of the face, relieved by tonics and belladonna.*

Mary Ann Mills, æt. 26, admitted April 28th, 1845.

April 29th.—Pale, cachectic-looking countenance; features much distorted, and drawn to the right side; pulse 82, small, soft; tongue furred, moist, but only slightly protruded; bowels confined: catamenia regular; complains of severe and constant pain in the face, more particularly on the right side. The painful parts are also tender to the touch, especially at the points of exit of the several branches of the fifth pair of nerves. The pain is of a sharp darting character, is increased by movement, and by the presence of food, &c. in the mouth, and entirely prevents sleep. She is a household servant, single, and has suffered from rheumatism during the last two years, but had good health previously. Has had occasionally, for several months, pains in the face, but during the last seven weeks much more severe pains have occurred. These have not been periodical in their recurrence. Some days ago was suddenly rendered unconscious, and fell; afterwards was much excited for two or three hours. The pain in her face became very violent, and her features became gradually distorted. She has been an out-patient at the hospital, and has been treated by blistering at the nape of the neck, leeching behind the ears, but the pain is not diminished.

REMARKS.—The distortion of this woman's face at first sight gave rise to the suspicion of paralysis of the muscles of the left side. Her account of a sudden loss of consciousness a few days before admission supported this probability, but upon investigation it was found that the sensibility and muscular powers of the left side were unimpaired. Her appearance resembled that of a person afflicted with palsy of the portio dura, but we soon found that her power of closing the

eyelids was perfect on the left side. The case was, therefore, not to be regarded as one of local paralysis, although the equilibrium of the muscular forces on the two sides of the face was destroyed. The distortion seemed to depend upon an undue and morbid activity of the functions of the facial nerves on the right side. I could not make out that these symptoms depended upon any local cause of irritation, and I therefore regarded them as manifestations of a disordered constitution. She was ordered—

Morphine Acet. gr. ss. and Mist. Camph. h. s. s.

April 30th.—Had a good night, but pain in face is very violent to-day; tongue protruded painfully, furred, white, moist; pulse 80, small, and weak; bowels not open. Ordered—

Ol. Ricini, ʒss. statim. Quinæ disulph. gr. v. 6tis horis.

May 7th.—No benefit having been derived from the use of quinine, ordered—

Mist. Ferri Comp. 6tis horis. Pil. Sapon. Co. gr. v. omni nocte. Vin. Rubri, ʒiv. quotidie.

24th.—The Mist. Ferri Comp. has been given every four hours; it has produced pain and relaxation of the bowels: the facial pain has been quite relieved for a week, but has now returned in the same places as before; tongue clean; pulse 80, small; bowels not open. The pain in the face continued almost without remission for a week. Ext. Belladonnæ was applied to the right orbital region, and allowed to remain several hours; it produced dilatation of the pupil, and dimness of sight, but did not relieve the pain.

The Ext. Belladonnæ was then given internally, in doses of gr. ss. every six hours, and in the course of a few days the pains of the face, and the spasm of the muscles, remitted. She obtained sleep, was able to take nourishment, and has since gradually improved in health.

REMARKS.—This case presents an example of one of the most common forms of neuralgia, and which is most amenable to remedies. Sedatives and tonics alone had but little influence over the disease; the Mist. Ferri Comp., and other preparations of iron, are in such cases often eminently beneficial, and we had hoped the temporary remission of this woman's sufferings after the exhibition of steel during a week was an evidence of returning health. The spasms and pains, however, recurred, but yielded rapidly to the relaxing influence of belladonna*.

* This woman has subsequently suffered a relapse.

CASE II.—*Severe Neuralgia, and spasmodic contractions of the left arm and leg, supervening on lactation: relieved by tonics and belladonna.*

Mary Ann Taylor, æt. 26, admitted March 27th, 1845. Sickly looking; countenance with expression of suffering; tongue unnaturally red; skin warm, perspiring; pulse 90, rather full, compressible; bowels confined; urine free. Her left arm is extended, drawn closely to the side, and rather backwards; fore arm and hand awkwardly pronated; the fingers violently extended and adducted. Her left leg is almost similarly affected; voluntary power is altogether destroyed in these limbs, but spasmodic twitchings frequently occur in them. Severe, but not constant pain, affects both limbs, particularly at the shoulder, elbow, and knee; the pains are much aggravated by any attempts to move the affected limbs. There is no wasting of the muscles, but they are flabby. Temperature of the affected side not diminished.

She is married, has had six children, suckled the last for ten months, and has weaned it about a fortnight. She had three fits at the age of six or seven years; her left arm has since been weak and twisted, but not useless. About six weeks ago pain arose in the large joints of the left side, and soon after both limbs of that side became paralysed; she did not perceive pain or uneasiness in her head previously: the pains in limbs render her sleepless. Ordered—

Ext. Hyosciami, gr. v. 6tis horis.

REMARKS.—The prognosis in this case was very unfavourable; there was reason to believe that some serious structural lesion had occurred to the brain at the time of the fits, nineteen years ago, and from the present symptoms and the cachectic condition of the woman, I feared that disorganization might be going on around the original seat of disease. I suspected this might prove an example of partial softening of the brain from insufficient nutrition.

On the following day, no mitigation of pain or sleep having been procured by the quiet and comforts of the hospital, nor by the use of the henbane, and being confirmed in my opinion that the symptoms were partly those of nervous irritation from exhaustion, she was ordered—

Ammon. Sesquicarb. gr. v.; Tinct. Hyosciami, ʒj.; Infus. Cascarillæ; Mist. Camphoræ aa. ʒvj. ft. haust. 6tâ quâque hora sumend. Vin. Rubri, ʒvj. quotidie. One mutton chop daily.

April 30th.—During the last month her pain has been unmitigated; her nights are almost sleepless; general health much improved; strength increasing. Her hand

has been secured by bandage upon a straight splint, the effect of which was to relieve that limb from severe pain sometimes. The draught has been continued; opiates, and other sedatives, have been administered; two blisters have been applied to the nape of the neck. Her diet has consisted of meat, bread, and wine. The chief seat of pain is now in the instep of the left foot. It was ordered that Aconitine should be applied to the painful parts.

May 7th.—Several applications of the Tincture of Aconite have been made to the ankle and knee, with manifest relief to the pain; this local application was continued, and she was ordered—

Mist. Ferri Comp. ʒiss. ter die. Pil. Sapon. Co. gr. v. 6tis horis.

21st.—No decided or permanent relief ensued from the use of the Aconitine; for the last few days she has been taking Ext. Belladonnæ gr. ss., at first every six hours, and then the same dose every four hours. The pains are greatly diminished, and only occasional; she is regaining power over the left arm and leg; her countenance is cheerful; she sleeps well; tongue clean; appetite good; pulse 84, soft.

(The belladonna was discontinued shortly after this note, on account of dimness of vision but without dilatation of the pupils. She was ordered Quinæ-Ferro-Citrat. gr. x. 6tâ quâque horâ, and has gradually improved in health up to this date, June 9th, when she is up and walking about.)

REMARKS.—The relief obtained in this case of spasmodic neuralgia from the use of belladonna was most unexpected and gratifying. The patient's constitution had, it is true, very much improved under the administration of tonics, sedatives, and a generous diet. But the pain and spasms continued during two months of this plan of treatment, whereas there was a marked and progressive improvement within a few days after the employment of the belladonna, and no return of the spasm upon the discontinuance of that powerful remedy.

CASE III.—*Paralysis of the muscles of the left Eye-ball without loss of vision; subsequent similar affection of the right eye. Death. Carcinoma of the pituitary gland and in each cavernous sinus.*

Thomas Elliston, æt. 47, admitted March 31st, 1845. Stout made; face bloated; left eyelids closed; pulse 84, small, sharp, but soft; mouth apparently affected by mercury. Is a bricklayer's clerk; has generally had good health till within the last five months. Is of very intemperate habits; had syphilis seventeen years ago. Had a sore throat, said to be ulcerated, seven months ago. In January last, he noticed

that "he saw double," and, being alarmed, he became an out-patient at an Eye Infirmary, but the affection of the left eye has increased gradually to the present state. He has now complete paralysis of the muscles of the left eye, and of the levator palpebræ. The orbicularis palpebrarum acts fully and strongly when the eyelid is raised. The pupil is permanently dilated. Vision in the same eye is impaired, but not lost. The functions of the right eye are not manifestly impaired. Ordered—

Ext. Hyoscyami, gr. x. omni nocte.

Haust. Sennæ C. p. r. n. Broth diet.

April 25th.—He has continued without any marked change from day to day, but generally getting weaker. He complains of pains across the forehead and left temporal regions; has but little sleep at night. Bowels generally confined; pulse 90, natural. He has been prevented from swallowing the pills, by the continuance of soreness of mouth and salivation. His eye remains in the same state as before. The left parotid gland has become much swelled, hard, and occasionally painful. There is no paralysis of the muscles supplied by portio dura nerve. Ordered—

Leeches and poultices to be applied to the swollen parotid. Vini, ʒiv. quotidie.

May 13th.—Within the last fortnight the *right* eyeball has become gradually fixed, or nearly so, and ptosis of the corresponding lid has gradually come on. The left eyeball remains quite motionless. He complains much of a feeling of choking, and of pain in the throat. He lies in a drowsy state, but seems to suffer much; the submaxillary glands are enlarged. Ordered occasional applications of leeches to them.

26th.—He died gradually this morning, having during the last fortnight lain in a torpid state, with both eyes always closed, taking food when pressed; not complaining of any pain, retaining his senses, his sight particularly, to the last, so that upon raising the eyelids he recognised persons and objects. Body examined thirty hours after death. Temp. 60°.

Head.—Brain generally very soft, but everywhere of healthy structure. That portion of the left middle lobe of the cerebrum which lay upon the cavernous sinus was adherent to the dura mater to the extent of about a quarter of an inch, and being torn away shewed a reddish fungous growth partly upon the arachnoid of the brain, and the remainder still upon the dura mater, which forms the outer wall of the left cavernous sinus; the growth was here continuous with a swelling of the third nerve on this side, of a reddish colour, and situated at the point where the nerve pierced the dura

mater. The tissue of the brain to a little distance around the part which adhered, was more vascular than the rest. Upon carefully removing the dura mater covering the left cavernous sinus, a whitish, semi-opaque, granular mass was exposed, which, filling the cavity, bulged also from it: this mass (soft cancer) was inseparable from the pituitary body, whose structure was altered so as to resemble that above described. The dura mater being removed to a similar extent upon the right side, there was found protruding on the inner side of the Gasserian ganglion, a growth like that on the left side, and which was also continuous with the pituitary body. The several nerves in the right cavernous sinus were easily distinguishable upon the tumor, but in the left they were wholly lost in the new growth, with the exception of a few fibres of the fifth nerve at the posterior part. The swelling of the third nerve obliterated the tract of fibres, and merged into the tissue of the pituitary body. Absorption of bone had occurred at the base of the posterior clinoid processes, and the growth had extended beneath the dura mater as far as the basilar portion of the occipital bone. At the posterior part of the right sphenoidal sinus, a fungous growth had just penetrated the wall. The left parotid gland was large, hard, tough, white in sections, with yellow granules interspersed, and yielded when pressed a creamy fluid. All the other salivary glands, together with the thyroid and cervical absorbent glands, were found infiltrated with carcinoma. The papillæ of the tongue were much enlarged, and there was an extensive ulceration of the left side of the tongue, the tissues in the neighbourhood of which presented a whitish firm partly striated and partly granular condition.

Thorax.—Lungs generally healthy. In the right lung about the base were two or three hard nodules about the size of a large pea, which on section appeared opaque, white, of a radiated laminated aspect, hard, and on pressure giving issue to a white pul-taceous substance. On the posterior surface of the left lung were observed numerous dark patches, hard to the feel, which on section appeared chiefly to consist of hard nodules rather larger than those in the right lung. Bronchial glands healthy.

Pericardium presented signs of old pericarditis. Heart generally sound. The kidneys presented signs of granular degeneration: the abdominal organs healthy.

REMARKS.—The above detailed case offers many points of physiological and practical interest. The peculiarity of the paralysis, and its limitation to the nerves entering the left orbit, with the exception of the optic, and subsequently a similar palsy

of the right side, enabled me to predict to you that there was some disease affecting each cavernous sinus. It was impossible to form a more accurate diagnosis at the time of the patient's admission: when the salivary glands on the left side became enlarged, hard, and painful, it at once led us to suspect the development of some malignant growth at the base of the cranium. The gradual paralysis of the muscles of the right eye, and the increasing difficulty in deglutition, indicated an extension of this morbid growth both internally and externally. The aspect of this patient was very peculiar; he lay with both eyelids closed, but, upon raising the eyelids, he saw different objects placed directly before him, although the expression of the eyes was listless, inattentive, and the eyeballs remained quite motionless. Another symptom of interest was the appearance of spontaneous ptyalism twice during the progress of the case: this gave rise to the suspicion of the system having been accidentally affected by mercury, but I think there can be little doubt but that this inordinate flow of saliva arose from the stimulus of the carcinoma deposited in the salivary glands. The treatment consisted of local depletion, of sedatives combined with nutritious fluid diet: latterly the iodide of potassium was administered, but without any expectation of a favourable result.

Original Communications.

ON

MESMERISM AND THE MESMERISTS.

NOTES OF A FEW MORE TRIALS WITH THE
MESMERISTS IN A SECOND SEARCH FOR
CLAIRVOYANCE.

By JOHN FORBES, M.D. F.R.S.

HAVING heard much of the feats of Adolphe, which were said by some to outdo even those of his brother Alexis, and having learnt that Dr. Elliotson considered him a genuine somnambulist, I was once more induced to renew my search for clairvoyance, notwithstanding the inauspicious results of my former attempts. In setting about this second trial, as in my previous examinations, I determined to give the mesmerists no just grounds of complaint against me, while I took the ordinary precautions against being imposed on by imperfect or false evidence. I resolved to interfere in no way with the course of their proceedings, contenting myself with being a simple observer of what was passing, or, at any rate, no further an actor in the scene than was in accordance with the wishes, or, at least,

with the full sanction of the directing mesmeriser. And it is but justice to Mr. Vernon to state, that while expressing his full satisfaction with the course I and my friends took at these sittings, he interposed no obstructions in the way of our proceedings, and afforded us no grounds for believing that there existed any unfair collusion between him and the subjects of his mesmeric manipulations. He certainly seemed desirous that we should ascertain the truth; although, if he still believes in the good faith of his Lady-performer, after what he witnessed along with me, he must be much more credulous than becomes a philosophical inquirer.

In laying the results of these new trials before the reader, I shall, in the first place, give a simple narrative of the whole proceedings, without comment; I shall then append such special remarks as are called for by the cases, and conclude with such inferences as seem to flow naturally from the premises.

In all the examinations, except those of Fräulein von Gönnern, I was most kindly assisted by my friends. Mr. Drewry Ottley was present at every meeting; Professor Sharpey at every meeting but one; Professor Reid, Dr. Carpenter, Dr. Risdon Bennett, Dr. Wigan, Mr. Noble, Mr. Newport, Mr. S. Wells, were each present at one sitting.

I. Adolphe.

TRIAL A (ADOLPHE).—At Mr. Vernon's, Duke Street, May 13, 1845.

About a dozen persons were assembled. Previously to Adolphe's appearance, a poor woman, said to be labouring under cancer, was mesmerised, and speedily fell into apparent sleep. She was left in this state during the rest of the sitting.

Then a young girl was introduced, mesmerised, and put through the popular performances of traction, and exhibiting the excitement of the phrenological organs (phreno-mesmerism). This performance was so marvellously perfect, so monstrously demonstrative of the truth of the two sciences (phrenology and mesmerism), that it was impossible to entertain a moment's doubt that the whole thing was a piece of sheer imposture, unworthy of detail.

Adolphe was then introduced, mesmerised, and bandaged (apparently with care) by Mr. Ottley, and then set to play *écarté*. This he did wonderfully well for a man who did not see—rather badly for a man who did. He also, while bandaged, told the names of cards on having them presented to him—sometimes wrong, often right: and on visiting cards, he sometimes read the printed names partly or wholly.

After a little time, the bandages were removed, and Adolphe proposed to *clear-see* in the undoubted sense, *i. e.* by seeing through

opaque bodies. Several sealed packets were placed by me into his hands; but, after a time, he announced that he had not the power of vision, and did not declare the contents of any. A gentleman (who had played at *ecarté* with him) then placed a folded paper (not many times folded, and not sealed) in his hands. This he twisted about, looked earnestly at, placed to his chest, mouth, &c. and then, though still declaring he could not see, began to announce, by fits and starts, and with great seeming carelessness, some of the letters of the word enclosed. He first said the word contained two L's (*ll*), then the letters "shall," then "marshall," or something like it. I watched the paper while in his hands, and saw that he did not unfold it. The paper was then opened, and was found to have written on it the word "*Maschalla*."

TRIAL B (ADOLPHE).—*At Dr. Forbes's,*
May 16, 1845.

On this occasion there were twelve or fifteen persons present. Adolphe was thrown into the mesmeric sleep (so called) in a minute or two by the fixed gaze of Mr. Vernon. Soon after, his eyes were closely bandaged with pads of cotton wool and three silk handkerchiefs, by Mr. Otley, and apparently very effectually. Some playing-cards were then put into his hands, given to Mr. Vernon by myself. Adolphe twisted them about, and felt them rapidly with his fingers—still keeping them within the sphere of ordinary vision. Some of the cards he named accurately, some inaccurately, but still approximating the truth: others he entirely mistook. He was then (still bandaged) set to play *ecarté*. He played much more accurately than it seemed possible for a blind man to play—making, however, frequent gross mistakes. He was evidently dissatisfied with his performance, as well as Mr. Vernon, and he was therefore *demesmerised*, and taken for a short time into the other room (divided by folding-doors, open), and again mesmerised there. He was then brought back into the room where the company was, and once more bandaged. The same performances were gone through, and with more decided success, the mistakes being fewer, and the hits stronger. After a short hand at *ecarté*, Mr. Vernon proposed that he should read a book (still bandaged), and the *Lancet* journal, which happened to be on a table near, was placed before him, with the title-page uppermost. He placed his hands rapidly over the large title, and looked at it earnestly in the attitude of one reading, and then spelt the words accurately "*The Lancet*." He turned over a few pages rapidly until he came to the leading article of the journal, and again read the large title "*The Lancet*."

Having thus succeeded in playing tolerably well, and having been (purposely) lauded by those who stood near for his complete success in reading the two words mentioned ("*The Lancet*"), Mr. V. then thought Adolphe in a fair state for exhibiting his powers of positive clairvoyance, and accordingly some dozen articles were placed before him, all carefully prepared, and all thoroughly enclosing printed words (French), so that it was *impossible* for ordinary vision to reach these. They consisted of small wooden boxes, common blank envelopes (one within another, like nests of boxes), and papers folded on themselves, so as to present some half dozen thicknesses of paper over the words, all sealed or gummed. Adolphe took up some of these, and handled and twisted them about, placing them to his breast and mouth, but almost immediately declared that he could not see; and, notwithstanding the great apparent (assumed) sympathy, and positive kindness and encouragement he received from all around him, he did not even proceed so far as to make a guess. Mr. Vernon, while admitting the failure, admitted also that Adolphe had had perfectly fair play, and that he had no obvious means of accounting for his failure.

TRIAL C (ADOLPHE).—*At Mr. Otley's,*
May 19, 1845.

Several of the same party that had met at Dr. Forbes's again assembled, but fewer, there not being more than six or eight present at any time. After the same proceeding as on the former occasions, viz. a fixed stare for a moment or so, Adolphe, showing first a seeming drowsy nodding state, suddenly let his head fall back rather forcibly on the top of the back of the arm-chair in which he was seated. He was bandaged by Mr. Otley, assisted by Dr. Sharpey, and greater care was taken in doing so (according to previous arrangement), especially by bringing the cotton on to the nose, and low down by the side of the nose. The three bandages were also very carefully applied, so that we had all strong grounds for believing that it was hardly possible for Adolphe to see in the natural manner. Cards were then taken to him by Mr. Vernon, and afterwards by others, but he declared he could see nothing; and, notwithstanding all the coaxing, &c., after many attempts he still could see nothing. After a time he was *demesmerised*, and having been allowed to rest some time, he was rebandaged exactly as before, and with the same result precisely, *i. e.* with total incapacity to see anything brought to him. After the bandages were removed, we wished him to see *with his eyes* what was in the room, but he kept his lids partially closed, and declared he could see nothing. With Mr. Vernon's consent, I opened the lid of

one eye with my fingers, but still he declared he could see nothing.

He was again mesmerised, and it was then concerted among us that he should be purposely bandaged badly, in order to show us if he should then have better clairvoyance. But any further proceedings were objected to by Mr. Vernon, and were not urged by us.

TRIAL D (ADOLPHE).—*At Mr. Vernon's, May 24, 1845.*

At the meeting at Mr. Ottley's, on the 19th, on the failure of Adolphe it was proposed by Mr. Vernon that we should meet at his house on Saturday, the 24th, at half-past 2, and we were invited to bring with us the sealed packets which were taken to Mr. Ottley's, but not used.

On repairing to Duke Street at the time appointed, we found the room almost filled with persons to witness the performance, and that in place of being a private sitting, as we expected, it was a public one. However, we took our places near the seat of operation, with Mr. Vernon's sanction.

Adolphe was now introduced, and was speedily stared into the so-called sleep. A gentleman present (Dr. Wigan) came forward, and bandaged his eyes badly—so, at least, Dr. Sharpey, Dr. Reid, and myself thought—and I immediately stated our opinion to Dr. W., warning him that we would not allow any results to be genuine or valid derived from the bandaging. Dr. W. however, considered the bandaging to be at first effectual, but soon changed his mind on witnessing, as he affirmed, decided efforts made by Adolphe (both by throwing the muscles of the face into action, and by touching the bandages repeatedly with his hands) to change the original adjustment of the bandages.

However, so bandaged, and after the manoeuvres witnessed by Dr. Wigan, he proceeded to play at his usual game of *carté* with a gentleman said to be a good and powerful mesmeriser (Mr. Thomson, I understood). A few hands were played, and, I believe, tolerably well, but the cards were all thrown in the usual manner, with their faces upwards, and within the sphere of ordinary vision.

The bandages were then removed, and Mr. Vernon requested the boxes, sealed envelopes, &c. to be produced, and several of them were placed in the hands of Adolphe. He passed them repeatedly, one after another, through his hands, pressed them to his mouth, &c. but rejected them all, one after another, declaring that he could not see their contents. He, however, speedily gave the preference to a folded (but not thickly folded, and not sealed or gummed) paper, prepared on the spot by Dr. Wigan. This

he kept long in his hands, as if gazing intently on it, then pressed to his mouth, nose, &c., and once or twice very slightly unfolded it, but not sufficiently to expose the contents. After a long and painful trial he gave up the attempt, notwithstanding Dr. Wigan encouraged him by telling him the written words were common French words used every day by himself. The failure was admitted to be complete.

II.—*Mr. Vernon's Lady-Somnambulist.*

On several occasions Mr. Vernon had told me of the extraordinary and great powers of this person, both as to feats of simple clairvoyance, and as to her capacity of diagnosticating diseases. He named it as a peculiarity of her clairvoyance, that she could better read the words that were enclosed in opaque boxes than those which were folded within paper envelopes. He spoke of her ability to do this as a common and notorious fact that could not in any way be gainsayed; and although he expressed himself as never being *certain* that she would "see" on any given occasion, he spoke of her doing so at our purposed trial with the utmost confidence, and evidently looked forward to her performances as being likely to make up for the failures of Adolphe.

Of her capacity to discover diseases he spoke more enthusiastically still, and over and over again expressed an anxious desire that I should bring a patient to her on whom she might prove her diagnosticating powers.

This person, whose name I do not know, is apparently between 20 and 30; she is pallid, with good features, a widow, and reports herself to have been cured of a severe local disease by mesmerism.

TRIAL E (THE LADY).—*At Mr. Vernon's, May 24, 1845.*

In order to meet the alleged peculiarity of this person's power of clairvoyance, I came prepared with closed boxes. She was speedily thrown into the so-called mesmeric sleep, in which she lay while Mr. Vernon, standing by her side, explained aloud to the company the peculiarities of her mesmeric manifestations as to rigidity, coma, &c. All these she speedily exhibited, especially a fine theatrical "*extase*" in the mode of an adoring Madonna, in which Mr. Vernon compared her to Lord Shrewsbury's *Ecstasica*. After these various exhibitions had lasted a considerable time, she was asked by Mr. V. if she would try to read in the boxes. On her assenting, they were presented to her, viz., two small deal boxes, about three inches in length and half an inch deep, each containing a single printed word in large letters. The boxes were of thin materials, but closely fitted and sealed. A third box

(if it may be so called), consisted of an old red morocco spectacle-case, with the flap closed and sealed. This contained the following words in print, large and distinct, and placed lengthwise in the case, "*Consultation medico-legale sur quelques signes.*" After examining them, she rejected the two wooden boxes, and took possession of the spectacle-case. This she pressed to her forehead, on the top of her head, &c. with apparent deep consideration and thoughtfulness. After a time, she summoned the person (myself) who had placed the words in the box, and who knew them, to her side. I went to her, and her hand and mine were grasped in the mesmeriser's hand, while she continued to press the case on her forehead, and make (as it seemed) strenuous efforts to pierce the mystery within. At length she began to guess at letters, and to question me in that style vulgarly called "pumping." The word, she said, had five letters, had it not? I said there were five letters in the box, and more. After a time she said the word contained seven letters; then she made many assertions as to individual letters and their sequences. These guesses were taken down by Dr. Reid, and were as follows:—

1. Five letters.
2. Seven letters altogether.
3. The word ends with an *e*.
4. There is an *s* in the word.
5. There is a *c* next to the *c*.
6. Two *c*'s (*c c*) one at the end, one near the beginning.
7. An *i*.
8. Thinks the word is "*science*"—at least it looks like "*science*."

9. She sees clearly *c, c, s, c*; is not quite sure of the *n*, but sees two upright strokes.

All this took up a long time, probably nearly an hour. The case was then opened, and the words produced. Before this was done, however, she had said repeatedly that if she failed now she would (in her mesmeric state) announce a day on which she would be able to read *with certainty*; and at last she announced the day to be the 21st of June. She prescribed the nature of the box that was to be seen through; viz. a dark-coloured leather-covered case, such as is used to contain jewellery and small portraits; and wished one word to be inclosed, not too long, and that only a few friends should attend the sitting along with myself.

TRIAL F (THE LADY).—At Mr. Vernon's, June 21st.

According to the appointment prophetically fixed at the last sitting, I attended at the house No. 36, Manchester Street, accompanied by a few friends, viz. Drs. Sharpey and Risdon Bennett, Messrs. Otley and Wells. After some delay, the lady was thrown into the usual state, and, having gone

through the various phases pre-announced by Mr. Vernon, such as coma, rigidity, extasy, &c., she proposed to read the contents of the boxes. Previously to her doing so, however, Mr. Vernon let us know, incidentally as it were, that success was not so certain on account of some conditions as to previous mesmerising of the lady by himself on a certain day not having been strictly fulfilled. But he did not seem to rest much on this circumstance, and the lady proceeded to her task. She requested the box to be given her which contained the shortest word. This was accordingly done by myself, who alone knew the contents of any of the boxes on the table. The box given was one from which a small portrait had been removed; it was four inches square, and contained the single word "*No*," printed on white paper in very bold letters, each an inch in length. After much grasping and shuffling about the box, and pressing it long on the forehead, she announced that the word was one of six letters; and then, after long intervals, and in the usual guessing, inquiring—"pumping"—style, announced the letters first seen to be—first *e*, then *a*, then *s*. She was told, upon repeatedly expressing a desire to know the truth, that there was not an *e* in the word; and, after a considerable period, having been told that her other guesses were not more fortunate, she resigned the task as far as regarded that box.

It was proposed that she should attempt another box (there were five in all on the table), and after being taken out of the room in the so-called sleep-waking state for some time, and brought back again and freshly mesmerised, she attempted another box of the same kind, 3 inches by 2½ in size. This box contained the word "*Society*," printed in good large capitals on white paper. After the usual manipulations, and long pressure of the box on the forehead, and having had, at her request, my hand placed along with her own in the mesmerist's hands, she at last "saw" the following letters, announcing them in the following order, but not asserting that this was their order in the word—*e, r, s, a*. The boxes were then unsealed and opened in the presence of the persons assembled, and the real letters and words exhibited.

TRIAL G (THE LADY).—June 21, at Mr. Vernon's (same evening as the Trial F.)

Mr. Vernon having repeatedly expressed his wishes that I should bring a *patient* to this lady, to test her diagnostic powers, which he spoke of as almost infallible, I took with me on this occasion a young man known to me for years, and with the state of whose health I was well acquainted. He was, in fact, in very good health, except that he had long laboured under enormously

of the legs. These one eye with my finger it would be very easy to detect them by pressure through the clothes, and, therefore, to guard against this, he was requested to wear trousers and long boots. The somnambulist proceeded to feel the patient's body all over, passing slightly over the lower extremities, and resting chiefly on the chest and abdomen. After a considerable time so occupied, she announced a variety of affections and symptoms as constituting his malady, such as a weakness of stomach, palpitation, breathlessness, great irritability of nerves, &c. &c. Fearing that it might be afterwards alleged that the varicose condition of the veins was not a disease, I requested her to direct attention to the *surface* of the body, telling her distinctly, without letting her know that he had no internal disease, that he had a local disease on the *surface* of his body. She, however, made no announcement of the actual affection, or of any other disease of the surface. Upon being asked by the mesmeriser what would cure the diseases she had declared the patient to be suffering from, she replied that he (Mr. Vernon) knew what would do him good—viz. *mesmerism*. The young man on being afterwards questioned by Mr. Vernon as to his health, declared that he had not had a headache, or been in any way unwell, for years, except from his swelled legs.

III. *Friulein Von Gönnern*.

In the spring of the present year, advertisements appeared in the public prints announcing the arrival of this lady in London, and her intention to examine and prescribe for (mesmerically) patients either at her own or at the patients' houses; the fee to be paid being, in the former case, three guineas, and in the latter six. In the same advertisement some wonderful cases were announced as performed by her, such as the cure of blindness, insanity, &c. Her brother, with whom she travelled, and who is her mesmeriser, called on me, and expressed a strong desire that I should visit his sister, and witness her powers, which he described as infallible both in the diagnosis and treatment of diseases. On being assured that the sitting should be private, I waited on Miss Von G. at her lodgings. I found her to be an agreeable young damsel of some twenty or twenty-five years of age. No one was present but her brother. He informed me that his sister was possessed of the ordinary power of common clairvoyance, and had formerly exhibited some wonderful feats in this line; but that, now, she preferred exercising her powers in a more useful manner, namely, in ascertaining and curing diseases. He, however, offered to mesmerise her, and said that we must then be content with whatever she chose to do, whether in the

way of simple clairvoyance, or otherwise.

(TRIAL H).—MISS VON G.

Mr. Von Gönnern, in proceeding to mesmerise his sister, placed her in the recumbent posture on a sofa. A few passes threw her into the so-called mesmeric sleep. After a short time, while still in the recumbent posture, she began gesticulating with her arms, and pointing with her fingers in a very remarkable manner; she then raised herself from the sofa, and proceeded to execute a series of most complex and elaborate, and, at the same time, very graceful and imposing gesticulations, with her arms often stretched out at full length, and then gracefully retracted, with the fingers expanded, and slowly brought into contact with different parts of her own body, as if mesmerising herself. After a time, she included my body in the sphere of her manipulations, pointing to and touching, and grasping my head, chest, &c., in a very artistic fashion. This done, she gradually and gracefully retreated to the sofa, and then poured forth her revelations in a continuous oration or discourse, with the eyes closed, and the head waving in a very theatrical style. Although I had not stated that I was at all out of health, and although I am not aware that I looked so, she seemed to take it for granted that such was the case, and, besides some less definite symptoms, she declared that I laboured under two formal diseases, which she named,—the one a local affection, the other a constitutional one: the latter at present *latent*, but to be speedily developed, unless a certain ptisan, to be prescribed by my fair physician, was had recourse to. She also pronounced judgment of the actual and relative powers of some of my principal organs, and, on being questioned, gave me some anatomical, pathological, and etiological details as to the local malady she attributed to me. She then said she was fatigued, and requested to be awakened.

The process of awakening being, by her own specification, *by fire*, "*par le feu*,"—this was carried into execution by a lighted paper-match being waved before her face. On awaking, she professed total ignorance of what had passed during her trance, and expressed much apparent surprise on being told that she had been discovering my maladies, and prescribing for them. With respect to these said maladies, I am thankful to say that they existed altogether in my fair physician's imagination. I may also say that she was unfortunate in her judgment of the strength of some of the organs she named, their relative powers and soundness being, as far as I can judge, the reverse of her statement. Her anatomy was not more

accurate, being an embodying of the vulgar notions of the animal structure.

(TRIAL G).—MISS VON G.

I visited the lady again on the following day. She was mesmerised as before; and after going through the same preparatory processes, she proceeded to unfold her splendid intentions towards my unworthy self, in a continuous strain of eloquent declamation. In the first place, she assured me that all the somnambulists heretofore seen by me were impostors, and she was the only true one I had yet met with. She then proceeded to say, after a most flattering eulogy on my mental endowments—in which, as in my bodily powers, she took the weak for the strong—that, although already a *great man*, she would make me one of the greatest of men, if I followed her counsels. This magnifying was to take place through the instrumentality of certain medicinal plants, six in number, known to her, but unknown to all the world besides;—which plants were true panaceas, being curative of *all* diseases, and the knowledge of which she offered to communicate to me. Before, however, this momentous revelation was made, and while I was still expressing my gratitude for its being vouchsafed to me, of all mankind, my fair benefactress declared that she was fatigued, and requested to be forthwith awakened once more by fire. As I paid no more visits to the Fräulein, I know not whether the revelation of the six roots has been made to some more fortunate person than myself; but I believe she is still professing her art in London.

One other circumstance respecting the performances of this lady I shall here state, although I was no further personally concerned in it than being appealed to by the patient's husband as to the qualifications of the Fräulein. I can, however, vouch for the truth of the statements, as they were made to me by the physician consulted on the occasion. The patient, a lady of rank, went with her husband to consult Miss Von Gönner, on account of being in delicate health. The lady was declared by the fair somnambulist to be pregnant, and that the placenta was placed in an abnormal position—"too far back," she said. On the following day the lady received a written communication from her somnambulist, to the effect that she (Von Gönner) would, for the consideration of another fee, *change* the malposition of the placenta, and thus avert the impending danger! These things seeming rather alarming, the family physician, my informant, was consulted, and it turned out that the lady was not pregnant at all, the catamenia having made their appearance a few days afterwards!

REMARKS.

In taking the trouble to investigate these cases, I, of course, wished to arrive at some positive or trustworthy results, if such were attainable. In such an investigation, I had no right to take anything for granted; but I was prepared, I trust, to receive every thing as true which could be proved, or as probable which had probable evidence in its favour,—whether such things were or were not in accordance with any previous opinions I might entertain. So far, therefore, from thinking it necessary to make an apology for doubting or disbelieving things which the mesmerists with whom I had to do looked upon as ordinary matters of fact, I regarded it as an imperative duty in one honestly searching for truth, under the circumstances in question, to doubt and disbelieve every thing that was not proved, or that had not, at least, probable evidence to support it. Where so much imposture has prevailed, and still prevails, according to the testimony of the mesmerists themselves, it would be altogether unjustifiable to receive as authority any mere assertion of any party concerned in such exhibitions, or to admit as positive matter of fact whatever merely appeared to be so. Here, as elsewhere, Truth, if she have fair play, will vindicate herself in spite of theories or prejudices; but she has no right to expect *more* than fair play here, any more than elsewhere.

1. In the first place, then, I would remark, in regard to the three individuals whose performances are above described, that there existed not only no proof, but no probable evidence, that they were really in a mesmerised condition at all,—in other words, that they only pretended to be so, and were, consequently, impostors. The whole of their proceedings and demeanour, after rousing themselves from the short seeming slumber, were exactly those of a person awake (with the exception of the eyes being more or less closed), or were, at least, such as any person could assume. And, according to my own judgment, and that of the friends present with me, the proceedings were much more like those of persons in the normal state *shamming*, than like those of persons in a simply morbid or abnormal condition of the mind and body. And I now learn from the mesmerisers themselves (and from Dr. Engle due himself among others) that there really exists no *test* of the mesmeric state, at least no test that can be made available for those who doubt, and who require something like positive evidence before they admit as truth things most extraordinary in themselves, and at variance with all previous experience. Conclusions deduced from the mere phenomena or *appearances*, in such cases, rest altogether on an assumption which

we have no right to grant—viz. that the somnambulists are honest, and not shamming. Mr. Vernon says, he does not think that one in ten shows insensibility of the pupil to light. In this state of things the only test of the reality of the state would seem to be, the performance of some acts by the alleged somnambulists which it is *impossible* for persons not in this state to perform; e. g. the act of CLAIRVOYANCE in some of its forms: and I think it will hardly be doubted by any impartial person, who reads the whole of the present paper, that in the trials above described no such test was supplied.

2. The only occurrence reported in these trials that bore even the semblance of an approach towards clairvoyance, is that noticed in the first exhibition of Adolphe (Trial A), where the word "*Maschalla*" was apparently read or nearly read by him while in the state of so-called somnambulism. But I reject this as affording any thing like evidence of true clairvoyance, on the two following grounds:—First, because we had no proof that there was not collusion between the somnambulist and some party acquainted with the contents of the paper; and secondly, admitting that there was no such collusion, because there exists no evidence that the word could not be read through the paper by ordinary vision.

The first of these arguments is, of course, only valid to myself, or others similarly circumstanced. It would be altogether invalid to the gentleman who wrote the word, and presented the paper, and on whose fairness I beg here distinctly to state that I throw no imputation. I merely assert, that to render such evidence of any value, collusion must have been proved to be impossible; and, as this was not so proved to me, or to my friends, we are authorised in rejecting the testimony.

3. But the validity of the second argument must be admitted by all. I examined the paper on which "*Maschalla*," was written, and I assert that the folds of paper interposed between the word and the eye did not seem to me more numerous, nor the paper thicker, than in some other instances in which ordinary vision sufficed to read words similarly enclosed. As this is an important fact in relation to the general subject of clairvoyance, as practised by exhibiting somnambulists, I will mention the circumstance which first called my attention to it.

In one of the public exhibitions of Adolphe, at which I was not present, Mr. Ottley presented to him a sealed envelope enclosing several sheets of paper, in the interior one of which the word "*Toulon*" was written. After *much* assistance from Mr. Ottley (so much, indeed, as to reduce, in my judgment, the whole process—even if

the envelope had been altogether opaque—to, at most, a clever guess) the somnambulist announced the word to be, what it was,—"*TOULON*." Mr. Ottley showed me the identical paper on the following day. On examining it, I not only could not read the word enclosed, but I thought at the time that it was impossible for any ordinary vision to do so. I, however, (as I then told Mr. Ottley), could not admit, even if it had proved true that ordinary vision could *not* decipher the word, after the great assistance given by him to Adolphe, that the deciphering the word by him was any proof of clairvoyance. But all difficulty of explanation was soon removed by the fact, that ordinary vision *could* and *did* read this very word within its envelope! A lady, to whom the paper was shown, deciphered the word at once, without mesmerism, or any other power than her natural eyesight. This was done by holding the paper in a particular manner so that the light fell obliquely on the under surface, and was reflected through it upwards to the eye. And this lady succeeded in thus reading, through equally numerous folds of paper, words written in much smaller character than this word *Toulon*. Since Mr. Ottley acquainted me with this fact, I have tried the experiment myself, and find that, in this manner, I and others can read very well through four or five folds of letter-paper of medium thickness; that is, with three folds in front and two behind.

In the only two other instances within my own knowledge, besides this of "*Toulon*," in which any approach to accuracy of reading was made (once by Alexis, once by Adolphe), the folds of paper were not more than four or five; while I can testify from observation that coverings vastly thinner have been and are *supposed* to be sufficient to preclude all chance of ordinary vision. On one occasion, I saw a paper handed up to Adolphe, which was folded on itself *once only*, so that there was only a single thickness of paper between the written word and the eye, and yet the gentleman presenting it, I verily believe, thought he was assisting at a legitimate experiment! This fact sufficiently shows the utter unfitness of some persons to conduct any sort of investigation, well illustrates the kind of proof that passes at mesmeric exhibitions, and justifies the scepticism of those who refuse to admit all testimony authenticated only by evidence of this sort.

This deciphering of the word "*Toulon*" was regarded at the time by the major part of the company present as a striking evidence of the truth of clairvoyance, and has been, and I doubt not still is, triumphantly advanced by Mr. Vernon as such.

Since I have acquired the knowledge of the sufficiency of ordinary vision to read through a greater thickness of paper than I was before aware of, I have recalled to my recollection several particulars of the conduct of the somnambulists which appear to have relation to this fact. The position in which they placed the papers to be read was very frequently that which is found to be the best for transmitting the light through them—viz. an oblique position in relation to the eye. It was also observed in the case of both the brothers, Alexis and Adolphe, that when the choice was left to themselves, they always selected folded papers in preference to closed boxes; and on more than one occasion I remembered that they gave the preference to the papers that were thinnest, or had the fewest folds.

4. It is, however, but fair to the mesmerists to admit, that the class of cases now under consideration may allow of an explanation more favourable to their views than that just given, although coming far short of their general pretensions. We may allow, for instance, the possibility, at least,—we may even admit the probability,—of a person in a mesmerised state (admitting the reality of this) having his sense of vision so sharpened as to enable him to see through a translucent medium which was impervious to ordinary vision. Such a thing would be explicable on the principles of ordinary science: it is a thing, however, altogether different from the alleged fact of such persons seeing through thick boxes, or other bodies entirely opaque. The first, as I have said, might be admitted as very possible, if not very probable; the latter seems altogether impossible, according to the actual state of our knowledge of the laws of physiology and of physics. The circumstances above mentioned, however, throw great doubt on the theory that, in the cases where somnambulists have succeeded in deciphering words, or portions of words, within folded papers—and they have apparently succeeded in doing so in some cases—they succeeded through an exaltation of the power of ordinary vision: that they have ever succeeded in reading through an opaque medium or a thick box, is yet to be proved; and I believe cannot be proved.

5. All the performances of Adolphe with his eyes bandaged, and all his feats with cards, are utterly valueless, as proofs of clairvoyance. Indeed, I always regarded the card-playing exhibitions of him and his brother Alexis, so inadmissible as evidence, that I tolerated them merely to avoid the chance, or excuse, of giving offence to the mesmeriser, or discouraging the mesmerised. The facility of “playing tricks” afforded by cards—the staple of the vulgar conjuror—furnished sufficient excuse for rejecting all

evidence derived from them. But, even if the feats at cards were admissible as evidence, we have other sufficient reasons for utterly rejecting all performances with the eyes bandaged, as proof of clairvoyance.

It is well known to be extremely difficult so to bandage the eyes as to prevent all vision downwards by the side of the nose, free scope being left (as must always be the case) to the action of the eyelids and muscles of the face to disturb the padding and bandaging. This fact has been proved, over and over again, in individuals bandaged as closely as the professed somnambulists usually are. It no doubt may be possible so to bandage as to make sight impossible. It is believed that this was the case in Trial (C) of Adolphe; and the result was the total absence of anything like clairvoyance. And many things occurred in the cases both of Alexis and Adolphe which render it extremely probable—to say the least—that in all the instances in which they saw while bandaged, they saw with the eyes, by ordinary vision, from underneath, not through, their bandages. The following are some of the grounds on which this belief is founded:—

a. It was always observable that both these young men made use of certain manœuvres calculated to prevent effective bandaging, in the first instance; or afterwards to disturb it, if it had been made effective. In the case of Adolphe, it was noticed, at every sitting, that, while the bandage was being placed across his eyes and head, he invariably, *before the knot was tied, or the bandage drawn tight, put up his hands, one on each side, and pressed the bandage against the temples, and kept them there until the knot was tied.* The effect of this manœuvre, whether intended to be so or not, certainly was, to keep the bandage from being drawn tight, as the portion anterior to the temples, where the fingers were pressed, would be unaffected by any tightening posterior to the points pressed on. Of course, such a proceeding would give facility to the somnambulist to modify the position of the bandages and cotton, in such wise as to afford a better chance of seeing with the eyes from underneath the bandage. I was the more struck with this manœuvre, in the case of Adolphe, because it was invariably made use of also by Alexis. Both the brothers likewise executed it in a very quiet but open and unsuspecting manner, as if it were a natural impulse to relieve the uneasiness of pressure. It might be so indeed, but the invariableness of its performance, and its being invariably performed in the same manner by both brothers, and the obvious utility of the thing, on the theory of imposition, all gave it a considerable degree of importance in such an investigation. It was

with this impression on our minds that it was predetermined at the sitting at Mr. Ottley's (C) to counteract its influence, if real, by superior care in performing the bandaging. And the result obtained, certainly strengthened greatly the probability of our theory, since, on this occasion, and on this occasion only, no visional manifestations occurred! At the subsequent sitting (D) the bandaging was performed, as stated, by a different hand, not aware of our theory: the temple-pressing manoeuvre which we were all looking for took place precisely as before, and Adolphe played *ecarté* beautifully!

b. In addition to this imperfect bandaging, in the first instance, it was customary for Adolphe and Alexis subsequently to disturb the bandages by now and then touching them with the hands; and they were also seen, at times, to make marked efforts with the facial muscles, *as if to alter* the state of the bandages. This might or might not have been so;—but, at any rate, the thing, to say the least, is very suspicious, and tends to vitiate the experiment.

c. On the occasions where the performances were unsatisfactory, it was the custom for Mr. Vernon to demesmerise Adolphe, and have him re-bandaged. This plan, of course, gave the chance of less effective bandaging*, and the result sometimes was, that Adolphe saw much better on the second than on the first attempt: where effective bandaging was adopted on the second time (as in C) the result was equally inauspicious as before. At Mr. Ottley's we had planned a little stratagem which might have thrown more light on this point, if it had been carried into effect. We proposed that Adolphe, on being demesmerised the second time, should, on the third occasion, be bandaged *badly on purpose*: anticipating the likelihood of good sight and capital performance being the result: but Mr. Vernon objected to the repetition of the trial, and we did not press it.

6. In all the performances with the cards it was remarkable that the objects "seen" were in the line of vision *from under the lower edge of the bandage*, and *not* in the line direct from the eyes *through* the bandage: and no objects were ever "seen" beyond or out of the first-named sphere of vision. The inference from this is obvious.

7. The great discrepancy among mesmerists, as to the capacity of their somnambulists to hold communion with persons not *en rapport* with them, or to receive external impressions on the senses, is in itself a very remarkable circumstance, and one not a little suspicious. I only notice it here,

however, in reference to the question of the reality or non-reality of the somnambulist state in the case of the individuals concerned in the above-mentioned trials. In the instances of Adolphe, Alexis, and Von Gönner, the mesmerisers admitted that the sense of hearing was open to any speaker whether in relation with them or not. In the case of one of Mr. Brookes' somnambulists, whom I saw, Mr. Brookes maintained that she was altogether unconscious of what was said around her, in the loudest tone; and when any of the party wished verbally to communicate directly with her, Mr. B. *demesmerised one ear* for the purpose! This he condescended to do for me, and the lady then heard excellently well everything I said, though previously she would hear nothing! In the case of Mr. Vernon's lady-somnambulist, (Trial E) Mr. V. assured us that she was, in her mesmeric state, quite insensible to all that was said around her, and permitted us to speak aloud close by her while she was striving to read in my boxes. However, we had positive proof in this case that Mr. Vernon, to say the least, was mistaken, as, when she was off her guard, I repeatedly asked her questions, or made observations to her, to which she distinctly and correctly replied! This little stratagem was purposely contrived to test the reality of the alleged insensibility; and the satisfactory results were repeatedly witnessed by Dr. Sharpey, as well as myself.

8. It will not escape the observation of the readers of the preceding narrative, particularly of the Trials E, F, G, and H, that of the failures exhibited and mistakes committed by the professing seers, several were of a *positive* kind, and therefore incapable of being explained away by the favourite argument of the mesmerists—"that the power was not on the somnambulist at the time, and that a negative proves nothing." This argument must, no doubt, be admitted as valid in cases of simple non-success, where the results are null; but it is altogether inapplicable to the positive and most glaring matters of fact, committed by these people.

The misspelling of a word, or the only partial reading of it,—or the mistake of one letter for another, or indeed any little error of this kind, would not be considered by a fair judge as seriously, if, at all, detracting from the strength of the evidence; but when we see such blunders committed as in Trial F, where a word of two letters, each an inch square, was "seen" to be composed of six, and entirely different letters substituted for those actually present, we cannot explain the circumstance by any conceivable process, not inculcating the honesty and good faith of the party. In like manner, when we find, as in the Trials F, G, and H, the most obvious diseases overlooked, and others at-

* It gave, also, of course, the chance of more effective bandaging.

tributed which have no existence, we cannot avoid coming to the same conclusion.

9. The impositions attempted by Miss Von Gönner, in reference to her panaceas, are so monstrous, and so palpable, as to speak for themselves. The wonder is, that she could ever have expected to find any one sufficiently credulous to believe her; and yet she must have expected this. I presume that if she had encountered such a dupe, her brother would have taken good care that the important revelation should not be completed without a "consideration" on the part of the fortunate recipient.

The following general conclusions seem deducible from all that precedes, and will not, I think, be questioned by any impartial judge:—

I. That some of the exhibitions above described bear the open and unmistakable impression of imposture.

II. That in all the cases, as in that of Alexis formerly published, wherever there resulted any positive success, the fact can be accounted for on ordinary principles, without the aid of mesmerism.

III. That all the instances of success occurred where there was, at least, a possibility of succeeding, by the ordinary exercise of the senses in their normal state.

IV. That where care was taken to render the ordinary operation of the senses impossible, failure invariably resulted.

V. That the TRIALS failed utterly in proving the possession of CLAIRVOYANCE by any of the parties submitted to examination.

VI. That no proof was afforded that these parties were really in any special abnormal condition, such as is known by the name of somnambulism.

VII. That, on the contrary, the evidence adduced renders it extremely probable that the apparent abnormal condition was feigned, and that these persons were, consequently, IMPOSTORS.

SURGEONS AT AGINCOURT.

MR. Nich. Colnet, Phisitian, wth 3 Archers.

See his agreement with the King dated 29 April, 1415. *Fœdera*, Tome ix.

Thomas Morestede,	} Sur- geons	{ each with 9 more } 20
and Wllm. Bradwardyn		

See Morestede's agreement with the King, in which he is styled King's Surgeon, to attend himself, and to provide fifteen persons, of whom three were to be Archers, and the others "hommes de son mestier," dated 29 April, 1415, *Fœdera*, Tome ix. In p. 252 of the same volume, are two petitions from him, praying to be allowed money to provide necessaries for his office, and a proper number of persons and carriages. The King granted him xij persons and "I chariot and deuz somers." 15 May, 1415. From unpublished Collections for Rymer's *Fœdera*, Sloane MSS. 6400.—*Nicholas's History of the Battle of Agincourt.*

PRACTICAL OBSERVATIONS

ON THE

VARIOUS FORMS OF DYSPEPSIA.

By ROBERT DICK, M.D.

Author of a Treatise on the "Derangements, Primary and Reflex, of the Organs of Digestion, with an Addition," "Treatise on Diet," &c.

[Continued from p. 279*.]

OUR persuasion of the existence of several of the lesions constituting dyspepsia, are founded on inference rather than direct observation. Thus cases present themselves of persons in whom muscular power and the process of sanguification are both impaired. They are languid, pale, complain of cold feet, &c. The lips, conjunctiva, tongue, fauces, present an exsanguine appearance; but the tongue is clean, and there is no ill taste in the mouth, and no ill-odoured eructations. When by such patients a sensation of weight and hardness in the stomach is complained of, with a want of appetite and flatulence, we infer that the mucous membrane and the muscular coat of the stomach share the anæmic and atonic condition in which the parts of the body within reach of observation are. We conclude that the intestines are in the same state as the stomach; that, throughout, the secretions want spissitude and copiousness; that the biliary secretion is deficient in quantity, inert in quality; and, acting on these inferences, we seek to promote sanguification and energy and sufficiency of secretion, by iron, the vegetable bitters, mineral acids, &c. Pills, or infusions of taraxacum and gentian, combined with sulphate of iron; quinine, and sulphate of zinc; the infusions of quassia, calumba, simaruba, and in cases requiring more stimulant mea-

* To the following mistake of the printer, affecting as it does the whole sense of a passage of considerable importance in my last paper, I am anxious to call the reader's attention here, instead of among the *errata*, where it might be overlooked. In my last paper (*MED. GAZETTE*, p. 273) it is stated, "Dr. Paris supposes this excess to indicate a failure in the excreting action of the skin, by which a proportion of this acid should pass." In the MS. it was as follows, and should have been printed: "Dr. Paris supposes that turbid urine may be also owing to the absorption of spurious chyle, separated by the kidney from the circulation. Uric acid, in excess, gives a reddish brown tint to the urine (though this hue is in part owing merely to colouring matter), and Dr. Philip supposes this excess to indicate a failure in the excreting power of the skin, by which a proportion of the acid should pass."

tures, the infusion and tincture of euparia, will be found useful. With all of these, the powder or wine of ipecacuan may be advantageously combined, as, in small doses, it peculiarly promotes the secretions of the mucous membrane of the stomach and bowels. In this respect it is an extremely safe and valuable agent. If the diet has been large and sloppy, it must be reduced; farinaceous and fibrous food must be substituted; vegetables must be abstained from; spices, curry, ginger, must be used. It may be necessary to order wine in addition; and if the patient is a young unmarried woman, (as frequently happens), frictions of the spine and abdomen with a mixture of acetic acid, camphor and alcohol, will be of advantage. The bowels must be regulated by anti-prandial and night-pills of aloes, gentian and sulphate of iron.

In such cases, great advantage may be derived from angelica, artemisia absinthium and camomile.

A state, just the reverse of the one now described, sometimes presents itself. This consists in a hyperæmic condition of the mucous membrane. It is, of course, identical with the gastric "hyperæmie" of Andral, and with the abdominal plethora of several German writers, and when associated, as it often is, with irritation or sub-inflammation, constitutes the "gastrite" of Broussais. It is characterised by redness and fulness, sometimes by soreness of the mucous membrane of the tongue and fauces. Owing to this condition of the membrane, there is a feeling of constriction or narrowing of the œsophagus, which, as well as the tenacious mucus secreted during the affection, render deglutition somewhat difficult. The stomach feels as if diminished in capacity; the ordinary volume of aliment seems to oppress it: the patient attributes the feeling of distension to flatulence. When cold fluids are swallowed, their sudden cooling effect on the heated mucous membrane of the stomach is remarked by the patient, which in health does not happen. That the condition, now noticed, of the mucous membrane of the fauces, œsophagus, and stomach, extends along the whole intestinal canal, is often made evident by the following symptoms. The patient complains of a general fulness of the ab-

domen, analogous to that produced by flatus; but while distension from the latter is from time to time got rid of, with its cause, the fulness due to abdominal plethora is permanent. In addition to this, the anus is often tumid; the mucous membrane protrudes, and hæmorrhage or exudation of blood from its everted surface takes place, particularly at or after a stool.

This state of the mucous membrane has various ill effects. It interferes at once with the secreting and absorbent actions of that membrane, and it is very apt to pass into a condition of chronic inflammation. Its speedy removal is consequently desirable. With this view, the patient is immediately, and in the first place, to be put on an acidulous diet. Without abandoning the use of animal food, of which, however, he must eat sparingly, he is to make a *considerable* portion of his aliment consist of any of the following fruits which may chance to be in season; grapes, strawberries, mulberries, gooseberries, cherries, pomegranates, rhubarb, lettuce, celery, &c. Such diet astringes at once and cools the mucous membrane, and soon removes that irritable and tumid state, by which the nerves, the glands, and the mouths of the secretory follicles, are impeded. In addition to what may be called the hygienic means now noticed, medicinal measures are to be adopted. The liquor ammoniæ acetatis, the citric, tartaric, acetic, and oxalic acids, the nitrate, bi-tartrate, and binoxalate of potass, given in draughts, twice or thrice daily, will be of great service.

Besides the dietetic and medicinal treatment now enumerated, leeching on the epigastrium, or at the anus, may be necessary, in patients past middle life, of full habit of body, subject to headache, or to periodic hæmorrhoids, especially if these last have failed to appear after the usual interval. Associated with the dyspepsia caused by this tumid state of the mucous membrane, constipation of the bowels, and a dry heated condition of the skin, are often found; and it is remarkable that both these symptoms are moderated or dispelled by leeching at the anus or on the epigastrium, and unless the spontaneous hæmorrhage takes place, with difficulty yield without leeching being adopted.

At present we confine our notices to derangements of the stomach only (exclusive of biliary and other complication) and to such derangements simply of that organ as are not accompanied with marked disorder of the gastric secretions. We therefore omit, for the time, reference to those cases, in which, along with a tumid and irritable state of the mucous membrane, there is a furred tongue, an ill taste in the mouth, ill-odoured breath and eructations, nausea, and stools preternaturally foetid. While the cases we have above noticed, and the two or three we have yet to advert to, do not require *alteratives*, these last referred to as characterised by vitiated secretions demand a treatment into which alteratives more or less enter. Previous, however, to considering these, I shall very briefly advert to excess in the secreting and diminution in the absorbent power of the stomach, and to morbid sensibility, as it has been called, of that organ.

Follicular gastric dyspepsia, follicular gastrorrhœa, or stomach gleet, and pyrosis; excess in certain of the stomachic secretions.

Follicular gastric dyspepsia, as Andral terms it, gastrorrhœa as it is designated by others, and stomach-gleet as it is vernacularly named, consists in an excessive discharge from the mucous follicles of the stomach. I may here observe, that in no case of excessive secretion of the stomach have we reason to suspect that the gastric juice is the subject of that excess. Stomach-gleet may be regarded as simply a catarrh of the organ, induced by changes of temperature, sometimes by local irritation; sometimes it arises from a poor and sloppy diet. The fluid secreted in gastrorrhœa is sometimes so abundant as to rise into the mouth; sometimes it passes off in mild diarrhœa. Its treatment is very simple. If the discharge is insipid in taste, and unaccompanied with heartburn, pain, and heat at the epigastrium, it is to be treated with small doses of the chalk mixture, to which some ipecacuan is added; an occasional dose of castor oil being interposed. It is then to be peremptorily restrained by kino, alum, or opium.

Pyrosis is a severer affection. Its name indicates the "fiery" or acrid

character of the fluid excreted. The pyrotic discharge probably comes from those glands, of which an account is given in Dr. Boyd's inaugural essay on the mucous membrane of the stomach, and of which Müller's Physiology contains an engraving. In pyrosis, the fluid is usually limpid and austere, sometimes very pungent and biting. Its discharge is generally accompanied with irritation of the stomach, with pain, heat, hardness, and with severe heartburn. It arises generally from long use of ardent spirits, or bad food, from salt meat, or crude vegetables, &c. Gentle laxatives are to be employed; and if necessary a blister or mustard-plaster or stimulant frictions are to be applied to the epigastrium; almond mixture and liquor ammoniæ acetatis to be freely ordered; subsequently pills composed of quinine and extract of hyoseyamus. Conjointly with this treatment, a farinaceous and light animal diet is to be adopted. Dr. West recommends a milk diet.

The absorbent action of the stomach (and I may add of the intestines) seems occasionally to suffer an almost total suspension, and the consequent distension is apt to be imputed to flatulence. In this case there are eructations of wind and fluid of a sour taste and smell; sometimes vomiting of a large proportion of the liquid ingesta, though hours have elapsed since the last meal: the bowels are usually remiss without medicine, but are easily induced to act by even a moderate purgative, and then the stools are copious and watery; meantime the kidneys act sluggishly; indeed, the urinary excretion almost entirely ceases.

This state of things appears to be sometimes owing to marked hyperæmia of the mucous coat of the stomach, the turgid state of the membrane probably impeding the usual prompt imbibition of the aqueous portion of our food. Sometimes it seems to be caused by the presence of a preternaturally inspissated and tenacious mucus, the result of chronic irritation of the mucous membrane. This slimy discharge, by which the tongue, fauces, and internal surface of the stomach, are coated, impairs appetite, and sometimes occasions nausea. It must in the first place be dislodged by emetics, and its removal then prevented by absorbent and gently laxative means, as magnesia

and rhubarb; the compound chalk and compound scammony powders combined, &c. The patient should abstain from oleaginous and fatty articles of food, and, by using liquids moderately, seek to produce on the absorbent function of the mucous membrane, what Dr. Todd calls "the stimulus of demand." Dr. Johnson, in his perhaps too unqualified recommendation of gruelly aliment, in dyspeptic cases, seems to have overlooked the derangement under consideration.

Impaired absorption in the bowels seems greatly to depend on an inert action of the liver. In tumid and indolent states of this organ, the bowels are often surcharged both with flatus and fluid, the kidney being also very sluggish; and it is remarkable how rapidly these inconveniences disappear on the administration of a few drops of the wine of colchicum, or a few grains of calomel.

Morbid sensibility of the stomach and bowels: Magen-krampf, Magen schwerz of the Germans.—Morbid sensibility of the stomach is of two kinds. The first consists of that excessive tenderness on pressure at the pit of the stomach, or on the taking of stimulants, which any inflamed or irritated organ or part generally betrays. In this way the stomach is sometimes so sensible that any but the mildest food causes suffering at the moment of ingestion; this, however, is rare. More usual it is, for aching, grinding, gnawing sensations, for heat, soreness, distension, &c. to occur a few hours after a meal, more especially if that meal has included any objectionable articles, such as flatulent vegetables, very rich soups, sauces or puddings, pastry, &c. Such articles seem both to provoke irritating secretions from the stomach itself, and also themselves to assume acrid properties. By these two causes, the mucous membrane of the stomach, already in a sub-inflamed condition, and its nerves already preternaturally sensible, soon become the seat of additional suffering and excitement.

Morbid sensibility of the kind and from the source described requires of course abstinence from all stimulant or indigestible articles of food, and the total disuse of alcoholic, vinous and malt liquors, spices, curries. A diet of light animal food or white fish, with farinaceous and herbaceous vegetables,

must be adopted; ripe acid fruits may also be freely employed. The nitrate, acetate, or carbonate of potass, in almond mixture, or the last in effervescing draughts from lemon juice; or effervescing draughts of citric acid and the bicarbonate of soda; or a course of Seltzer or Vichy waters, is to be employed. Some light bitter vegetable infusion ought also to form part of the treatment; the actions of the bowels and skin, being carefully regulated.

There is another species of morbid sensibility of the stomach which seems to be of a nature purely nervous; frequently affecting hysteric and hypochondriac patients. It is a simple gastrodynia, without any apparent derangement of secretion, or any noticeable augmentation of the vascularity of the mucous membrane. The tongue is clean; the breath untainted; the mouth has no ill taste; the evacuations no preternatural factor; the appetite is not except occasionally affected, and piquant food, and even vinous drinks appease rather than increase the stomach-ache. The pain is variously described as a lancinating, twinging, grinding sensation; as a feeling of *hardening* or of weight, as if a bar pressed upon the epigastrium.

I have always found the metallic tonics, combined with vegetable sedatives, most servicable in such cases. Doses, gradually increased, of the tris-nitrate of bismuth, and the extract of hyoseyamus, are often successful. The nitrate, oxide, and chloride of silver, with extract of belladonna, will be found not less so. In other cases, the ethers, to a dose of which two or three drops of the solution of morphia are added, at once remove the gastralgie sensation. Hydrocyanic acid, laurel water, and sometimes merely the compound cinnamon powder, will give relief. In one case, however, in which all other means failed, a warm plaster on the epigastrium completely succeeded.

Besides that of the stomach itself, it is to be noticed that the morbid sensibility of various remote parts and organs, as of the skin, the organs of sense, particularly the eye and ear, and nervous affections of the extremities, as, for example, spasms and pains in the calves, &c. are to be removed by means addressed to the stomach, and introduced through it into the system. It is certain that in

many of these affections mere local means fail, though possibly (as with mercury in syphilis) assiduous friction over principal lymphatic tracks might be as effectual as if the curative agents were given by the mouth.

Acidity of the stomach, or heart-burn, has several origins, or rather is of different kinds. The acidity is sometimes chargeable on the food; sometimes on the stomach. Very acerb articles of food; ill-baked bread, salted meats, hard and ill manufactured or stale malt liquors; soups and French wines taken together; acid fruits not ripe, rhubarb, gooseberry, and currant pie; cheese; vinegar in salad, much tea or sloppy food, are apt, with persons whose digestive organs are not vigorous, to create heartburn. Any simple alkaline draught will give immediate relief from this: the prevention of its recurrence is of course easy.

Another kind of heartburn is that which occurs in persons who yet have refrained from any articles of food likely to cause it. In such persons digestion is generally remarkably tardy, and there seems reason to suspect that in their case the gastric juice, or juices, which, when normal in quality and amount, operate on aliment antiseptically, must be either scanty or inert; and in these circumstances, the heat and moisture of the stomach will, in a few hours, render even farinaceous food more or less acescent.

Acid secretions seem in other cases to be generated with great facility and profuseness by the stomach itself. The slightest irregularity in diet, or the taking of any but the blandest food, seems almost immediately to provoke a copious flow into the organ of much sour fluid.

In the former of these two kinds of heartburn, piquant food and condiments are indicated, along with the vegetable bitters, with which aromatics are to be combined. The latter requires the use of *cusparia* in infusion of *calumba*, *cascarilla*, *quassia*, *camomile*, with some slight alkaline addition.

While the acid directly arising from acerb articles is promptly relieved by a *pro re nata* use of an alkali, the acid generated by the stomach itself is usually constantly recurring, and requires, therefore, a frequent repetition of antacids, and this circumstance assists us in our diagnosis of the particu-

lar kind of heart-burn with which we may have to do.

In other cases alkalies do not relieve heartburn, for the simple reason that the irritating fluid is acrid not acid. Thus, alkalies fail to remove the burning sensation in many cases of pyrosis; while draughts containing the liquor ammoniæ acetatis, the nitrate of potass, with extract of hyoscyamus, or infusion of hop, a free use of ripe acid fruits, and of salads, is often of essential service in the stomachic derangement characterised by this form of heart-burn.

Heartburn, or a sensation, at any rate, which the patient, from its resemblance to heartburn, describes by its name, is also occasionally owing to an irritable sub-inflammatory condition of the mucous membrane, similar to that which sometimes exists in the mucous membrane of the rectum and anus, and in consequence of which every stool is followed by a smarting sensation, as if from an excoriated surface. This form of irritable mucous membrane is frequently observable in scrofulous subjects, and exactly as the strumous conjunctivitis of such patients, is best treated by escharotics. The nitrate of silver, the sulphate of copper, the chloride of gold, the chloride of zinc, are to be brought in contact with the mucous membrane of the stomach *in as large doses as possible*. These are to be given in conjunction with quinine and conium, aconitum, hyoscyamus, belladonna, stramonium. It is amazing with what rapidity, irritability of the stomach of this nature and in such subjects, disappears under this treatment.

Andral seems to think, though from a somewhat fanciful analogy, that gastric acidity may be sometimes owing to degeneration of the secretion of the pancreas; and Guersent is of opinion that occasionally such acidity may be derived from deranged secretion of the salivary glands. Granting these suppositions to be well founded, we are inclined to think that the treatment need not differ from that which is necessary when the stomach itself is the seat of derangement.

In other cases, the sensation of heartburn is unquestionably caused by the presence in the stomach of retrograde bile. Beaumont seems to be of opinion that in St. Martin's case a deranged state

of the stomach, as from irritating diet, invited, as it were, the appearance of bile in that organ, causing it to flow backward instead of forward. There is also reason to suspect that when bile does pass into the stomach it is generally of an unusually acrid character, since, in the event of vomiting being induced, patients complain of the extreme pungency and bitterness of the ejected fluid. A great secretion of mucus, amounting almost to a gastrorrhœa, usually accompanies, or, perhaps, to speak more properly, is caused by the presence of retrograde bile in the stomach.

Cases of this kind are to be treated by occasional emetics of potassio-tartrate of antimony; by leeching on the right hypochondrium, if there are tenderness and fulness there; by small doses, at intervals, of the chloride of mercury (in preference to blue-pill); by infusion of taraxacum with tartrate of potass; and by an aliment in which fibrinous food enters but moderately, and from which oily and adipose matters, as well as cheese, malt liquor, and much tea, are excluded.

Derangements of the secretions of the stomach and the tongue as an index of the state of that organ.

Before proceeding to consider duodenal, biliary, and pancreatic derangements, we may attend for a moment to the value of the appearance of the tongue as an index of the state of the stomach. In cases of fever, both Andral and Louis found the tongue foul when the stomach was healthy, and the reverse. Both of them, in parts of their works, express themselves as if they did not regard the state of the tongue as a very faithful indication of that of the stomach: yet in other parts they speak in a contrary manner. Thus we have, in one place, Andral alleging: "Nous avons vu que, dans la plus part des maladies de la partie sous-diaphragmatique du tube digestif, la langue présentait des alterations importantes à noter, sous le rapport de sa couleur, de son volume, de sa sécheresse, des enduits dont elle peut être revêtue."

Louis, on the other hand, says, indeed (though this is in regard to fever, not dyspepsia), "On ne doit examiner la langue que pour elle-même:" yet in a table of 57 typhoid deaths, only 15 "eurent la langue dans l'état normal,

ou du moins humide et sans augmentation de la rougeur qui lui est naturelle." He says elsewhere: "We can easily believe that if the back of the mouth had been examined, as well as the tongue, in all these cases, the proportion of those in which the velum palati, and the tonsils, were more or less altered, would have been found to be more considerable."

But whatever may be the case in typhoid or other disease, it is certain that in ordinary derangements of the stomach induced by dietetic excesses, an almost invariable coincidence between the tongue and stomach is observable: so Beaumont informs us, and his opportunities of judging were, as the reader knows, as direct and conclusive as they were unusual. This writer not only affirms the general identity, in St. Martin's case, of morbid appearance of the tongue and stomach, but also gives us the most important practical information, that while headache, with pain at the pit of the stomach, may accompany morbid states of the gastric mucous membrane, the appetite, at the same time, may be *craving*.

There is another point to be kept in view, in order to the removal of dubiety in regard to the tongue considered as an index of the state of the stomach. In pure nervous dyspepsia and gastrodynia, caused by simple lesions of function and sensibility, it is not contended that the tongue necessarily presents a morbid aspect, or that even the stomach itself would, could it be looked into. But this is not the question. The point is, whether, *when* the stomach is furred, aphthous, vascularly injected, the tongue be not commonly in a corresponding state. Beaumont affirms it to have been in St. Martin's case, and I apprehend it usually is so.

Derangements of the secretions of the stomach.

This is a very important, but, in some respects, an obscure and difficult subject. Every particular secretion is probably exposed to derangement by failure or disorder of any other secretion. "Secreting membranes," observes Müller, "by virtue of their influence on the circulating fluids, and independently of the nerves, stand in an antagonistic relation to one another." True and important. Thus the cutaneous transpiration antagonizes the

pulmonary and urinary. But it is further to be noticed that the same organs which antagonize often supplement each other: thus, the constipated cutaneous surface is supplemented by augmented action of the kidney, &c. The excess, then, the deficiency, or the degeneration of any secretion, should lead us narrowly to scrutinize the condition of other secretions.

Dr. Philip points out a simple and almost mechanical cause of derangement of the gastric secretions: "It is not by its effects on the muscular fibres alone that over-distension (of the stomach) tends to produce indigestion, Its operation on the nerves of the stomach itself is equally injurious. It is by this effect that it produces that peculiar pain, restlessness, and sense of oppression, which attend an overloaded stomach. *Such irritation of the nerves of a secreting surface cannot exist without affecting its secreting power.* The gastric fluid becomes less capable of its functions, &c."

In his work on Gastro-Enterite, Louis makes an observation of some importance. "In cases," he says, "in which the tongue was covered with a yellow coat more or less thick, its mucous membrane beneath was not red, and presented no sign of inflammation: whence it is to be concluded, that the secretions may be more or less profoundly altered without the organs, which are the seat of them, being inflamed."

The treatment of derangements of secretion of the stomach, or of any organ, is of course to be considered in connection with the cause of that derangement; and no rules can be given in reference to the former without a knowledge of and a due regard to the latter. I have already observed that in many of the persistent derangements of secretion, particularly of the digestive mucous membranes, *alteratives* of various kinds are required.

Derangements of the duodenum.—This intestine is liable to the same derangements as the stomach. From its position, and from their possessing a common mucous membrane, it almost necessarily participates in every affection, more especially if at all chronic, of the stomach; and not of it alone, but also of the liver and pancreas. It is equally obvious that a morbid condition of the duodenum will have a very direct influence on the adjacent organs

now named. "The glandular tissue of the abdomen," observes Müller, "is not merely a development, as it were, of the efferent duct, and this a prolongation of the mucous membrane, but the glands connected with the intestinal canal are originally formed as diverticula from it." And again: "All secreting organs, just as they reflect irritation in themselves upon their efferent ducts, are also sympathetically affected with irritation when their efferent ducts are first affected."

I need not remark that the precise functions of the duodenum are unknown, nor need I minutely describe its structure and position. While the mucous membrane of the stomach is white, or, during digestion, of a rosy hue, the duodenum is of a very pale grey, except after receiving the chyme, when it also becomes red from the afflux of blood. It may be divided into three parts: the pyloric-valvular, extending an inch and a half from the pylorus; this portion is thickly studded with the glands of Brunner. Next comes the middle part, where the biliary and pancreatic ducts open, and the valvulæ conniventes and numerous villi appear. The third and last part considerably resembles the jejunum.

It has not been my intention, in these papers, to notice any of the *structural* affections of the digestive organs. I pass over, consequently, cases of contraction, thickening, ulceration, &c. of the coats of the duodenum. Its anatomy, what we know of its physiology, its situation, and its relations, suffice to shew that it must be subject to all or many of the lesions incident to the other portions of the digestive tube—to distension by flatus or by food, to hyperæmia and anæmia, to deficiency, excess, or alteration of its secretions, &c. Still, I would observe, that, during life, I know not a single conclusive pathognomonic symptom of duodenal disease. In the works, indeed, of eminent British and foreign pathologists, we meet with accounts at once ample and minute of the signs of derangement of the duodenum. And Dr. W. Philip, in regard to impaction by food of this intestine, which he seems to consider a not infrequent and often persistent affection, makes the following most extraordinary statement:—"The physician, without saying a word, may generally know, by

laying his hand on its [the duodenum's] region, *even on the outside of the clothes*, whether the case is recent or not:" while the truth is, that there are cases of protracted dyspepsia in which we have reason to believe there is no distension, flatulent or alimentary, of the duodenum; and even when we suspect there is, the verification of our suspicion is far from easy, if it be not impossible. In cases of duodenal disease which have been under my own observation, many of the symptoms laid down by authors have been absent. Thus, in the detail of these given by Dr. Copland, are enumerated the following: "unimpaired or even ravenous appetite, and an irregular, or even relaxed state of the bowels; the evacuations being copious, crude, unnatural, and offensive, are strong evidences of inflammatory action in the duodenum, &c." Besides that these symptoms were wanting in cases of my own, it is known that they accompany several other diseases besides those of the duodenum. In truth, diseases of the pyloric extremity of the stomach, of the left, posterior, and inferior side of the liver, of the pancreas, of the jejunum, of the ascending or transverse colon, and even of the right kidney, may all be confounded with affections of the duodenum, as duodenal affections may be confounded with those. It is further to be noticed that affections of this part of the intestinal canal, even when, in their origin, idiopathic, do not long remain so, but almost necessarily and speedily involve derangement of the stomach, liver, and pancreas, and more or less of the whole distal portion of the intestinal tube.

The anatomists and physicians of the last and the preceding century attached great consequence to the duodenum, and considered that its derangements were nearly as important as those of the stomach: and there are sundry reasons for believing they were right in so doing. Though we are ignorant of the precise extent of the functions of the duodenum, yet the number of its glands, and its being the spot where the conversion of chyme into chyle takes place, seem to indicate that these functions are second only to those of the stomach. It is probable that *after* the alimentary fluids pass the duodenum, and provided that, till there and then, digestion has been

regular, all the subsequent steps of assimilation and excrementation will be normal and complete. It is, on the other hand, likely that, even though chymification may have been duly performed, unless the healthy condition of the duodenum shall ensure right chylicification, assimilation will be ultimately imperfect. It is easy to suppose that the secretions of the duodenum, if unhealthy, will disorder the chyme as well as the secretions of the liver and pancreas, which it receives.

The treatment of derangements of the duodenum, is, with perhaps the exception of emetics, identical with that of the corresponding ones of the stomach. For acting peculiarly on this portion of the intestinal tube, senna, sulphate of magnesia, and sulphate of potass, are, I think, recommended respectively by Drs. Todd, Paris, and Warren. Aristotle, in one of his problems, seems to assume that hellebore is the appropriate purgative of the upper part of the intestinal canal, while scammony acts on the lower portion, and claterium on both. My own experience would lead me to prefer calomel and jalap, and the tartrates of soda and potass, to any of the above. As regards emetics, while in many cases of gastric oppression an emetic procures speedy and effectual relief, it is only by somewhat violent and inverted action that the duodenum can be freed by this method from the embarrassment of vitiated secretions or alimentary accumulation. The appropriate evacnants, then, of this intestine are purgatives. When, accordingly, oppression, distension, puffiness, weight or tearing or lancinating sensations, are experienced, from one hour to three hours after meals, deep-seatedly about the seventh or eighth rib, and extending towards the right hypochondrium, kidney and loin, we have considerable reason to suspect that the duodenum is the site of these symptoms, which, if so urgent as to demand prompt relief, will generally yield to the administration of a few grains of calomel and the compound jalap powder; soon followed by a draught containing the tartrates of soda or potass, compound senna infusion, tincture of jalap, and aromatic spirit of ammonia.

In regard to leeching, blistering, or cupping, in suspected affections of the duodenum, I have had little or no ex-

perience, and *à priori* would not be disposed to augur any but the most general and slender advantage from these means in such a case. In flatulent distension and in impaction from muscular atony of the duodenum, aromatic friction may be advantageously added to other means.

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[To be continued.]

PRACTICAL OBSERVATIONS ON MALINGERING.

By FRAS. W. GRANT CALDER, ESQ.

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[Continued from p. 324.]

A Rheumatic Case—Another—A Case of Dropsy of the Pericardium—A Case worthy of notice—Another—A knowing one detected.

I CANNOT better illustrate the great care which should be manifested in speaking either to patients, or of patients, however trifling the nature of their ailments may appear, than by relating the following fatal case of rheumatism. D. W., aged 43, one of the most hale men of his years one could well meet with, in so far as the appearance of his countenance and bodily frame was concerned, was for upwards of a year previous to his death very frequently in hospital for attacks of lumbago, and "flying pains" in his limbs. Mustard poultices, and a few colchicum draughts, never failed to relieve him quickly, and after a few days' sojourn in hospital he was from time to time discharged. When out of hospital he was excused his regular duty, as he protested against his being able to do it, but he seldom remained long even at the most light employment a dragoon can be put to, viz. the merely taking care of his horse, for he was constantly presenting himself at the hospital asking for liniments for his back or limbs. The period of his service was just completed, and it was thought that he was making the most of these pains for the purpose of obtaining his discharge. His remarkably hale-like countenance, his muscular frame, and his youthful head of hair, made us hesitate for some time to recommend him to the Commissioners of Chelsea Hospital as one unfit for further service, for his head had not a

grey hair on it, neither had it lost, to all appearance, one that it had numbered when he was twenty. His whole mien was more that of a man of thirty than one of forty-three, and his face never once indicated anything of that suffering in loins and limbs which he so often complained of. At length it was finally arranged that he should be discharged the regiment, in consequence of his liability to chronic rheumatism; and he was so. He returned from Chelsea to the barracks the day on which he passed the Board of Commissioners, and complained more than ever of his loins. A mustard poultice and a few colchicum draughts, however, again relieved him. In a few days after this he became worse, and was confined to his bed: the disease now assumed more the form of a regular attack of acute rheumatism than it had ever done before. Well-marked metastasis to the chest quickly took place, and he died in thirty-six hours after, despite every effort to arrest the fatal consequence. Even while *in articulo mortis*, his blooming countenance did not forsake him entirely, and but ill accorded with the upturned eye, the fallen chin, and the last efforts at respiration. Never was the Roman adage, *Fronti nulla fides*, more truly verified than in this man's case; and when joked on the subject, he used to admit that it was really unfortunate for him that it was so. I scarcely remember to have lost a man whose case I can look back upon with less comfort than this man's; not that I had ever suspected him of telling a story about the nature of his complaints, or that I had ever considered him, or treated him at any time as a malingerer, in the usual acceptation of that term, but from his remarkably healthy countenance, his youthful appearance, and the total absence of all signs whereby we could arrive at any collateral evidence in support of the truth of his statements, as well as from the period of his service being just completed, and the great probability therefore that he wanted his discharge, I was induced to think lightly of his case, and used sometimes to jeer him about his "pains," and to tell him that he was not to go and enlist in another regiment after we had discharged him. At this he used merely to shake his head, and quietly say, that he should be but too happy

were he in a state of health to permit of such a step. The quickly fatal result convinces me now that he must have suffered as he stated; and it ought to put us all on our guard against treating lightly, the cases of those whose only ailments may be—chronic rheumatic pains.

Feigning disease belongs to all classes of society, and to all conditions of life. If a servant-maid can deceive the doctor, and get him to inform her master and mistress that she is under his care for an injury received in their service, she no doubt thinks that she is better entitled to their sympathy and kindness, than if the doctor was to say that she was confined through an illness in nowise depending on the nature of their employ. An artful servant may pursue such a plan, and it is requisite therefore that we should always be on our guard. In the following case the girl may have fallen on her elbow as she asserted; and as the disease came on so soon after, it does not appear unreasonable that she should have attributed its origin to the said fall; but further experience of her convinced me that she was both knowing and artful, and ever anxious to attribute all her ailments to some one thing or another connected with the duty her mistress required of her. Indeed, servant maids, and probably servants generally, are very anxious, and properly so too, to be thought healthy, and free from liability to any particular diseases—more particularly diseases which are apt to come on periodically—such as gout and rheumatism; for few masters would care about engaging such servants were they made acquainted with such facts, and it is good policy therefore for them to be mute on what so vitally affects their best interests.

Mr. F.'s housemaid fell down a few steps of the stair whilst busy cleaning them. She did not mention the circumstance until the following evening, when she said that she was unable to move the right elbow-joint in consequence of the injury it had received the day before by the fall. Up to that time she had done her duty regularly, and had said nothing about it. On the following morning she felt so ill, that she was obliged to remain in bed. I was sent for, and was told on my arrival that she had received a severe injury

to the right elbow-joint, and that they were afraid something was broken. I went up stairs, therefore, prepared for the effects of an injury. I found her lying in bed with the affected arm exposed, and the elbow a good deal swollen. She stated that she could not move it herself, neither could she permit me to do so for her. She said likewise that she had fallen upon the joint, and attributed that to be the cause of the swelling. I observed that the swelling was chiefly confined to the neighbourhood of the external condyle, and the interval between it and the olecranon; and as I here found swelling and heat, and inability to move the joint, and then took into account its reputed cause, I had little doubt of there having been an injury of a severe nature. I therefore stated to her that I must be allowed to examine the joint particularly: to this she consented. I commenced by taking hold of the thumb of the affected arm; she then immediately roared out from pain. "Ah!" I said, "you must have hurt your thumb too?" "Oh no," she replied, "I have not hurt my thumb, but the pain of my elbow-joint stretches down to my thumb, and up to my shoulder." There was no apparent redness or swelling of the thumb, yet the gentle touch I gave it, as it was attended with so much pain, made me inquisitive, for I was satisfied that the elbow-joint was in nowise disturbed by what I had done. I therefore touched it again, by pressing with the finger on the metacarpo-phalangeal articulation. This made her immediately call out, and she shrunk from the slightest pressure. I now saw that I had more to deal with than in the first instance I was led to expect. I therefore sat down, and on questioning her again, got the history I have already given. She denied ever having had rheumatism. She looked about 26 years of age; her pulse was better than 80, and somewhat hard; she was very hot, and had a foul tongue, but I learned that she had perspired much during the night. I again looked at the elbow-joint, and I now saw distinctly that there was a blush of redness upon it of an unhealthy character—not clear and bright like that of phlegmon, but of a darker colour, and much like that of rheumatism. Moreover, she could not permit the shoulder-joint to be

moved, and yet it was not swollen, nor to all appearance in anywise affected. The case, however, was quite clear: she was treated for rheumatism without any further delay, and quickly recovered. But so liable was she to the affection, that her mistress was afterwards obliged to part with her on its account alone.

Had the subject of the following case not been an officer's servant, to a certainty he would have been suspected of malingering. As he was circumstanced, however, he had a good situation, and an indulgent master. In a pecuniary point he could not have bettered himself in civil life, and even if he could, he would not I believe have left his master, so much attached, it was well known, was he to him. E. L., aged 39, from time to time for two years previous to his death, complained of different anomalous symptoms, which for the most part were looked upon as being nervous. At one time he was seized with something like an attack of asthma, for which he was bled with partial success at the time. But as a general rule he never could describe his feelings otherwise than that he "felt weak all over, and was unable to tell what was the matter with him." Occasionally he was troubled with slight palpitations of the heart, but on the whole his appetite kept good, and he felt "pretty well, although not the man he used to be." His pulse was often quick and running, but his manner in the best of his days was always of a peculiarly excited and nervous description, and such as might lead one to expect something of this nature. In the last ten weeks of his life, however, he laboured under marked symptoms of dropsy of the pericardium, and in consequence was confined to bed during the greater part of that time. On examination after death we found the pericardium very much thickened, and immensely large, containing no less than five pints of a straw-coloured fluid. The heart itself was healthy, and so was every other organ of the body. It will be observed that the interesting part of the case is, that for one year and nine months it puzzled wiser heads than mine to detect anything the matter with him. The general opinion was that he was a hypochondriac.

Thanks be to heaven, the subject of the following case was never set down

as a malingerer, and yet neither my colleague, nor myself, could ever say with any thing like certainty, what really was the matter with him. From the day he enlisted until the day he left the regiment to proceed on a sick furlough, a period of two years and a half, he appeared always very much the same person. He had neither lost flesh, nor had he gained any during this time, and he never looked a diseased man. Yet he constantly complained,—was very much in hospital, and almost always on the convalescent list. He was what is called a busy man, and although never carrying much muscle, nevertheless what he did carry was by no means loose or flabby, but on the contrary was firm enough. He had what is known as a thick skin, and he was both broad in the shoulders and free from well-marked scrofulous taint. G. G. aged 20, a native of Herefordshire, a farmer by occupation, was enlisted for the regiment on the 30th of July, 1841. On the 5th of August, six days afterwards, he was admitted into hospital ill of simple continued fever. In this affection he was ten days in the house. On the 3d of September he was again admitted under the same head, and again discharged after the lapse of ten days. His disease on his latter admissions was denominated chronic rheumatism, but the truth is, that he never attempted to describe his feelings, and mostly replied to the effect that he felt weak and unable to proceed with his duty. He was always a quiet and harmless-looking man, and when in his best health, invariably conducted himself with great propriety. He was granted a sick furlough, in order to try what good his native air might do for him, but shortly after he went home he died, and as he lived in a remote district of the county, his body, I fancy, was not opened; at all events we merely received the usual certificate of his death. I honestly confess that I never could detect the nature of this man's complaint, and I have permission to state the same thing of my colleague, Mr. Bett. Mr. B., indeed, says that he observed that at all times he had a small pulse, and that it was invariably somewhat quick, but that with these exceptions, there appeared no reason why the man should not have been able to go on with his duty.

Recruits are so apt to be home-sick during the first few months of their service, that the trifling ailments on account of which they keep applying at the hospital for the most part meet with but ordinary attention. The following case is, however, a sad instance of mistake committed in consequence of acting after this manner. B., aged 22, joined the regiment on the 15th of October. He had been a miller, and had in consequence been but little accustomed to stables and out-of-door employment. On the 13th of the following month he came to the hospital complaining of diarrhœa. He felt so weak on account of it that he said he was unable to go on with his drill: he was therefore admitted into hospital. His tongue was clean, his skin felt natural, and his pulse was not above 70, and was besides good. The looseness had only been of two days' duration, and he had no pain, or uneasiness in the belly, save when at stool; and then it was merely a little griping which he complained of. He was put to bed, and had some Dover's powder administered in small doses, three or four times a day. This, however, did not prove effectual, and therefore he had some castor oil given to him—the inference being that his bowels might have been loaded ere he was attacked with the diarrhœa, and in consequence made him feel very unwell. A full dose of the Pulv. Dover. was therefore administered, and with the effect of completely stopping the looseness: but now he began to be affected with sickness and occasional vomitings. These were combated by mustard poultices to the epigastric region, followed up by a blister, and the effervescing draughts. By these the sickness and vomiting were likewise stayed; but he now began to complain that he felt a heaviness in his head, and his pulse, which all this time had remained steadily at about 70, began to rise, and to reach in the evenings 85 and 90. It likewise became more firm in its character, and was evidently more contracted and of less volume. I undressed his left arm in order to bleed him, when to my surprise I found that he could not extend the elbow joint; it was fixed at an angle of about 75°, and any attempt to extend it, only created great pain without altering its position. The explanation he gave

of this was, that he had some months before joining us suffered from a severe attack of rheumatism in the joints, and that it had remained stiff to a certain extent since. I did not now doubt but that he was seriously ill, for this circumstance enlightened me. I felt assured that I had a dangerous attack of rheumatism to grapple with, for the reason that the disease showed a decided inclination to keep to the internal organs. He was therefore freely bled from the arm, and, as so often happens in rheumatic cases, the blood looked in every respect healthy. He was likewise cupped on the nape of the neck, leeches on the temples, had blisters applied to both knees, and every attempt made to restore the diarrhœa by the diligent use of the vin. colchici and Epsom salts, in the form of oft-repeated doses. This succeeded in so far that he was effectually purged in consequence, but his state was nothing amended thereby. The feeling of weight in his head continued, he began to squint with the right eye,—ultimately he became occasionally delirious, and sunk on the 4th of December, having been just twenty-two days in hospital, and fifty-one days a soldier! During the last few days of his life an attempt was made to touch his gums by means of calomel, and a blister had been applied both to the nape of his neck and to his scalp generally. These rose effectually, but without producing any marked benefits.

It is a curious fact that this man's tongue was remarkable for its cleanliness throughout the whole of his illness: indeed, it ever presented every characteristic of a very healthy tongue, and his skin continued from first to last to vary very little in temperature from its normal state. His pulse at no time scarcely reached 100, and the purging, the vomiting, and the feeling of weight in the head, were the only complaints he ever uttered. His father came from the country to see him when he was ill, and remained until he buried him. He would on no account permit his body to be opened, and all we could do was to lament at his prejudice against this only legitimate method of arriving at correct data as to the cause of death.

It has been my object in this article to "nothing extenuate," but to record

rather my unsuccessful cases, in order, if possible, to point out to the young surgeon those rocks and shoals which he has to avoid. And in case his vanity should still lead him to suppose that *he* would not commit such a blunder (for blunder I shall by and by prove it to have been), I will inform him, that when I treated this case I had been twelve years in practice and nineteen in the profession, and then he can ask himself, whether he ought not to be ever most diligent in the practice of his profession: for he may rest assured that an example at the bedside is worth a thousand precepts in the closet,—that there is no royal road to medicine, and that no man can be a good surgeon who has not fought his way up through the dissecting room, the wards of an hospital, or the hovels of the sick poor. I think it was Sydenham who said that speculation and practice rarely go together: I can avow that I have rarely found learning and practice to go together, for men learned in languages and books I have ever found poor practitioners. Now, my young reader, ask yourself, who am I, or what have I done, that I should not attend with unremitting assiduity to my hospital, or why should I remain content with the knowledge I gained at school, while it is clear that so much is yet to be learned? Let every young surgeon form a resolution of this nature on commencing the practice of his profession, and let him follow it through life, and success is sure to crown his exertions.

The case just related I have no doubt was a case of rheumatism, which settled on the brain. And had the diarrhœa been permitted to take its course, and every attempt made to excite a strong determination to the skin by means of antimonials and warm baths, I make likewise little doubt but that the result would have been different.

The following observations by Dr. Cheyne are so apposite that I cannot resist entering them here. "It would be tedious to multiply cases of this kind (where the medical officer had set down as malingerers those who were really ill) many of which have come to my knowledge; affections of the brain, of the thorax, of the abdomen, diseases of the hip-joint, of which I have heard of several, supposed at first to be

feigned, eventually proving genuine, and leading to death or incurable disease. Such have shown me the propriety of proceeding regularly and deliberately in every case, how much soever appearances may be against any individual who has reported himself sick."

A man sometimes simulates disease, not for the purpose of finding his way out of the service, but in order to obtain sympathy from his commanding officer, and freedom from arrest. A man commissioned of the — regiment was ordered to his room for an offence the punishment for which was likely to be reduction to the ranks. He was about to be tried by court-martial, but before the preliminary matters could be settled, a few more than the usual number of days elapsed. The reason of this he did not know, and he began to hope that his good-natured colonel wavered in his determination. He reported himself sick, and I was directed to visit him. He had always been a particularly healthy man, one never either in the hospital, or at the hospital, save upon business not his own; and I did not doubt therefore that I should find him feigning something, for I knew him to be an artful man, and one unworthy from his deceitfulness to occupy the important office he had for some time filled. A few days' confinement to his room, and certain feelings of shame which he could not have been altogether without, I had no doubt would have some little effect upon his appetite and the state of his bowels, but I could not make myself believe that any disease should at this time have attacked a man who was notorious for his hale constitution. On entering his room I took no particular notice of him, but asked in rather a gruff tone what he wanted? He began a sad story about not having tasted food for four days, of having a bad pain at the stomach, and of being altogether very ill; and he soon hinted at the necessity of the Colonel knowing his state. I saw through him at once, and by his countenance detected both a lie and good health. I therefore told him that I had heard nothing more than I might have expected from one placed in such humiliating circumstances. He now requested me to feel his pulse, and to look at his tongue. A doctor never

requires to be asked by his patient to do these things, and I purposely avoided them in order to see whether he would or not call my attention to his tongue; because I have sometimes found that a malingerer can make a dirty enough tongue, and knowing that he has done so, rather than that the doctor shall not see it, he will do as this man did, he will call his particular attention to it. His pulse was natural, notwithstanding it is more than probable that he had adopted the old and useless practice of trying to increase its action by throwing his elbows rather forcibly against the wall, just as he heard me approaching. But his tongue was coated apparently with yellow soap and flour (at least so I suppose) to a degree such as is scarcely ever met with in disease. I did not say a word further than that I would give him a little medicine, and that I saw nothing about him to create any suspicion of there being the slightest danger. When I had said this much I saw by his face that he was disappointed, and I felt certain then that I was in the right; because what man who is really ill is not rejoiced when his medical attendant assures him of his safety? But this man was determined that I should alter my opinion, and he immediately began, in a strain much too lively for one in the condition he had just stated himself to be in, by calling to my remembrance how dangerously ill he had been with the same complaint four years previously, and how many weeks he had been under my treatment before he was cured! This was too much for me to stand: I now therefore told him that I had a better memory than he thought I had, and that for his assurance I had a good mind to report him to the commanding officer, for having attempted to convince me that he was ill, when I felt satisfied that there was very little the matter with him. He immediately looked crest-fallen, and before he could reply I took my leave. If I had done with him, his friends had not, however, done with me, for one of the corporals, a great friend of his, met me, evidently by design, immediately after I had left him, and with a melancholy face asked me what I thought of him. I immediately replied, that there was very little the matter with him; but instead of ex-

pressing his delight at this, as a friend would have done, he continued his gloomy countenance, and said, that he thought him in a very bad way. To this I replied, that no one cared what he thought, and walked away.

We have here a pretty good example of what an artful scheming fellow will sometimes do. This man knew perfectly well that if he could have thrown himself into hospital, and remained there for three or four weeks, he would have been forgiven before the expiration of that period; or at all events that his kind-hearted colonel would have relented in so far that no more severity would have been used towards him than the rules of the service absolutely required; and that if any loop-hole existed by which he could permit him to escape, he would be sure to do so. Indecision of character and too much kind-heartedness constitute that easy-mindedness with which the villain plays, and which all must allow point out a benevolence of heart but ill fitted for the stern duties of military command.

In the Household brigade, as the regiments are more or less stationary and almost always at home, facilities are afforded for giving men furlough which other regiments do not possess. Leave of absence to men who are convalescent from serious illness is therefore often granted to those whose relations live within a reasonable distance. Much good is often derived from these indulgences, and it is frequently cheering to observe how much improved in every way the men return to their duty. It does not, however, always happen so. A sojourn among one's friends, and in the place of one's nativity, sometimes creates such a dislike for military life as to end in making one who was previously a good soldier, a malingerer. Instead of allowing that he is quite up to his duty on his return, he will simulate, and tell you that his face deceives you, and so on. So rarely, however, have these indulgences been followed by any real evil, that the following is the only case I am aware of in which this happened; an unwillingness to take to duty again, such as all men show more or less on returning from common furlough, being the more ordinary result. The case is likewise worthy of record as being one in which I permitted myself to be im-

posed upon. A little knowledge is a dangerous thing, and verily the truth of the adage is herein corroborated. A scrofulous-looking man had been in hospital for many weeks with a bad cough, muco-purulent expectoration, and other equivocal symptoms of phthisis. Although he was not set down as one really consumptive, yet the case was so far clear, that the general opinion was that he was so. As his relations lived in a part of the country famous for its healthful character he was allowed to visit them. He had rather long leave of absence given him, but at the end of the time specified he returned, to all appearance much improved, his cough had left him, and he had had no expectoration for weeks; but he complained of pains in his hip joints to such an extent as to prevent him from walking without limping considerably. He was therefore still unfit for his duty. He said that as his chest got well, his hip joints got bad, and he complained chiefly of the right one. The man had always been a good character, and I knew how ill he had been before he went away; and knowing likewise the constitutional nature of phthisis, and the various organs sometimes attacked by it, I did not therefore hesitate to believe that the strumous disposition had settled in one or both of his hip joints, despite the generally improved state of his body, and that to this was to be attributed the relief from his cough and expectoration. Under this conviction I was doing nothing for him in reality, when my colleague returned from leave of absence, who, observing his healthy look, instantly sent him to his duty, telling him at the same time that moderate exercise was the best cure for all such pains. He tried several times during the next two or three weeks to excite my friend's sympathy, for he knew he had excited mine, but finding all of no avail he finally gave in, and took to his duty like a man. This is another case illustrative of the caution which should be manifested by young medical officers, and the great necessity which exists for careful discrimination before coming to a conclusion.

[To be continued.]

CONTRIBUTIONS TO THE PHYSIOLOGY OF THE HUMAN OVARY.

Second Series.

By CHARLES RITCHIE, M.D. Glasgow.

[Continued from p. 326.]

VII. *Seat of Conception.*

ANOTHER position assumed by De Graaf, which had been maintained previously by Warton*, and was afterwards supported by Haller and almost all succeeding physiologists, was, that impregnation was accomplished always in the ovaries; the tubes conveying the vivifying principle of the male *inward*, and not, as had been believed by the ancients, in the uterus; the female prolific matter passing *outward*. The reasons assigned for this opinion were, and still are, that fully formed fœtuses are sometimes found in the ovaries; that in the experiments of Harvey and of Haller, the semen masculinum could never be detected in the uterus *post coitum*; that it was sometimes, as was alleged, seen, however, in the tubes, and on some occasions has been seen on the surface of the ovaries; that when a ligature was placed around the cornua uteri of a mammiferous animal three days after conception†, two fœtuses were afterwards discovered between it and the ovary; that in dogs and rabbits recently dead, or still alive, the tubes have been observed to possess a rapid narrowing motion, passing in the direction of the ovaries; that the movements of the spermatozoa of the male are accomplished with a force which is sufficient to displace crystals ten times as large as themselves, and with a velocity equal in a right line to an inch in seven and a half minutes; that in the domestic fowl, many eggs are fecundated by one coitus; that the same happens in the viviparous animals; that in woman also, two, three, and sometimes four ova, are impregnated at once; and that every sexual congress is followed by remarkable changes in the structure of some of the Graafian vesicles.

In reply to which considerations it has been, or may be urged, that if you

* Warton, *Adenograph.* cap. 33.

† Nuchii, *Adenograph.* p. 69. *Philosophical Transactions*, vol. lxxxviii. pp. 129, 175.

kill a doe rabbit just impregnated, and while she is warm introduce a blow-pipe into the vagina, no air will enter the fallopian tubes or even the uterus; but that if you insert the pipe in a fallopian tube, the air passes readily into the uterus and vagina; that whatever may be said of the peristaltic motion of the tube, it is certain that the vibratile movement of its epithelium is towards the uterus, and that this ceases after the passage of the ovum; that, in point of fact, ova do pass from the ovaries to the uterus; that extra-uterine conception may occur as the exception, but not as the rule; that the semen masculinum has been detected in the uterus by the microscope *post coitum*; that all the statements of this fluid having been found in the fallopian tubes of the human subject are unworthy of credit; that even in quadrupeds the semen does not penetrate the ostium uterinum of the tube before the eighteenth or twentieth hour *post coitum*, or later; and that, unless in the case of two dogs, by Bischoff, of another dog by Wagner, and in two instances in rabbits by Barry and Bischoff, the semen has never been found on the ovary; that in Pouchet's* experiments on rabbits, the zoospermes all died by the twenty-third hour after the access of the male, at which time they had scarcely penetrated a perceptible distance within the tubes; that it is physically impossible, even should the semen virile reach the ovary, for its denser, which has been proved† to be its fecundating part, to penetrate the peritoneal coat of the ovary, the stroma, the coats of the vesicle, the granular fluid, and afterwards the ovum; that the expulsion of ova happens irrespective of coition‡, both in women and in quadrupeds, in such numbers as easily explains the occurrence of plural conceptions, but that, instead of twin births happening in the human female only once in every sixty-nine or seventy deliveries, as is the fact, they would, had the ovaries been the seat of conception, have been the common form; and that the changes in the Graafian vesicles, supposed formerly to have been peculiar to fecun-

dation of the ova, have now been demonstrated to occur independently of this cause; while, finally, the appearances observed in the ovaria of mammals *post coitum*, are utterly valueless in regard to any definite principle of development or order of succession, and would have been found in the same animals at the same periods, although no copula had intervened. That the experiment of Nuck is without weight in this inquiry, as it is known that the seminal corpuscles often extend to the tube in quadrupeds before the third day; that in the experiments of Haighton on rabbits, the corpora fibrata were found in their natural situation a few minutes after coition; that in one case* impregnation did not occur, although the left tube was divided so late as four hours after the access of the male; and that, in regard to birds, the quantity of semen necessary to fecundation is so infinitesimal, that enough may remain in the oviduct, after a single approach of the male, to impregnate all the ova which are discharged for a short time succeeding.

No analogy favourable to the ovarian hypothesis of conception can with safety be instituted between quadrupeds and women. In the latter, the uterine extremities of the tubes admit a bristle only; in the former they are large and patent. Whatever is fitted, on the contrary, to indicate the uterus as the seat of this process in animals, possesses a more remarkable power of application to the human female.

The experiments of Haighton on rabbits†, and, more lately, of Blundell‡, in which, by preventing the access of the male fluid in the oviducts, sterility occurred, although corpora periodica, or lutea, were formed, if they are read in the light of our present knowledge of the habitual discharge of ova by animals and women, independently of sexual intercourse, abundantly prove that the argument for conception being accomplished in the ovaries, which is raised on the fact of the presence of corpora lutea within these glands, is without foundation; a notion which has been refuted in multiplied ways in the present day, but in connexion with experiments on quadrupeds, more

* Arch. Génér. de Méd. Jan. 1845.

† Spallanzani, Diss. di Fisica Anim. et Veg. Prevost et Dumas, Ann. des Scien. Nat. t. iii.

‡ Contributions to Physiology of Ovary, MED. GAZ., 1843-44.

* Phil. Trans. vol. lxxxvii. p. 185.

† Phil. Tran. vol. 87, p. 159.

‡ Researches Physiological and Pathological, 1824.

especially by those of Bischoff*, in which he extirpated the uteri and tubes of bitches and rabbits, and found that the animals afterwards had heat, and discharged ova into what remained of their tubes, precisely as when the continuity of these was preserved; and more lately still, by the dissections made by the latter observer†, and by M. Raciborski‡, of dogs and other animals, while emerging from the rut, in which ova were found in the tubes, and corpora periodica or lutea in the ovaries, although the animals had had no connexion with the male.

In the dead human subject§, a fluid of the consistence of milk, if allowed to rest on the uterine extremity of either tube, will be gradually absorbed into its cavity: and in women who have died while menstruating, blood is often || found in one of the tubes; and in some instances¶ it has reached to the fimbriated end, and been observed as a clot resting on the ovary; while in some puerperal women death has been said to have occurred from the escape of blood into the abdomen.

Such facts prove the possibility of some of the semen virile, its motory parts for example, if received into the uterus during the relaxation of the organ, and its occupation, as in menstruation, by a fluid capable of diluting, and, perhaps, also of conducting the semen, passing gradually to the ovary; and as ova are projected from time to time into the tubes, and are probably retained there for a varying period before their transmission to the uterus, the compatibility and rationale of a tubal conception are obvious; while, as respects what is termed ovarian gestation, although the fecundation of the ovum in an *unruptured* vesicle appears to be impossible, it must be admitted that, despite the discharge of an ovarian follicle being so energetic** that

the detention of an ovum at its orifice, or within its perforated cavity, can scarcely occur; and also that before such an ovum is impregnated there must be the abnormal presence of seminal corpuscles at the infundibulum of the tube, and the suitable apposition of the latter to the abraded ovary and ruptured vesicle: the competency, viewed in the abstract, of a conception to happen, under such an extraordinary combination, is, however, as indisputable, as the fact that its occurrence is a subject of actual experience.

Fluid injections, again, if introduced in the dead body from the os uteri by a strong syringe, pass out readily by the abdominal ends of both tubes, but the *per saltum* passage along the tubes of the living human subject of a substance of the density of semen masculinum is, apparently, incompatible with the physical conformation of these ducts, and, besides requiring for its accomplishment an inversion of their action which is purely hypothetical, demands, also, either that the tubal fluid*, usually present in considerable quantity, shall be carried out into the abdomen before the semen, in which event it is not easy to see why the semen should not follow it, or, again, that there shall be set up at the same moment in the tubes double and conflicting series of muscular contractions, and double and opposing currents of contained fluid.

In opening the uterus of the human female its internal and lateral paries is occasionally found occupied by a large irregular patch of the fluid of the tubes, and in the rabbits with interrupted vaginae admitted to the male by Dr. Blundell, the uteri after numerous repetitions of the sexual act became enormously distended with albuminous fluid, secreted no doubt in part by the uterus, but proceeding also in considerable measure from the cornua and tubes.

Reviewing, therefore, these varied considerations, and referring, also, to those changes in the yolk which occur while the ova of quadrupeds are yet within the tubes, and which are supposed to be the exclusive effects of fecundation; and, likewise, to the alleged formation in the same subjects and situation of the chorion, the writer is yet constrained, in regard to the human female, to revert fully to the ancient

* Oologie, par Bischoff, in Encyclop. Anat. tom. viii.; Paget's Analysis, Brit. and For. Rev.

† The periodical maturation and extrusion of ova, independently of coitus, in mammalia and man, proved to be the primary condition to their propagation, by Th. L. W. Bischoff, &c.

‡ Op. cit. p. 376.

§ ———, death from albuminuria. Mother of three children, youngest nine months old. Uterine ends of fallopian tubes considerably smaller than the smallest sized pin-heads; not entirely circular, but having an appearance of arching in upper part, and of a subsidence of the rima at inferior edge. Milk passed from them slowly into the tubes, and quite readily when they were extended by pressure.

|| First Series, *passim*.

¶ M. Ruysch Thesar.

** First Series, Summary.

* First series, *passim*.

theory, that the sacculated distal ends of the tubes are true receptacula seminaria aut ovorum; that the tubes are deferent and ejaculatory canals or oviducts; and that the normal seat of conception is the uterus.

[To be continued.]

SOME OBSERVATIONS
ON THE
MEDICAL TOPOGRAPHY, CLIMATE,
AND DISEASES,
OF THE
BIGHTS OF BENIN AND BIAFRA,
WEST COAST OF AFRICA.

By W. F. DANIELL,
Member of the Royal College of Surgeons of
England, &c.

[Continued from p. 198.]

From Parrot isle the river gradually diverges for ten or twelve miles more to the eastward, having on either side an insular swamp detached from the main land, that on the right being denominated James's, and that on the left Alligator island. A sandy shore on the inner part of the latter is the favourite resort of numerous alligators; hence its appellation. The morass here is intersected by several unimportant streams, at the mouths of which and along the wooded banks are extensive shoals of alluvial mud. A little above Alligator island is a large creek (Seven-fathom creek), and nearly abreast of it on the opposite side is a conspicuous projection, termed Seven-fathom Point. From this point the river expands into a noble and spacious reach, tending for seven or eight miles to the northward, until checked by the elevated uplands of Oldtown. In proportion as the stream becomes less impregnated with the saline particles of the tidal influx, the banks, though marshy, and below the level of high water, assume a more lively and variegated aspect. Arborescent shrubs projecting over the water are indiscriminately blended with a profusion of oil-palms, coconut, and other graceful trees belonging to the *Palmæ*, whose pinnated branches waving above the ocean of evergreen foliage, offer a more delightful contrast to the dark and lugubrious scenery below. On the eastern bank, about five miles from Seven-fathom Point, the mangrove woods stretch to the village of Henshawtown, where the land suddenly rises. This place

consists of little more than a dozen houses, erected on sandy patches divested of their dense herbage. The population is near two hundred, mostly dependent on the chief from which the village derives its title. A long and narrow path leads to the river, fringed on both sides with the forest brushwood, and on its lower slopes by a sward of thick grass, amid which are the graves of a few Europeans. Adjoining the landing-place of this hamlet is the outlet of a spring of fresh water, from which the shipping is supplied. It is not an easy matter to discover this watering-place, on account of the tangled thickets that encompass it. From this spot a somewhat precipitous and closely wooded eminence, about two hundred feet in altitude, encroaches into the river, and constitutes the southern limit of the Old Calabar town. Attarpah, or River-town, the metropolis of these regions, is pleasantly located upon an easy acclivity within a semi-circular amphitheatre facing the river, having a background formed of verdant woodlands of a moderate height. The town is chiefly built on an inferior slope, the houses being clustered together in irregular groups that approximate close to the beach. The streets in their outline are similar to those of the other African towns previously adverted to, and are merely tortuous and intricate by-paths, rendered difficult to thread from the mud-walls and foliaceous fences of the adjacent domiciles effectually concealing all objects but the arid sand by which they are strewn. Near the palace of the king and the market areas, they are of much greater width, and are diversified with a vegetation of quite a tropical character. The houses of Old Calabar are far superior in their construction to those of any other nation in the Bights. They comprise a series of equilateral or oblong courts, half roofed over, and occupying a considerable extent of ground. The building materials are the same as those used elsewhere, the floors being a composition of hardened sand. The most remarkable architectural structures, however, that attract the attention of the stranger, are the massive wooden mansions of the king and chiefs. These edifices were originally built in Liverpool and Clarence, transhipped from thence in detached pieces, and re-constructed there under

the superintendence of European carpenters. Their sides are formed of stout planks overlaying each other so as to facilitate the passage of the rain. The habitable rooms are on the upper story, and are well lighted either by glass windows or latticed apertures, which have in front of them an open corridor that surrounds the entire building. These apartments are elegantly fitted up with magnificent mirrors, chandeliers, sofas, &c, intermingled with pictures, vases, earthenware, and other expensive articles of bijouterie. They serve as an ordinary lounge for the white traders, but their cool and refreshing gloom, with their comfort, neatness, and freedom from the noisy disturbances of the shipping, peculiarly recommend them as temporary hospitals for the white valetudinarian. The roofs are covered with mats manufactured from the palm tree, obliquely placed one above the other. Within the town the soil is for the most part composed of sand, which on the upper ridges and plateaus where the plantations commence, becomes encrusted with a dark vegetable loam amalgamated more or less with its siliceous substratum. In these districts immense beds of sandstone constitute the general base, the horizontal strata of which are very perceptible in the excavated paths of the suburbs. Vegetation here, as in the other elevated regions of central Africa, flourishes in unsurpassed exuberancy, with a richness and brilliancy of blooming hues that cannot but elicit the admiration of the beholder. The esculent plants and fruits that meet the eye are the *Achras Zapotilla* (naseberry), *Calladium esculentum* (cocoas), *Citrus Aurantii* (orange), *C. Vulgaris* (Seville orange), *Convolvulus batatas* (sweet potatoes), *Arachis hypogea* (earth nuts), *Anacardium occidentale* (cashew nut), *Anonum Clusii* (Malagetta pepper),* *Dimocarpus Africanus* and various

species of *Cucurbita*, &c. The fences of the outer tenements are adorned with festoons of variegated creepers, of which the *Ipomea palmata*, blended in the waste places with the *Canna Indica* (Indian shot), and *L. involucreta* are the most conspicuous. On the environs of the town the country is characterised by undulations, covered by bushy shrubs, in some parts partially cleared away by the native processes of cultivation. On the native farms may be procured limes, plantains, yams, maize, papayas, soursops, pine apples, sugar canes, cassada, calavancies, guavas, pumpkins, &c., and also all the live stock and cured fish to be found in the other rivers. A sandy shore, circumscribed by muddy patches, gradually slopes into the stream, its margin being dotted by the cask houses of the different vessels that are moored only a few yards from them. A narrow creek skirts the northern suburbs of the town, penetrating into a wooded dell, from which issues a flow of fresh water of excellent quality, that supplies the wants of the population. The inhabitants of Attarpah do not exceed 12,000, excluding the slaves of their agricultural settlements. They are an affiliated branch of the Quorra Eboes, but are in many respects at variance with them both in their customs and physical conformation.

The diseases of the natives of Old Calabar are almost the counterpart of those mentioned in the former localities, differing only in their type, which is generally of a more sthenic and inflammatory character. Ophthalmia predominates more among the tribes that inhabit the mountainous sandstone districts than in those of the delta of rivers. One of the principal causes to which it has been ascribed is the loose siliceous soil reflecting the rays of a fervid sun, but there are doubtless other concomitant local influences to which it may be equally referred. Iritis, ophthalmia tarsi, and cataract, are common, the latter often affecting both eyes. Apoplexy, congestions, and other morbid lesions of the brain and its meninges, are more prevalent in the aged people. The curative measures adopted for their relief by the native doctors, who are old women, are the shaving of the head, and the application of a tight silk bandage around its circumference; if, however, these means have not the

* I am indebted to the kindness of Dr. Pereira for the distinctive characters that separate this from the other species of the *Anonum* family, with what it has been generally confounded. This plant grows in spacious thickets in the neighbourhood of most of the towns in the river. It is also indigenous to the Gold and Slave coasts, the Rio Formosa, and may be seen on the outskirts of Clarence Fernando-po, where it is known under the name of bastard Mallagetta. The seeds are contained in a soft acidulous pulp of a pleasant flavour, which the natives use in lengthened expeditions to obviate the inconveniences of thirst. They are also occasionally administered as an adjunct to allay the irritative effects of cathartic and other medicines.

desired effect, they resort to the process of cupping, as performed by the natives of Bonny. One or two cases of puerperal mania came under my notice at Creek town, but it is a rare event to meet with women so affected, since persons of all ranks, if suffering from any maniacal disorder, are seldom permitted to reside within the precincts of the larger towns, and are carefully avoided by their inhabitants, who entertain the curious idea that their saliva, if thrown upon others of sane mind, has the effect of rendering them similarly affected. Their treatment appears to be rather harsh and severe. From the regard paid to personal cleanliness with the habit of daily ablution of the body, they enjoy a certain immunity from those cutaneous maladies so notorious among the inhabitants of the other rivers in the Bights. The one of most prevalence is that denominated by the Bounians Kraw-Kraw, which is an aggravated form of scabies, attended with much irritation. Gonorrhœa and syphilitic ulcerations are frequently seen in native practice; no remedy is used for their cure, and they are allowed to wear themselves out. The people of this town manifest the most decided aversion to the performance of any surgical operation, and so strong is their abhorrence of amputation that many would rather suffer death than the loss of an extremity. When, however, any portion of the limb has been taken off either by alligators or ground-sharks, they check the hæmorrhage by applying a hot piece of iron, which has sometimes been of permanent benefit.

From Attarpah the banks present a range of declivitous highlands extending to Abbutong or Oldtown, built about three quarters of a mile up the river on the terminal summit of them. By tradition this town has been asserted to be the one of the most ancient date; it has but few inhabitants, who are not engaged in any commercial traffic with Europeans. Its site is healthy, and commands a fine prospect of the river and its forest scenery. From Oldtown the stream sharply turns to the westward through a flat and heavily wooded swamp, on the left bank of which, a few miles distant, are two or three small creeks. The first of them takes a circuitous course to join a branch from the Cross river, and passes by Creek town or Occorotunko, which consists of a limited number of scattered

houses delightfully situated on a sandy eminence that gently declines to the water's edge. Both the buildings and their habitants are considerably less than those of the metropolis. The streets are wide and spacious, not so much frequented, and possess a more picturesque appearance than the other native thoroughfares of old Calabar. The population of this town averages about 5000. Around the suburban edifices, and in the open wastes, the ground is clothed with cucurbitous plants and the Indian shot. Among the vegetable productions indigenous to this district may be enumerated a few peculiar to the interior of Africa. Many of them are valued for their medicinal properties, such as the *Sterculia acuminata* (kola nut), *Sugus vinifera* (wine palm), *Parkia Africana* (locust tree), *Pterocarpus erinacea* (redwood tree), &c.: the *Mucuna pruriens* (cowhage), *Bromelia ananas* (pine apple), *Mimosa nilotica* (acacia), *Calamus secundiflorus* (calamus), *Areca Africana* (African cabbage tree), and *Acacia scandens* also exist.

The river from the outlets of the preceding creeks is luxuriantly embellished with aquatic evergreens, and is extremely erratic in its course to the northward, its width varying from two to four hundred yards. The celebrated Humboldt has remarked that the common mangrove does not grow in freshwater swamps; his statement, however, is not altogether correct, inasmuch as many isolated clumps of the *Rhizophoræ* may be observed beyond Oldtown, where the stream has not the slightest admixture with the oceanic waters. A few miles on the right, along the slope of some rising grounds, are some villets by the earlier slavers as little Guinea lages and native plantations, designa-company. Five or six miles above them, on the left, are the sandy tablelands of Addearbo, or great Guinea company, the higher portions of which are from three to five hundred feet in altitude. The slopes of these hills seem in the distance to be somewhat precipitous; they are enlivened by irregular masses of wood, with a number of connected hamlets that peep out from amid them. From this place the river regularly dwindles in magnitude as it is traced more inland, and at length becomes apparently lost in the interminable swamps that conceal its source.

[To be continued.]

MEDICAL GAZETTE.

FRIDAY, JULY 18, 1845.

Up to the time of going to press, we have received no tidings of the *new* Physic and Surgery Bill. Many speculations are afloat respecting the changes which are to be made in it, but we believe nothing certain is known on the subject. The profession is, however, likely to have ample time for considering in what way its interests are likely to be benefited or injured by the fourth bill, seeing that the session is now so far advanced as to render its passing almost hopeless. We have it in our power to state, upon good authority, that there is some prospect of the College of Surgeons throwing open the Fellowship, under certain restrictions, to members of twenty years' standing without examination; and henceforth to give individuals the option of acquiring it by seniority, or at an earlier period by examination. A measure of this kind would only be an act of justice. The plan is not yet matured; but we are satisfied that it would meet with the approbation of a majority of the Fellows, as well as of the Members of the College. It would at once tend to put an end to much of the ill-feeling which the recent conduct of the Council has excited in the profession.

In a recent number (p. 423) we inserted a letter from Dr. Conolly on the subject of the establishment of an asylum for the insane of the middle classes of society. On Thursday last a public meeting was held in order to take into consideration the best means of organizing such an institution. It is a matter of surprise that so obvious a cause of distress and suffering should

have hitherto received but little attention from the profession. There is probably no practitioner of any standing who has not at some period of his life met with cases of insanity among the middle classes, in which the cure of the patient and the comfort of his family did not absolutely require his removal from home; and yet the pecuniary means of the relatives were probably inadequate to meet the high charges of a respectable lunatic asylum. We have reason to believe that applications for admission to the Hanwell Lunatic Asylum, intended only for paupers, are by no means unfrequent under these circumstances; and that the friends of many patients, of a class much above that of paupers, would be glad to avail themselves of the advantages, in respect to treatment and comfort, which are to be found in this establishment. The result, however, is, as the experience of many of our readers will testify, that the patient either remains at home with a keeper, under circumstances very unfavourable to his recovery, or he is sent to an establishment, partaking more of the characters of a prison than an asylum, where he is received as a sort of boarder at a low rate of payment,—is simply fed and watched, and all treatment is neglected. The result of this is, that the insane of the middle classes are often in a worse position than county paupers. The Report of the Metropolitan Commissioners of Lunacy sufficiently shews the evils of this system, and the degradation and misery to which those who have been well educated, and have lived in comparative ease and comfort, are constantly subjected.

It is true that a certain number of cases of this description are received on moderate terms into Bethlehem and St. Luke's, and into some provincial establishments; but the cases which

from their duration and their hopeless nature are likely to create the greatest expense to families are not admitted into the large metropolitan asylums,—while those in the provinces are quite inadequate to receive them.

We gather, partly from the prospectus and partly from the report of the meeting lately held, that the object of the Committee, among whom we perceive there are some physicians and surgeons who are connected with lunatic asylums, is to establish in the neighbourhood of London an asylum capable of receiving about three hundred patients, and affording at a much more moderate charge, with the requisite medical treatment, every comfort which is to be found in large and expensive lunatic establishments. It will thus be placed within the reach of the members and families of the various professions. The resources of many of these persons are scanty:—their incomes commonly depend on unremitting exertions, which an attack of insanity may either suspend at once, or cut off for ever. It is not unreasonable, therefore, that the Committee should look for assistance in the undertaking, from members of the medical profession.

When the asylum is once established, it is calculated that it will support itself by the annual payments for patients of from fifty to eighty pounds: but a power will be reserved to the Committee to grant admissions on still lower terms, where circumstances may appear to justify this proceeding; and in order to meet this object, it is proposed to create a charitable fund. Without the support and co-operation of the medical profession, it would of course be difficult for such an establishment to thrive; and perhaps the best way to test its prospective utility is for a medical practitioner to suppose that either himself, his wife, or a near

relative, may hereafter be placed in the position of a patient. A well-managed asylum of this description would be capable of giving to the inmates, at a small expense, those comforts which are suitable to their habits of life, and all the advantages and resources, in respect to treatment, which are met with at the best establishments. As matters are at present, the patient is probably hurried off to some showy “retreat” conspicuous for its weekly or quarterly illustrated advertisements; he there becomes a prisoner instead of a patient, and to him might be fairly applied, with slight alteration, the language of the great Italian poet—

*Per quì si va nel eterno dolore
Lasciate ogni speranza voi ch'entrate.*

We have said, that such an asylum, to carry out its praiseworthy objects, should be well managed. The names of the Committee, among whom there are nine physicians, all men of standing and repute, appear to be a sufficient guarantee that this is not one of those ephemeral speculations got up under the guise of charity. The patrons are Earl Spencer and Lord Ashley:—we need hardly observe, that the latter nobleman has completely identified himself with every reasonable plan for the amelioration of the condition of these unfortunate beings.

No advocate is better fitted to plead the cause of such an asylum than a member of the medical profession; and occasions may often present themselves painfully calculated to prepare his wealthier patients for such an appeal. In the richer classes, the means of escaping the aggravations of this affliction abound; and yet even with these advantages, the insanity of a relative often makes life valueless, and blasts the happiness of a family circle. Among the poor of the metropolitan district, the affliction is lessened by the prompt relief afforded

by their reception into St. Luke's, Bethlem, or Hanwell; but those who have witnessed the interviews between the patients and their friends can alone estimate the depth of sorrow which has, under these circumstances, fallen upon each humble family. Far more wretched, however, is the condition of a family between these two extremes. Its order and prosperity are at once destroyed—resources diminish and expenses increase, affections are estranged, and such distress is incurred that even the death of the afflicted individual appears a desirable consummation.

The poor have found a powerful advocate in Lord Ashley. More than half of the lunatics of England and Wales have no asylum provided for them; but the bill now before Parliament is likely to remove this serious defect, and to render the erection of proper establishments for the poor, compulsory on every county. The middle classes, however, must look to themselves, if they wish to avert the evils to which those among them, who are attacked by this malady, are now subjected; and it is on this ground that we think the plan of establishing an independent asylum near the metropolis, is well deserving of encouragement and support from members of the medical profession.

WE are desirous of calling the attention of our readers to an improvement which has been lately made by the Registrar-General respecting the registration of the causes of death. Every well-informed medical practitioner must be aware of the great utility of accurate returns of the causes of death in reference to public health, medical police, life insurance, and the practice of medicine, which is based on an extensive series of such observations. We need hardly say, therefore, that every

professional man who assists in carrying out the operation of a well-constructed registration act is indirectly benefiting medicine, and probably leading to important improvements in that science. The proper registration of the causes of death must be looked upon as the barometer of medical practice,—it indicates whether one disease is prevailing more than another, or whether, in spite of medical treatment, a particular disease is fatal in a locality far above the average of the years and seasons. It at once shews the prevalence of epidemic and contagious diseases, and gives sufficient warning to the living to guard against their diffusion. It thus tends to remove the effects of panic on the public mind, in the event of any alarming increase of mortality, by leading to the certainty that every measure which human reason can suggest, will be immediately adopted in order to check its course, or prevent its increase. There is no doubt that the registered causes of death have served as a basis for many important inquiries made by the Health of Towns' Commission, respecting the sanitary condition of the labouring population; and some useful legislative measures are now likely to be brought forward in reference to this subject.

Much as the present system of registration is far above that of the Old Bills of Mortality, drawn up by the ancient "sworn searchers," upon principles which had remained unchanged from the days of James I., there are still defects which it would be desirable to see removed. In the Statistical Nosology (p. 27), a hint is given to coroners, that they should abandon the unmeaning verdicts of "Natural death," "Death by the visitation of God," &c. Their duty is to inquire into the *cause* of death, and if necessary, by the aid of medical evidence, to state it as plainly as the medical attendant of any

deceased person is now compelled to do. These verdicts are not so frequent as formerly, but still they are too common with non-medical coroners; and they would probably disappear entirely, if post-mortem inspections were made compulsory in all doubtful cases.

In the present volume*, some remarks have been made on certain defects in the mode of registration commonly pursued. We are not aware that any plan has been yet adopted to prevent double registration in cases of death; but it is evident that the Registrar-General is directing his attention to all defects, and endeavouring to remove them. Medical men have complained that they did not understand the exact form in which the cause of death should be registered; and in order to meet this difficulty, a book of blank certificates has been printed for gratuitous distribution among members of the medical profession. The rules are here so plainly given, that a mistake does not seem possible. Again, a "Statistical Nosology" has also been printed, which may be obtained by every licensed practitioner, on application at the General Register Office. This appears to be a useful guide, both for the District Registrars and medical practitioners; the common name and professional name, with explanatory remarks, are here given for every disease, with an alphabetical index of all the causes of death on the register. It may be proper to observe that every licensed practitioner who has attended any deceased person professionally, is, if applied to, bound, under the 6th and 7th Will. IV. c. 96, s. 25, to give all information required by the Registrar respecting the death, within eight days. These blank forms will save much trouble from applications of this kind. The form may be filled up by the medical attendant, and left with the relatives of the deceased.

* *Id.* 212, 428.

Reviews.

The Irish Watering Places: their Climate, Scenery, and Accommodations. By ALEXANDER KNOX, M.D. 8vo. pp. 332. Curry and Co. Dublin.

THIS little volume, which appears at an opportune season, is principally intended for the use of invalids who are advised to seek change of air, and who, like the author of the work, prefer an English or Irish to a Continental watering-place. We learn by the preface, that Dr. Knox was induced, merely for mental occupation during his rambles in search of health, to collect all that was known respecting the most celebrated bathing places of his native country, and we have here the result of his labours. If we except Cove, but little has been hitherto published respecting the climate and mineral waters of Ireland; although there can be no doubt that they are as well adapted to the invalid, as many of those Continental spas to which it has been hitherto the fashion to banish patients affected with chronic or incurable diseases. According to Dr. Knox, the country is so rich in mineral waters, that in the county of Cork alone there are no less than thirty-three different springs. In Tyrone, many of the springs are chalybeate, but none have a temperature higher than 58°. The spas of Lucan and Drumsna are sulphureous; but these, as well as the sulphur springs of Great Britain, have a low temperature. The only warm spring known to exist in Ireland is that of Mullow, the maximum temperature of which is 72°. The mineral waters of Ireland are next compared with those of other countries, and their beneficial effects in cases of dyspepsia, and other diseases, are pointed out. Indeed, the title of the work gives scarcely a sufficient indication of its contents; for there are chapters on diet, exercise, and regimen, as well as on the statistics of disease; and facts in natural history, topography, and anecdotes of celebrated characters, are scattered throughout the pages. It contains, besides, an interesting essay on the climate of Cork, from the pen of Dr. Scott, in which the advantages of this locality, as a resort for invalids, are well explained. Cove is remarkable for the uniformity of its climate; the

mean annual temperature does not differ much from that of London, but there is only a difference of about 10° between the "mean minimum" and "mean maximum"; by which probably the author intends the mean winter and summer temperatures of the place. This is a very small range; and in another table we find that the difference of temperature between the winter and spring, and winter and summer seasons, is much less at Cove, than at those favourite resorts, Hastings, Nice, Pisa, and Pau. We think this work will prove a useful and interesting companion to those who are disposed to give the watering-places of Ireland a trial for the restoration of broken health.

A Few Remarks addressed to the Public on Hydropathy, or the Cold Water Cure, and other Panacea. By WILLIAM F. SOLTAU, M.B. 8vo. pp. 72. Hamilton and Adams, London: Rowe, Plymouth. 1845.

DR. SOLTAU'S pamphlet is intended as an answer to the question—which, he says, is often put to him in his professional intercourse with the world—"what is your opinion of hydropathy?" "Are you an advocate for the cold-water cure?" His remarks are of course addressed exclusively to non-medical readers, for the doctrines which they convey form part of the leading principles of every right-minded professional man; and it is evident enough that upon the hardened consciences of those who, knowing what the right course is, have dishonourably enrolled themselves in the ranks of uneducated charlatans, no good reasoning can be expected to have effect; *they* will not be converted though one spoke to them from the dead. Dr. Soltau writes energetically and sensibly, and we hope that his arguments will have some of the desired effect in opening the eyes of his querists; yet we have little faith in any but the strongest means, in eradicating the pest of quackery. All slight and gentle measures, reasonings, cautionings, and attempts to diminish the inherent gullibility of the people by education, and by means tending to give them greater confidence in their qualified medical attendants, are weak and almost useless devices—mere straws thrown out to resist the torrent of charlatanism.

No plan of instruction less than that which gave a regular medical education to each individual could ever take away the occupation of the empirics; but even that would only increase the evil, for then every man would become his own Buchan, and quack himself to the uttermost from his private medicine-chest. It has always been evident that no degree of enlightenment will remove that credulity which leads men to submit their bodies to the mismanagement of the unlicensed

So long as it is found that the illegal practitioner is, at all times, ready to affirm, with the most solemn protestations, that he is able to cure, by easy and intelligible means, diseases which the honest medical man either doubts his power of combating, or ingenuously declares to be absolutely incurable, so long will hosts of afflicted persons, of all classes, be found eagerly anxious to grasp at the vain hopes which the impostor holds forth so cheerfully before them. And while a law of nature continues to render men sufferers from a legion of imaginary diseases, which can often be removed by the assurance that a cure may certainly be effected, so long will the empirics be able to bring witnesses of undoubted veracity to attest the infallibility of their *nostra*. Where is the medical man who has not, at various periods of his life, confidently believed himself to be the subject of half the diseases in the nosology, each of which has, in its turn, taken flight under the influence of mental occupation or of simple remedies; yet still leaving the learned hypochondriac hable to new attacks of imaginary maladies? Who, then, can blame the well-educated classes—much less the superstitious vulgar—when they solemnly affirm that they have been freed from mortal diseases by the revivifying powers of bread pills, emollient ointments, and stimulating embrocations? No general diffusion of useful knowledge can ever put down empiricism:—we boast of the supreme enlightenment of the age in which we live, but the quack doctor was never more abroad than he is at this moment.

Noctes atque dies patet atri janua ditis.

And this state of things will probably continue, if the present laws hold, until the end of time. The government may work unceasingly in supporting Health-of-towns-commissions, in pro-

moting sanitary rules, and in endeavouring to increase the confidence of the public in their professional advisers by raising the standard of medical education; yet still a large mortality will continue to result from the ignorance and rashness of unqualified practitioners. The only remedy for the evil lies in the enforcement of stringent penal regulations against all who presume to treat disease for gain without possessing tested knowledge and legal qualifications.

Kritisch-Etymologisches Medicinisches Lexicon, &c. Entworfen von LUDWIG AUGUST KRAUS, Dr. Philos. et Med. Leg. Göttingen, 1844.

A Critical and Etymological Medical Dictionary, &c. By DR. LUDWIG AUGUSTUS KRAUS. Large 8vo. pp. 1100.

This volume, the third edition of which has just appeared, is indispensable to those members of our profession who feel an interest in the medical literature of Germany. The multiplication of medical terms in Latin and Greek has increased to such a degree, that without assistance from a work of this description, the German student would find himself continually at a loss. We have here a large number of words of classical origin, the etymology of each of which is succinctly given; and, where it may appear necessary, short critical notices are attached, either pointing out the various senses in which the word has been used by medical writers, or referring to standard works in which it occurs. The author appears to be a profound philologist, for under many of the words we find, besides the Greek and Latin, the Hebrew and Arabic synonyms. Some of the terms, especially those which are arranged under the department of ophthalmology, would puzzle most medical readers. Thus we have, for inflammation of the conjunctiva, *Ophthalmodesmitis*, and for preternatural dryness of that membrane, we find the word *Ophthalmodesmoxerosis*. When words like these are employed, dictionaries are certainly required; and the best compliment we think we can pay the author is to say, that there is no medical term of Latin or Greek derivation, of which, on reference to his *Lexicon*, we have not yet found an explanation.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Tuesday, June 24th, 1845.

DR. CHAMBERS, PRESIDENT, IN THE CHAIR.

Two Cases of Anæsthesia and Loss of Motory Function of the Fifth Nerve. By JAMES DIXON, Assistant-Surgeon to the Royal London Ophthalmic Hospital.

THIS paper contains reports of two cases of anæsthesia and loss of motory function of the fifth cerebral nerve, attended by remarkably different symptoms. In one case, the eye on the affected side became inflamed, and vision was destroyed by a deposit of lymph in the pupil, anterior chamber, and substance of the cornea; the same morbid changes taking place in the eye as follow the division of the fifth nerve in Magendie's vivisections.

In the other case, complete anæsthesia had existed for almost a year and a half, and yet there was not the slightest inflammation of the eye, nor any opacity of its humours.

In this latter patient careful experiments were made to ascertain what effect had been produced upon the tongue in respect to feeling and taste.

Both were perfect on the right side. On the left, all that part of the tongue which is anterior to the papillæ vallatæ was utterly deprived of taste and feeling, while both these senses were unimpaired in that portion of the organ to which the lingual branch of the glosso-pharyngeal nerve is distributed.

Diseases of the fifth nerve appear to be more frequent on the left side of the body; for out of forty-six cases recorded by English and foreign pathologists twenty-nine occurred on the left, and only twelve on the right: while in five patients both nerves were affected at the same time.

Case of Fungus Hæmatodes. By HENRY BLENKINSOPP, Esq. of Warwick, Member of the Royal College of Surgeons. [Communicated by G. J. PERRY, Esq.]

ABEL BONSOR, aged 13, a pauper, fell from a gate and injured his shoulder, in July, 1843. After some weeks an enlargement made its appearance in the left arm near the inner margin of the deltoid, and the boy began to suffer from darting, lancinating pains in the tumor. It rapidly increased, but the patient's state of health prevented any hope from amputation. Near the end of January an alarming hæmorrhage took place from an ulcerated opening. This was followed by great exhaustion, and the patient died on the 12th of March.

The body was examined on the 14th. On making sections of the tumor, considerable resistance was offered to the scalpel by the walls of the numerous cells which formed a great portion of the tumor. These walls were composed of a fibro-cartilaginous substance, and the cells contained encephaloid matter. The disease seemed to have been developed in the periosteum, the cancelli and general texture of the humerus being perfectly healthy. The disease extended to the scapular region, the muscles presenting a liver-like appearance, but the bone was not implicated. The lungs contained tubercles in all three stages. The liver also contained tubercles, and a cyst of hydatids.

The author concludes by briefly alluding to some points in this case worthy of notice, viz. the absence of fungus, the complicated form of the disease, and the healthy condition of the bones.

Case of Excision of the upper end of the Femur in an example of Morbus Coxarius.

By WILLIAM FERGUSON, Esq., Professor of Surgery in King's College.

JOHN CLARK, æt. 14, suffered for fifteen months from hip disease, and in February 1845, was in the last stage of hectic. The head of the femur was displaced on the dorsum ilii, and could be felt by the finger passed into a large sinus connected with the disease. The limb on the affected side was between four and five inches shorter than the other, and much distorted by flexion at the knee and hip. There was no indication of disease of the bones of the pelvis, and the head of the femur seemed the principal cause of suffering.

On the 1st of March, 1845, the author made a longitudinal incision on the hip over the head and neck of the bone, and those parts, with a portion of the shaft, including the trochanters, were removed, the bone being cut across with a common saw. The patient bore the operation well; the previous bad symptoms soon disappeared, and in two months he was able to move about the wards of the hospital on crutches, the wound being nearly closed.

The paper concludes with a short historical sketch of the operation, whereby it is shown that this is the second instance in which it has been successfully performed in this country, having been first proposed by Mr. Charles White, of Manchester, in 1770, and first performed by Mr. Anthony White, of the Westminster Hospital, in 1818.

Additional Observations on Obstructions of the Pulmonary Arteries. By JAMES PAGET, Esq.

THIS paper is intended as an appendix to that on the same subject, communicated by

the author last year, and published in the last volume of the Transactions of the society.

A man, fifty-five years old, was under treatment for stricture of the urethra. His general health was considered pretty good, and he made no complaint to his attendant of any thoracic disease, but, one afternoon, while, to all appearance, in his usual health, he fell on his face from his bed's side, and died in less than two minutes.

On a careful examination, nothing was found that could have caused death, except the obstruction of nearly all the larger branches of the pulmonary arteries, by old and variously discoloured and altered clots of blood. In other parts, the blood was fluid or recently coagulated. The kidneys were slightly granular, but no other organ was importantly diseased.

The author discusses the cause of death, and of the coagulation of the blood in this and similar cases. He maintains, that in the cases which are not complicated with structural disease of the lungs, death is produced, not by asphyxia, but by gradual retardation, and at last cessation of the movement of the blood through the substance of the heart and brain, the systemic circulation becoming gradually slower, as more and more of the pulmonary arteries are obliterated, and less blood is transmitted through the lungs. Hence it is, he thinks, that, in the majority of the recorded cases, though the disease was long in progress, yet the signs of danger and death were sudden.

The author alludes to several circumstances which he believes may cause arrest of the blood in the pulmonary vessels, and its consequent coagulation; but he suggests that the chief one is some morbid state affecting its constitution, so as to increase that adhesion of it to the walls of the vessels, which constitutes, even in the healthy state, the greatest resistance which the heart's power has to overcome. Such a diseased state he believes is produced by the existence of urea in the blood; and in confirmation of this opinion, he remarks that in at least three of the five cases in which no other cause could be assigned for the coagulation of the blood in the pulmonary arteries, the kidneys were granulated.

STATISTICS OF MEDICAL TREATMENT.

ONE out of two acute cases may recover by the almost unassisted efforts of nature, but under the medical protection of our own age and country, six out of seven or even eleven out of twelve are likely to survive, according to the period of the disease at which they are placed under treatment.—*Hawkins's Statistics.*

Hospital and Infirmary Reports.

GUY'S HOSPITAL.

CASES TREATED BY DR. BARLOW.

Bronchitis and Arthritis. Reported by
Mr. W. W. KERSHAW.

ROBERT ROBEY, æt. about 45 years : ill five days : admitted, March 26th, into 23 Job, under Dr. Barlow.

When admitted, was suffering from great dyspnœa and debility, with an anxious congested countenance ; efforts both in speaking and moving aggravated his distress so much that he was examined but superficially ; he was found to have swelling and great tenderness of left wrist, with loud bronchial râles over the whole anterior aspect of the chest. pulse weak and regular.

Ammon. Sesquicarb. gr. v. Aq. Menth. Pip. ʒj. ; Aquæ ʒss. ; Sp. Ætheris Nitr. ℥xx. 4tis horis. Hyd. Chlor. P. Camph. P. Scillæ aa. gr. j. ; Ext. Hyoscyam. gr. ij. 6tis horis. Empl. Canth. sterno. Beef-tea, ad libitum.

At 9 P.M. considerably relieved. Surface everywhere warm ; dyspnœa much lessened.

27th.—No sleep from distress in breathing and arthritic pains ; says his appetite is not much impaired. Thirst. Tongue injected with a harsh brownish fur, whiter at the edges, and reddened at apex. No vomiting or abdominal pain. Pulse 109, weak, regular ; dyspnœa ; cough ; tolerably copious expectoration of mucus, frothy, not very tenacious, with a few muco-purulent streaks ; loud sonorous crackling and mucous râles over the whole chest both anteriorly and posteriorly, entirely masking the cardiac sounds ; percussion rather hyper-resonant ; skin hot, but not excessively so ; respirations 30, attended every now and then with a general tremor or shudder of the whole frame, and an expression approaching the risus sardonius. Right wrist erythematous, swollen, painful, and excessively tender ; other joints of the upper extremities unaffected ; considerable tenderness over the anterior aspect of left hip-joint, and all down the outer side of the thigh ; some effusion, also, in the synovial capsule of the knee ; but the ankle, and all the joints of the right leg, are unaffected.

Repet. Mist. Pil. 4tis horis ; Pulv. Opil. gr. j. hæc nocte.

28th.—Got a little uneasy sleep. In the morning dyspnœa considerably relieved. He ate some breakfast with comfort. About 10 A.M. dyspnœa became aggravated, and at 1 P.M. his skin was hot, perspiring copiously. Respirations much quickened, irregular, imperfect, often short and catching ; sputa

increased in tenacity, with more muco-purulent matter. Refers all his distress in breathing to the regions of the diaphragm and sternum ; physical signs as before ; pulse 108, steady, of good volume, and compressible ; tongue much coated ; bowels opened twice yesterday ; nothing unusual about the dejections.

Ol. Ricini, ʒss. st. et pil.

29th.—Good deal of prostration, though about 9 A.M. he felt much relieved. Tongue cleaner ; bowels opened twice by the oil. Towards the middle of the day a good deal of what he described as "nervous agitation" came on, and the state of the skin and respiration was like that described yesterday. During these paroxysms the arthritic pains about the joints and other parts are remarkably increased ; at such periods his face is flushed, perspiring like that of a person undergoing some severe muscular exertion ; voice is feeble, and the aspect of prostration increased.

J. A. Spt. Ætheris Sulph. co. ℥xx. ; Tr. Opil. ℥. v. 6tis horis. Rep. Pil. t. d.

30th.—Late last night he was found to be incoherent ; had made several attempts to get out of bed. Great prostration and dyspnœa. He was then ordered—

Decoct. Senegæ ʒj. ; Oxymel Scillæ ʒss. ; Spt. Ætheris. Sulph. co. ʒj. 6tis horis. Repet. Pil.

At 12 to-day he appeared relieved. Tongue moister and cleaner ; pulse 120, full and soft. Has still some arthritic pains, confined now to the upper extremities ; answers questions correctly, but soon relapses into incoherency.

Ammon. Sesquicarb. gr. iv. ; Tr. Scillæ ℥xv. ; Spt. Ætheris Sulph. co. ℥xx. ; Decoct. Senegæ ʒj. Rep. Pil.

31st.—Delirium, not of a furious character, has existed without intermission ; insomnia ; attempts to get out of bed in the night ; bowels open ; tongue moist and white ; hands tremulous ; pulse soft, regular, 96.

Repet. Mist. ; Repet. Pil. sine Hyd. Chlor. ; Port-wine ʒvj. ; Pulv. Opil. gr. j. h. s.

April 1st.—Quieter during the night ; aspect more tranquil, and manner more coherent ; breathing easier ; less tremor ; tongue pale and moist.

Perstet. Pil. Opil. gr. iss. h. n.

2d.—Rather improving. Arthritic pains alleviated.

Perstet. Pil. Opil. To have a mutton-chop.

3d.—Dyspnœa considerably relieved ; respiratory sounds loud, coarse, intermixed with some sonorous râles. A loud cardiac

(1st) sound is now apparent. Pulse 96, full and soft; bowels opened this morning: tongue moist and clean; a good deal of debility and tremulousness of hands. Arthritic pains gone. Pergat. 4th.—Improving. 6th.—In the night, passes his urine and faeces under him; in the day-time he can control these functions. Sleep yet imperfect, with some vague transient delirium.

Pergat. Porter 1 pint; Port-wine 4 ounces.

9th.—Still sleeps badly; bowels irritable; cough very slight; great debility.

Pulv. Ipecac. co. gr. v. h. manequae. Cont. Mist.

10th.—Bowels still much acted on; dejections fluid, but of healthy colour.

Mist. Cratae co. p. r. n. Omitt. Mist.

14th.—Put on his clothes; feels himself gaining strength daily. 18th.—Convalescent.

26th.—Doing well.

Medical Intelligence.

ST. MART'S (MARLBOROUGH AND PADDINGTON) HOSPITAL.

THE first stone of this Hospital was laid by H.R.H. Prince Albert, on Saturday the 28th ult. The total amount of Subscriptions yet received is £17,399 13s.

COLLEGE OF SURGEONS.

On Thursday, July 16th, Mr. Samuel Cooper was elected President, and Mr. Lawrence and Mr. Travers, Vice Presidents for the year ensuing.

COLLEGE OF CHEMISTRY.

THE Council have announced their intention of opening the College as a Practical School of Chemistry in October next. Premises have been taken in Hanover Square for this purpose.

Correspondence.

To the Editor of the Medical Gazette.

SIR,—As I find that many persons are under the impression that the reports of my Lectures on the Practice of Medicine, which have for some time past appeared in the *Medical Times*, are authorised by me, I think it due to myself to declare publicly that they are not so.

I believe that the reports were taken by a short-hand writer unacquainted with medicine and with medical terms, and if they have been corrected at all, it has not been by myself, nor (except some of the early lectures), so far as I know, by any of my pupils.

I trust that this statement will account for numerous errors and omissions which, in many parts of these reports, so entirely destroy or pervert the sense, that it is not fair that I should be supposed responsible for them.—I am, sir,

Your obedient servant,

C. J. B. WILLIAMS.

7, Holles Street, Cavendish Square,
July 12, 1845.

QUALIFICATIONS OF MEDICAL PRACTITIONERS IN THE SIXTEENTH CENTURY.

PRIOR to the commencement of the sixteenth century, the qualifications required for those who practised as surgeons in Edinburgh were, that they should be able to "wryte and reid, and to know anatomie, nature and complexion of everie member of the humanis bodie, and likewise to know all the waynes of the samyn, that he may mak fleubothemes in dew time;" together with "a complete knowledge of shaving beards and cutting hair."—*Nuga Canonica*.

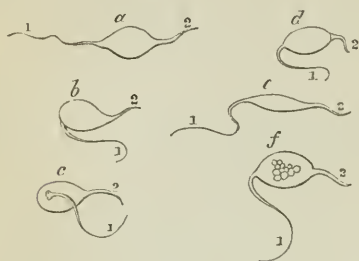
Selections from Journals.

PHYSIOLOGY.

NEW ENTOZOON IN THE URINE OF SNAKES.—BODA COLUBIFORMIS. BY DR. HAMMERSCHMIDT.

THE excrement of snakes consists commonly of a dark fecal mass, mixed with a white pasty-looking substance,—and of urate of ammonia, with a mucous liquid of a yellowish colour. In examining this fluid voided by a full-grown Coluber natrix, under a microscope, I detected polyhedral crystals of urate of soda, and some animalcules, which appeared to belong to the species named by Ehrenberg "*Boda*." They were perfectly transparent and colourless, and by their motions might easily have been mistaken for spermatozoa. This entozoon has an oval lancet-shaped body, a thin thread-like snout, and a thicker or shorter tail. The length of the body was 5—6/1440 of a Vienna line: its breadth 2—3/1440; the length of the head-prolongation (snout?) 12—15/1440: of the tail 5—6/1440. When examined from above, the body had a somewhat oval shape; when seen laterally, the head was observed to run into a lancet-shaped point, having a thread-like elongation; the tail is thicker at its base, and shorter. The motion of the animalcule is like that of the spermatozoon: it takes place in the direction of its thread-like head, which is in continual motion, being turned above, around, and on all sides of its body. There is much less motion in its tail. The convolutions of vessels may be seen about the middle of its body. These entozoa are more numerous in the excrement of certain snakes

than in that of others. *BODO COLUBRORUM*: *Monada caudata, non colorata, oculo destituta corpore lanceolata, ad caput acuminatum ore proboscide filiforme instructa:—cauda crassior et brevior est proboscide. Longitudo corporis 5—6/1440'''*; *totius animalis 22—27/1440'''*.



a b, The entozoon seen from above; 1, the thread-like snout; 2, the tail.

c, As seen on its under side.

d e, As seen laterally.

f, Showing the body with the convolutions of vessels.

N.B.—The number of diameters to which the entozoon was magnified is not stated.

REMARKS BY HELLER.—Since the above facts were communicated to me by Hammerschmidt, I have frequently examined the excrement of young and full-grown specimens of the *Coluber natrix*, and have found the entozoa exactly as Hammerschmidt has described them. In one instance they were not detected in the excrement, which, however, contained numerous animalcules. When the animal was irritated, it discharged an offensive fluid (urine), which was found to contain a large number of the *Bodo Colubrorum*.—*Heller's Archiv für Physiol. und Pathol. Chemie*, 1844.

PATHOLOGY.

SCIRRHOUS TUMOR AT THE BASE OF THE CEREBELLUM. BY M. FRESTEL, D.M.P.

THE patient had been a serjeant in the Infantry, was of sanguine temperament, and good muscular development. He stated, on his admission into L'Hôpital de Saint Lô, that he suffered from pains in the head, disturbing his sleep, and interfering with his employment. His parents had been healthy, and he himself had never been confined to his bed. About eighteen months previously he had suffered from acute lancinating pains in the head, more severe at night, and marked by occasional intermissions of a few moments' duration. These pains were preceded neither by vertigo, delirium, nor fever, and the attack was very sudden. He resumed his employment after having been some months in the hospital.

In the course of a few months he was treated in the hospital, without mercury, for chancre; and during this treatment the pains reappeared at different periods. After this, he continued well for about five months; he was, however, then compelled, by a relapse, to give up his office of drill-serjeant, and was admitted into the hospital, under M. Frestel, Sen. His countenance was pale, though full, and he had not lost flesh. His chief complaint was intense pain, in the occipital region, becoming more severe at night. The iodide of potassium was ordered. For eight days the pain was relieved, but afterwards recurred as severe as ever. The medicine was continued for a week. The pain was then observed to become intermittent, and, on the supposition of the disease being occipital neuralgia, the sulphate of quina was ordered, and for a few days the pains were again relieved. Narcotics and blisters were also applied to the scalp with some success. At this time M. Frestel, Jun. first saw him. He found that the pains were limited to the occipital region, and were more severe at night; that the patient's intellect was not impaired, although his speech was slow and hesitating; hearing, vision, and sensation, were natural; there were no pains in the limbs; the skin was of a yellowish tinge. The patient sat up every day, went about alone without suffering from giddiness or trembling. The appetite, though less than it had been, was still good. There was evidence of lesion of the abdominal organs. The pains suddenly became intense, and he died suddenly without a struggle.

Necropsy.—There was nothing abnormal in the chest or abdomen. The membranes of the brain were injected, though probably by infiltration. There was no flattening of the convolutions, but, on the head being raised, a large quantity of serum escaped. The substance of the cerebral hemispheres was healthy. The ventricles contained some limpid yellowish serum. The left half of the cerebellum was enlarged, changed in form, and presented on its upper surface some small but very distinct elevations. At the inferior and posterior part there was a tumor, of the size of a large nut, attached by a peduncle. The right half of the cerebellum was pretty healthy, but near the median line the disease appeared to extend into it. The diseased structure was hard, resisting, and of a lardaceous appearance; on section, it presented the characters of scirrhous.

M. Frestel found, on inquiry, that the man had been quiet, cheerful, his sexual feelings natural, and that he had not manifested any signs of affection of the cerebellum. It is worthy of remark that the disease appeared suddenly, without any indication of

inflammation ; that his movements had never been affected in the intervals between the pains, even during the time of his being drill-serjeant, when the greatest precision in action was required. The cause of the disease could not be assigned. — *Gaz. Méd.* 1845.

[REMARKS.—The above case is the type of a numerous class ; showing that symptoms do not always furnish evidence of structural change, or indicate the line of treatment to be pursued. Every practitioner must be aware of the large number of cerebral cases in which, so far as our means of observation permit, the symptoms bear no constant relation to the structural change. The cause of this must be looked for in the fact, that the functions of the cerebellum, and the indications of its lesions, are too imperfectly understood to admit of much diagnostic accuracy. The case, however, is valuable ; it should serve as a stimulus to exertions in order to supply means for improving our diagnosis of these diseases. As to treatment, it may be remarked that the remedies were not attended with any marked effects. We all know that in several chronic diseases every change in treatment carries with it an amelioration of symptoms ; but whether this arises from the nature of the remedy, from the laying aside a medicine which may have become prejudicial, or from the influence of mental confidence, matters little—the fact is certain ; and upon it, too many build sanguine expectations which eventually lead to disappointment.—*ED. GAZ.*]

THYMIC ASTHMA.

BY M. CIRO-MAZZIALE.

AN infant, 13 months old, feeble, and rather lymphatic, born of healthy parents, and up to the period of attack in good health, was suddenly seized with the following symptoms. The respiration failed, and after five or six sibilant inspirations the child fell into a half-fainting sleep, during which the breathing, which was short, blowing, and imperfect, could scarcely be perceived, as if the air passed the glottis with difficulty ; the expiration was scarcely perceptible. The face was pale ; lips livid ; tongue protruded ; eyes fixed ; fingers spasmodically contracted ; beating of the heart obscure ; pulse low, scarcely felt ; extremities cold.

The attack, which was the result of a painful injury to the fingers, lasted three or four minutes, and then terminated by a deep whistling inspiration. It was repeated after an interval of seven entire days, in consequence of a fright. Eleven attacks subsequently followed, and each one was preceded by causes of a similar nature.

M. Cirro-Mazziale, according to the indications laid down in the Memoir of Buya, diagnosed thymic asthma, and ordered mild purgatives, and afterwards

derivatives, with a few leeches in the corresponding part of the jugular fossa ; friction was made with the antimonial ointment, and when the pustules were healed an ointment was substituted, composed of mercurial ointment, the extract of conium, and iodide of potassium ; internally the iodide of iron was administered. The attacks became more and more feeble, and the intervals longer, and at the end of six months the disease had entirely ceased, and the child had become much stronger. — *Gazette Médicale*, Mai 1845.

[REMARKS.—The above case is certainly interesting ; but it is a question how far the opinion regarding its nature was correct. The symptoms might have been referred to spasmodic affection of the larynx, which is by no means unfrequent in this country, and often treated for croup. The remedies, though more severe, at least those locally applied, than what would be required in such a case, were nevertheless adapted for the removal of the complaint, whether the origin were the thymus gland or the laryngeal nerves. The causes, also, were such as we might expect in cases of the latter disease.—*ED. GAZ.*]

SURGERY.

REMARKABLE CASE OF ACCIDENTAL AMPUTATION OF THE ARM.

A BAKER's boy, a youth of about twenty years of age, was engaged in raising some sacks of corn by a windlass. For the sake of a frolic he seized hold of the chain, wishing to be raised to the upper part of the granary ; but he was drawn so high, that his head came against that portion of the roof through which the chain passed. Not being able to hold by the chain, he fell with his arms stretched out. In falling, his left arm came in contact with the top of a door below, which was standing open ; and the force was such that the arm, which was bare, was completely separated, at about a hand's breadth, from the shoulder-joint. His body fell on one side of the door, and his arm on the other. Under this extraordinary amputation the arm appeared as if it had been chopped off by an axe ; the bone and muscles were as evenly separated as if they had been divided by a blunt knife, and the end of the bone was not at all splintered, a few nervous filaments only hanging from the wound. The fall of the patient must have been broken by his arm coming thus in contact with the edge of the door ; for the only injuries to his person were a few contusions and abrasions about the skin of the face. He was, however, at first speechless and insensible, but he recovered his speech and consciousness in a few days. The wound bled but little ; it was dressed, and the brachial artery was tied, to guard against accidental hæmorrhage ; the nervous filaments

were cut off, but neither the muscles nor the bone required the use of a knife or a saw. Fever with delirium followed. A strict antiphlogistic regimen was adopted, and ice was applied to the head. This treatment was attended with benefit. The wound of the arm, which was at first discoloured, assumed a good appearance; healthy suppuration came on, and the patient, after about two months, was perfectly restored. The stump cicatrized well, and the bone was completely covered with skin.—*Casper's Wochenschrift*, April 1845.

NEW OPERATION FOR THE CURE OF FUNGUS TESTIS.

In the disease commonly known to surgeons as "Fungus of the Testicle," and which is characterized by the protrusion, externally from the body of the testis, of a somewhat flattened, spreading, granulating surface, closely surrounded, at its base, by a thickened margin of the scrotal integument, Mr. Syme proposes a mode of treatment which he considers preferable to the plan of cure, by the knife or escharotics, usually adopted. Conceiving pressure to be obviously the agent on which reliance should be chiefly placed in the management of this disease, it struck him that the most convenient mode for compressing the growth seemed to be enclosing it within its proper covering of the scrotum. There is no loss of substance in this part, as the fungus, issuing through a small ulcerated orifice, merely presses the integuments aside, so that they are found lying in loose folds above the dense ring that encircles the neck of the protruded mass. It must therefore be easy to obtain from this source, an abundant supply of materials for the purpose.

Mr. Syme operates by making an incision of an elliptical form around the fungus. The integuments are then separated on each side and brought over the growth, where they are retained by a few stitches. The scrotum is then supported by plasters and a T bandage. The wound has healed quickly, in the two cases where Mr. Syme has operated, and there has appeared no tendency to a return of the protrusion.—*Abridged from Lond. and Edin. Monthly Journal*, Jan.

TOXICOLOGY.

ON THE ACCIDENTAL PRESENCE OF ARSENIC IN CHEMICAL APPARATUS AND MATERIALS.

"It is not likely that such enormous masses of material will ever be operated on again, as those which were made use of in some late French trials, and for which great iron pots were found indispensable; because it has been proved that absorbed arsenic is chiefly to be met with in particular organs or secre-

tions, such as the liver and urine. Besides, a false importance has been attached to the enthusiastic analyses of the whole human carcase, with which some French chemists have been astounding the minds of the scientific world as well as the vulgar, on the occasion of some late trials for poisoning. I confess I could not find fault with a jury who might decline to put faith in the evidence of poisoning with arsenic, when the analyst, after boiling the entire body with many gallons of water in a huge iron cauldron, making use of whole pounds of sulphuric acid, nitric acid, and nitre, and toiling for days and weeks at the process, could do no more than produce minute traces of the poison*. What man of common sense will believe that with such bulky materials and crude apparatus, it is possible to guard against the accidental admission of a little arsenic? At all events, I am much mistaken if a British jury would condemn a prisoner on such evidence—or any British chemist would find fault with them for declining to do so."—CHRISTISON.

STATISTICS OF DISEASE.

It is generally calculated that the 20th part of every population (5 per cent) is labouring under illness, and the 100th part (1 per cent) under some severe disease.—*Hawkins's Statistics*.

ROYAL COLLEGE OF SURGEONS.

Gentlemen admitted Members.

FRIDAY, June 27.—W. A. Eves.—W. Wilkinson.—S. M. Frost.—T. B. W. Buckler.—J. W. Slight.—J. H. Elliott.—A. Haviland.—W. W. Moore.—W. Preston.—F. J. Freeland.—T. F. Dyball.—J. H. Jerrand.—M. Teevan.

MONDAY, June 30.—C. Goodwin.—W. G. King.—G. J. Langsford.—T. A. O'Flaherty.—T. M. Parrott.—R. Blackie.—R. D. Blucke.—H. S. Colston.

FRIDAY, July 4.—W. Arthur.—N. H. Littleton.—W. T. Wilson.—W. Scott.—H. A. Warburton.—E. Warburton.—L. Keraus.—C. K. Webb.—L. Leslie.—J. Hay.

FRIDAY, July 11.—R. G. Brown.—W. B. Sealy.—J. Le Gros.—J. Parkin.—C. B. Wood.—W. D. Emmett.—E. Cousins.—R. W. Davies.—G. Cheesman.—B. Hamilton.—F. Nicholle.—J. Murphy.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

THURSDAY, July 3.—James Gilmour, Workhouse, Liverpool.—James Robertson, Melcombe Place.—Samuel Bertie Cator Barrett, Portsmouth.—William Lane.

THURSDAY, July 10.—John Foster Williams, Anglesea.—Charles Vicary, Warminster, Wilts.—Charles Houlton Webb, London.—John Mason, Cheddar.—John Hayward, Devizes, Wilts.—John Edward Brine, Wincanton, Somerset.—John Welch, Taunton.

* Orfila stated, at the trial of Madame Laffarge, that the arsenic which he discovered in the body of the deceased was so slight, that it would be difficult to weigh it. It was estimated at about half a milligramme, i. e. about one-thirteenth of a grain.

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURES ON SURGERY,

Delivered at Middlesex Hospital,

By J. M. ARNOTT, Esq.

Abscesses of the Bursa Patellæ; their Consequences and Treatment.

WHEN last on the subject of abscess, I instanced those of the bursa patellæ as cases in which an early and free opening was required—an *early* opening, because when supuration has actually taken place in one of these shut sacs, great tension, pain, and fever, are often the consequence; because the thickened and frequently indurated state of the integuments of the knee in those most liable to attacks of this complaint presents great resistance to the spontaneous opening of the abscess externally, and more especially because there is considerable risk of the abscess bursting internally, that is, into the surrounding cellular tissue, and exciting diffuse inflammation and suppuration there. In a healthy state of constitution, the extension of the inflammation, though of itself an evil, may not be attended with serious or permanent results; but in less favourable circumstances, burrowing abscesses, and sinuses requiring counter openings, a stiff limb, from the diseased state of the cellular tissue, and worst of all, extensive phlegmonous erysipelas, sloughing of the cellular tissue, and death, may be the result. A *free* incision is required in inflamed and suppurating bursa patellæ from the thickened state of the cyst and skin, and because, from the little elasticity of the parts, the thickened sides of the wound readily come in contact and reunite, so that unless you have taken the precaution of placing a piece of oiled lint between the edges, the chances are that you will have occasion to break down the union with your probe at the next visit; perhaps even to repeat this.

In some cases of suppuration of the bursa, acute inflammation has supervened on chronic of some standing. This was the case in Mary Ann Matthews, who was admitted with great swelling of the right knee, redness, and pain and stiffness of the joint. Fluctuation was felt in the situation of the bursa patellæ, where, for six weeks, she had had a lump, but it was only within the last week, after one of severe labour, kneeling and scouring floors, that it began to swell more, and became so painful as to compel her to give up her work. An incision having been made into the bursa, two ounces of thick glutinous pus were evacuated, with immediate relief to all the symptoms, which,

under warm fomentations and keeping the wound open, soon disappeared. The incision healed in due course, which, in all these cases, is more slowly than where the thin and cellular tissue merely are involved, as the bursal sac takes longer time to form granulations.

Sometimes the inflammation attacking a bursa is acute from the beginning, and is quickly followed by suppuration.

Jane Bostock, a girl of 20, housemaid, was admitted on Thursday evening, having been brought by her master from Finchley on account of great swelling, stiffness, pain and tenderness of the knee, which had suddenly taken place during the day. The girl said that she first felt the parts uneasy the preceding forenoon, and at night it got so painful as wholly to prevent sleep. The swelling was very great in this case, and diffused over both sides of the knee as well as in front, but, from the short duration of the attack, it was hoped that the inflammation might still be under the control of antiphlogistic remedies. Leeches were therefore applied, with fomentations, and a dose of calomel given, followed by the common black-draught. Finding no diminution in the severity of the symptoms from these means, and after a night's rest, an incision was made in the bursa, when purulent matter was evacuated; that is, in forty-eight hours from the commencement of the inflammation. Now, although an opening was made thus early, it did not prevent the inflammation extending to the surrounding cellular tissue, or rather suppuration had already taken place there, for copious discharge of pus ensued, continuing for ten days, and increased by pressure on the sides of the knee beyond the bounds of the inflamed bursa. In this case no counter-openings were required, the matter being regularly got rid of by gentle pressure night and morning, so that in four weeks the parts had quite healed, and the patient was enabled to leave the hospital well.

The subjects of the two cases already adverted to were young women, servants in respectable families, and as such their habits of living were no doubt regular and temperate. Contrast the immediate relief by incision and rest—the favourable progress and termination in them, with the very different events in that of Ann Hudson. This woman, 45 years of age, of fine form, and with manners and language above her station, earned her livelihood by charring, but was known at the hospital to be of intemperate habits when an out-patient on former occasions with other ailments. When last admitted, a few weeks ago, it was on account of inflammation of the knee and leg, originating in a fall on the former part four days previously. The house-surgeon applied twenty leeches to the part; but when I saw her next day, I found great swelling of the

knee and adjoining part of the thigh, severe inflammation of the upper part of the leg, the integuments of which were becoming red with vesication—in short, the seat of phlegmonous erysipelas. The swelling and pain had originated at the part struck, the bursa of which had previously been swollen at times. At this place fluctuation was now manifest, with great tenderness on pressure, and a free opening having been made, a quantity of pus was evacuated. A still longer incision was made through the integuments of the leg (which exposed the cellular tissue, loaded with lymph, and of tawny colour), in the hope of arresting the progress of the phlegmonous erysipelas; but in vain: it spread down the leg, up the thigh, ultimately to the hip; additional incisions being made, and portions of sloughing cellular tissue, like wet tow soaked in pus, evacuated. Excess of bleeding from the incisions was guarded against, and beef-tea, wine and brandy, &c. were administered, but the influence of a bad constitution and intemperate habits were not to be counteracted, and she died in eight days from her admission.

You will recollect what a marked contrast was presented by the appearances of the thigh and leg in this case. Both were greatly swollen, but the skin of the latter was thickened, red, and covered with vesications, while that of the former was distended, it is true, but not discoloured, or presenting any of the ordinary evidences of inflammation—with the exception that the veins were more numerous than natural. The swelling of the thigh was dependent, in fact, on inflammation of the subcutaneous and subfacial cellular tissues, which was evidenced by the great tenderness on pressure further than that which merely reached the skin. Ultimately the skin also participated, and became red and vesicated shortly before death; but instead of presenting the characters of phlegmonous erysipelas from the first, like the leg, that of the thigh was primarily diffuse inflammation of the cellular tissue. Nor is this distinction unimportant, for I have known the ignorance of it lead to the nature of the case being overlooked, and a patient die of diffuse inflammation of the cellular tissue of the thigh without its existence having been suspected, and chiefly because the skin of the thigh preserved almost its natural colour.

A man received a pistol-shot in the thigh; the ball entered in the fore-part, ran up along the bone on the outside, and lodged close to the trochanter, from which it was removed by a small incision, the distance between the two openings being seven or eight inches. Some swelling of the thigh took place, and the patient, in four or five days, was attacked with what was called

irritative fever, of which, in nine days, it was alleged he died; for the state of the thigh had not attracted the attention it deserved, and the cause of the constitutional disturbance, and of death, was overlooked. On examining the limb after death, I found the subfascial cellular tissue inflamed, and loaded with serum, lymph, and pus. The subcutaneous was not involved. Had the true nature of this case been detected during life, and a deep and free incision made, the irritative fever might have been prevented, and the issue of the case different. It affords, however, a good illustration of the propriety of the reservation made by modern military surgeons when they explode the old doctrine and practice of enlarging all gunshot wounds. They assert, that the non-interference principle is not to be extended to cases in which balls have passed through soft parts covered with dense fascia, as in the thigh, that an early and free division of these tough and unyielding tissues should be made.

Venercal Abscess of the Testicle.

It has been asserted by authorities of some estimation, that the venercal testicle never suppurates. This is a mistake, and is founded on limited observation. During the winter we have had two examples to the contrary.

Thomas Liddon, 25 years of age, was admitted in November last with a deep ulcer on the fore-part of the scrotum, close to the penis. Its edges were sharply defined, and its base void of granulations. The ulcer occupied the integuments on both sides of the raphe, and a probe passed into the bottom of it was led by a sinus into the left testicle, which was enlarged. The right testicle was equally increased in size, but no communication existed between it and the ulcer. There was, however, in the cellular tissue of the scrotum, in front of this enlarged right testicle, a cake of thickened tissue, connected by a cord-like substance, or pedicle, to the testicle; and in this cake fluctuation afterwards was felt. The enlargement of each testicle was moderate in amount; it seemed as if both gland and epididymis were involved—at least, their limits could not be made out; there was tenderness on pressure, without positive pain at other times. The swellings could not be said to be knotty, though not of uniform and smooth surface, and there was not the stony hardness of some diseases of the part.

The true nature of these swellings was indicated by some other symptoms present, and by the previous history. On the right buttock was a circular sore, the size of a shilling, of chronic phagedenic character. There was a soft swelling over the lower part of the right ulna, evidently from

effusion under the periosteum. Had chancre three years ago, for which he took pills six weeks and got well. Eighteen months previously swelling of the right testicle had first taken place; and about twelve months ago that of the left occurred. On both sides of the scrotum anterior to the testicle a lump formed; that of the right subsided under treatment in St. George's Hospital, into which he now went, but that of the left came forward and broke, the opening closing at the end of two months, when he left the hospital. The parts remained sound for some time; but, about two months before applying here, they again got bad. The swelling on the ulna was not observed until about a month previously. The case was viewed as one of the phagedenic forms of venereal disease, and the treatment adopted consisted in the exhibition internally of the *Liquor Hydrargyri Bichloridi* *5iss.*, *Decoct. Sarzæ* *co. ʒiij.* *ter*, which was steadily persevered in, and the man had meat and a moderate allowance of beer. Locally, the sores on the scrotum and thigh had, first, an application of diluted *Liquor Opii Sedativus*, but this was changed for *Cinnabar fumigation*, under which, in a few days, they lost their phagedenic character, and began to granulate.

I need not go over the daily reports of the case. You will recollect that under the remedies I have mentioned the enlargement of both testicles gradually but steadily subsided; that the cake-like swelling of the scrotum connected with the right testicle at first advanced, softened, and evidently contained fluid, but ultimately subsided without breaking, the fluid becoming entirely absorbed: that the discharge from the left testicle ceased, and that the ulcers of the scrotum and thigh cicatrized; so that when the patient left the hospital at the end of six weeks, both testicles were reduced nearly to their ordinary size and natural firmness, and there was merely a small knob on each, by which they were attached to the scrotum in front. These knobs were decreasing in size, and there was every reason to expect that, under the continued use of the bichloride and sarsaparilla, which he was advised to pursue, they would soon disappear.

I do not mean to assert positively that the fluid absorbed from the collection in front of the right testicle, whence it proceeded, was, in this instance, true pus. It certainly was the product of chronic inflammation, but may have been like that of a soft node, where the fluid effused under the peritoneum is at first of a glairy semitransparent character, but afterwards become purulent. It was the belief in the possibility of this which induced me not to open it, and the absence of any urgent reason for opening it. Once converted into the condition of a sinus,

it would have been more tedious of cure.

Venereal abscess of the testicle.—The second example of this occurred in Thomas Mylne, a seaman, 50 years of age, who brought the following note from a surgeon under whose care he had been, and which will explain to you why the man came with the expectation that his testicle was to be removed.

"The bearer is suffering from lues venerea of long standing. His case has resisted a mercurial course—iodide of potass, sarsaparilla, bark and acid, and the usual treatment in such cases. He has a phagedenic ulcer on the penis, sloughing ulcer on the head, and a diseased testicle, which probably will require removal. His case is urgent and serious."

There was a foul, deep, brown sore, the size of a shilling, on the under part of the glans penis, and adjoining part of the prepuce; the edges sharp and well defined, the adjoining glans bright red; a swelling on the left side and front of the scrotum, with an opening in it discharging pus; this swelling was caused by a firm nodule, seated under the integuments, to which it was adherent, as well as to the testicle, which was enlarged and firmer than natural. A probe introduced into the opening passed into the substance of the gland. There were seven or eight ulcers on the hairy scalp, but no exposed bone; copper-coloured spots on the forehead, some in the state of pustule. There was no affection of the throat or bones.

Mylne gave an unsatisfactory account of the origin of his complaint, but stated he first felt really ill, and obliged to give up work, about two years previously, when on the coast of America. About a year since both testicles swelled, and then eruptions came out on his head. He went into a provincial hospital, rubbed in mercury, and his mouth became sore. The swelling of the testicles diminished, that of the right went entirely away, but on the left a hard substance remained; this continued stationary until a few weeks since, when it got larger; the skin became red, a pimple formed with a white head on it, which broke and discharged matter five days before his entrance. The sore on the penis appeared seven weeks ago, and was attended with severe pain, so that he got no sleep. He had no pain in the testicle, except on pressure.

The first object in the case was to procure relief from the pain attending the phagedenic sore of the penis, and consequently sleep, which were effected by a scruple of Dover's powder every night taken at bed-time. In a few days it was put upon the *Liquor Hydrargyri Bichloridi* in doses first of *ʒiss.* and then *ʒij.* three times a day in decoction of sarsaparilla, with the extract. This was

continued throughout the three months he remained in the hospital, and was, no doubt, the efficient agent in his cure. Under it the discharge from the sinus in the scrotum and testicle decreased and ceased, and the opening closed; the testicle became reduced to nearly its natural size and softness; the ulcers on the scalp healed, and he regained his flesh and looks. The phagedenic ulcer on the penis gave some trouble. When the pain in it had been relieved by Dover's powder internally, and the Liq. Opii Sedat. used as a lotion, the Barbadoes naphtha, and the Lin. Æruginis were tried without benefit; but under Cinnabar fumigation it granulated on the prepuce, and partly on the glans, whilst it spread farther superficially on the latter by a phagedenic edge. This was arrested by applying the pure nitric acid to the ulcerating edge alone, and three weeks before he left the hospital it had entirely cicatrized. The only thing remaining when he was discharged was a slight fullness of the left testicle, without induration. The tract of the sinus, and its accompanying induration, had disappeared. For the last fortnight the Bichloride of Mercury had been omitted, and the Iodide of Potassium substituted for it; and this he was recommended to continue for two or three weeks after he left the hospital.

Here, then, were two cases of venereal testicle attended with suppuration. In each case both testicles had been enlarged from chronic inflammation. In each case the swelling in one testicle had advanced to the formation of matter, followed by its discharge. In one of the cases the matter occurring in connection with the enlargement of the other testicle, became absorbed. In both cases the form of venereal disease present was the phagedenic; and in both cases the treatment pursued, and proving successful, was a combination of bichloride of mercury and sarsaparilla; the former, no doubt, being the most powerful agent, but not given so as to produce its full effect on the system, but only in moderate quantity steadily persevered in. It might be called a mild mercurial and tonic course.

Pediculated Tumor of the Pharynx.

Tumors of the pharynx are fortunately not of frequent occurrence, for, from their situation, they interfere with most important functions, are seldom capable of removal, and then generally not without difficulty and danger. Yet sometimes they turn out to be of a less serious nature than at first sight appeared, and admit of being removed with comparative ease, of both of which circumstances you have recently had an example.

Amy Gilbert, aged 19, presented herself here ten days ago, speaking, as it is called,

through her nose, and inarticulately, complaining of great difficulty of swallowing, and all owing, as she said, "to a lump in her throat," which had been noticed for three months, although the imperfection of speech and of deglutition had existed for a longer period. The girl was thin, but externally there was no appearance of swelling. On looking, however, into the mouth, there was seen, behind the isthmus faucium, amidst a quantity of froth and ropy mucus, a tumor of rounded form rising apparently from below, filling the upper part of the pharynx, and projecting slightly forwards between the arches of the palate. The colour of the tumor was that of the surrounding parts, but its surface was rough and irregular. The finger carried over the root of the tongue could be passed between the tumor and the entrance of the glottis, and a probe could be carried laterally around all that part which was visible, and also superiorly: its connection posteriorly and inferiorly could not be positively determined; but, from a certain amount of mobility of the tumor under the finger, I concluded that it was attached by a pedicle, and not by a broad base, and probably to the posterior part of the pharynx below the level of our sight.

What was the nature of this growth? I could not say, but I disliked its appearance. Could it be removed? Certainly it ought to be attempted; but how? It might be twisted off perhaps, but then I did not know the real extent of its attachments, and bleeding in this situation would have been attended with the greatest danger. I resolved to tie it, and, as you saw, applied a ligature by means of the common uterine polypus tube. A running noose was made of a size to pass over the swelling, and the ends of the thread passed through the tubes. I next succeeded, with some little difficulty, in carrying the loop on the most prominent part of the swelling, and the ends of the ligature being now drawn, the noose fortunately slipped over the tumor on its base. Being tightened, and a second knot tied, the mass acquired a livid colour, shewing that it was probably strangled; but on looking at it again in a few seconds, I fancied its colour was not so dark, and resolved to apply another ligature, which was much more easily effected. In doing this I felt that the tumor was now very movable, had a globular form, and I acquired the conviction, almost the certainty, that its pedicle was very narrow; so to get rid of it at once I twisted it off, to the great gratification of the patient, whose exclamation, "Oh! I am so glad it is out!" at once testified her recovery of the powers of speech and articulation. No bleeding followed, and the young woman left the hospital in a few days.

The tumor was the size of a green walnut, attached by a narrow pedicle. It had an irregular surface, not unlike that of a mulberry greatly magnified, with this difference, that some of the elevations were pediculated. The appearance of a section of the mass presented a singular contrast with this. It was that of a firm fleshy substance, of one uniform character, without the least appearance of fibre, cell, or deposit, intermixed. In consistence and colour it corresponded with what has been called albuminous sarcoma. Minute blood-vessels were seen ramifying in the uniform and solid tissue.

Under Mr. Tulk's microscope, it seemed made up of caudate nucleated cells, and its surface was covered with a thin layer of epithelial cells.

Broad-based Tumor of the Pharynx.

A patient was here a few weeks ago, who, five years since, was in the hospital with a tumor of the pharynx of more formidable appearance than that we have been considering, and the events of whose case possess even a greater interest.

Ann Parker, æt. 40, admitted Jan. 30, 1840. Married; six children, the last six months old, which she has just weaned to come into the hospital.

Has a tumor of globular shape seated on the left side of the fauces, projecting two-thirds across the isthmus, and carrying the uvula before it, bounded by the anterior arch of the palate in front, and nearly touching the posterior parietes of the pharynx (which it half fills) behind, and descending inferiorly into this cavity below the level of the root of the tongue when depressed by a spatula. The tumor is covered by mucous membrane of natural appearance; it has a smooth surface, and feels firm to the touch. The base is broad, and its attachments are firm; it is immoveable. Its greatest diameter is from above downwards, in which direction it measures two inches. No trace of the tonsil or posterior arch of the palate on this side can be seen. The latter was effaced by the distension of the tumor, and no doubt spread over its surface. Pressure on the tumor gives no pain.

It produces a very uneasy feeling of suffocation and dyspnœa, which is worse at night, or when her head is low. Sometimes she has spasmodic attacks about the throat, so as to compel her to get up, and walk about. These have been worse lately, and have been relieved by medicine: they are sometimes produced by swallowing. She is able to swallow liquid and small masses of soft food without difficulty. She has much discharge of saliva, and always "feels a desire to spit up mucus, but cannot." Her health is tolerably good, but she feels very low-spirited. The tumor has increased more

rapidly since her last confinement. About a year and a half ago she first perceived a small hard swelling in the same situation, about the size of a small hazel-nut. Her attention was first directed to it by a suffocating feel in the night. A month before this she received a blow from a man's fist on the left side of the jaw, and she felt pain till the swelling began, and some time afterwards. She was then made an out-patient at St. Thomas's, under Mr. Green, who lanced it, and let out some thick black blood. It was blistered, and her mouth was made sore by mercury, and the sublingual glands then became enlarged, but soon subsided again. It has gradually increased in size, and the symptoms have become worse: she has had no further advice, except occasional doses of medicine.

Pil. Coloc. c. Calomel, gr. x. statim.
Magnes. Sulph. ʒij. ex Inf. Rosæ, ter die.

Feb. 1st.—Mr. Arnott punctured the swelling with a grooved needle, and found it to be solid and resisting.

Pot. Hydriod. gr. iv. ter die.

6th.—Complains of headache, and want of rest at night.

Pot. Hydriod. gr. ij.; Inf. Aurant. Co. ʒiiss. ter die. Liq. Morphicæ Acet. ʒ℥x. h. s. o. n.

10th.—Is much purged.

Dec. Sarzæ. Co. ʒiij.; Pot. Iod. gr. ij. ter. Liq. Morph. Acet. ʒ℥xv. o. n.

March 9th.—Believing the disease to be malignant, and considering that its attachments were firm, and its probable relations with important parts at the angle of the jaw, Mr. A. determined not to meddle with the tumor, and had only hoped that its growth might be checked. He stated this to the patient, and recommended that nothing further should be done, but added that if the disease threatened her existence by suffocation, he might perhaps change his intention. As the hospital was evidently not agreeing with her, she constantly complaining of headache, fever, want of sleep, and attacks of suffocation at night, he advised her to leave the house.

13th.—The patient returned yesterday, stating that for the last two nights she had had such severe spasmodic attacks that she dreaded immediate suffocation, and begged therefore that something might be done to relieve her at all risks. Mr. Arnott to-day (the patient being placed on a chair opposite a window, and her head supported by assistants) divided the mucous membrane freely over the surface of the tumor, and exposed some muscular fibres. These were next divided, and a semi-transparent spot

was seen, which was found to be a very small cyst containing some serum. The mass of the tumor being slightly cut into was found as was expected solid, and bled freely. The finger was now passed round the tumor inside a cellular coat or cyst which embraced it, so as to expose its neck, which was very thick and fixed; a ligature was then passed round it, and tied, but the substance of the tumor broke down under it, and portions of it came away, having the appearance of white fibrine. Another ligature was then passed closer to the base than the first, but this also cutting its way through the mass, was tied, and the ligature left on. Under this there was some bleeding, but not to any extent. Evening.—Great pain, inability to swallow, portions of tumor coming away. The following draught was given her through a tube passed through the mouth into the œsophagus—

Liq. Morph. Mur. ℥xx.; Mist. Camph. ʒiiss.

14th.—Much pain, but able to swallow a little arrowroot; bowels not open; pieces of tumor come away. In the evening, a draught could not be given, as last night, but she succeeded in getting down—

Liq. Mur. Morph. ℥xxv.; Leeches x. to throat, which is swollen.

15th.—Slept a little; bowels confined; impossible to pass tube so as to give aperient, therefore had enema oliosum. Mr. Arnott removed several mortifying pieces. Breath much distressed, and great fœtor; slough nearly fills fauces: anxious and distressed. In the evening bowels relieved from enema, able to swallow a little.

. Morph. Mur. ℥xx.

16th.—Had little rest; slough firm; can swallow a little, but is much distressed by smell of the slough. Had an egg for breakfast. Bowels open; wishes to try without night-draught, as she had so little sleep from it, and dreads swallowing.

17th.—During last night unable to sleep. Had Liq. Mur. Morph. repeated about 5 A.M. Slept afterwards. To-day feels easier; swelling in neck painful; bowels not opened; fœtor from breath not so offensive. Ordered to apply to slough—

Acid. Nit. ʒss.; Aquæ, ʒviij. sœpe.
Haust. Sal. ter. Beer, Oss.

19th.—No sleep last night, and very indifferently the night before, although she took Liq. Morph. Mur.; complains of a great deal of pain; bowels confined. Took Haust. Sennæ Co. c. Magn. Sulph. ʒij., which relieved her. Had at night Liq. Mur. Morph.

20th.—Had little sleep; slough not so much in throat, can speak better. The liga-

ture came away to-day at the visit. Ordered—

Liq. Morph. Hydroch. ℥xxv.: having a troublesome cough, ordered Linctus.

21st.—Slept better. Throat much the same, can swallow better than on 17th. She takes no medicine, but continues the acid lotion to throat.

Pt. Haust. Anod. h. s.

22d.—Mr. A. applied the Potassa fusa to the base of the tumor.

Haust.

23d.—Slept better; speaks better; bowels confined. Ordered—

Haust. Sennæ Co. statim.

Slough very offensive. Ordered—

Sol. Chl. Sodæ, ʒss.; Aqua, ʒviiss.

Complained of during sleep frightful dreams; therefore changed opiate to Acet. Morph.

31st.—Slept better last night, and without a draught; speaks better; bowels not confined; swallows better, can relish a mutton chop; dreams less; complains of a disagreeable taste in the mouth. Has headache in the morning, which usually goes off about twelve in the day; the cough continues, but she expectorates less; has pains in the face and neck.

Haust. Scillæ Co. ter.

April 23d.—Gradually improved. The caustic potass was reapplied, and for last ten days has been taking Hydrarg. c. Creta ter, under which the size of remaining portion of swelling has greatly diminished. The ulcerated surface is now very small in front of velum, and from it very trifling discharge occasionally streaked with blood. At one time she experienced great pain in left ear, but leeches relieved this.

May 24th.—Left the hospital to-day.

29th.—Came to-day as out-patient; there is now only a small mass of healthy-looking granulation, the size of a nut, in situation of the tumor.

June 12th.—The portion of swelling deep in the pharynx has disappeared, and the only remaining evidence of disease are the small granulations, arising from the projecting and everted edge of the contracted cyst.

Nov. 2d, 1840.—Shewed herself to-day; continues well; the part has been healed for some months, and there now remains merely a slight elevation at the seat of the cicatrix, which would not be noticed by one uninformd of her previous history.

When this patient first sought relief, the character of the tumor, its firmness, united with a certain degree of yielding on pressure, its solidity ascertained by the grooved needle, its smooth surface, the absence of anything like inflammation, and its growth and history, led to the conclusion that it was probably a

malignant growth, in fact, medullary sarcoma. With this view of its nature, the expectation of deriving permanent benefit from an operation could not be entertained, and the situation of the tumor and its attachment forbade in my opinion any operation being attempted, except in very urgent and extreme circumstances. For if it was malignant, with its attachments, it could not be wholly removed, and temporary prolongation of life would be purchased at the great risk of immediate and dangerous hæmorrhage by the operation, and the additional and certain evil of bringing malignant disease into a state of ulceration, and that in the throat.

But there was a possibility that the tumor though solid might not be of malignant nature, and if it was contained in a cyst, this might be opened after dividing the mucous membrane covering it, and the greater part of the mass being separated from the cyst, the rest of it, including its attachments, where the blood vessels entered, might be included in a ligature. Yet the balance was not in favour of this supposition, so that I did not feel justified in preparing to act upon it, except in the case of urgent danger, when I held out to the patient the expectation that I might attempt something for her relief. I also contemplated opening the trachea to save life in case of threatened suffocation.

When the patient returned in a shorter time than I expected, the observation of the distress she experienced in respiration during one night's abode in the hospital satisfied me of the necessity for action. In doing what was proposed, care was taken to have the actual cautery in readiness, as the only favourable means of arresting the hæmorrhage should it occur.

The mucous membrane was divided over the most prominent part of the tumor without bleeding of any consequence, then a layer of muscular fibre, and then a cyst, which being likewise freely opened, the edge retracting a little, exposed the substance of the tumor itself. Hitherto the bleeding was inconsiderable, but on making an incision into the substance of the tumor, which I did to be quite certain of its nature, it bled freely. I then proceeded, partly by the handle of the scalpel, but chiefly by the finger, to push back the cyst from the tumor as far as possible, and then finding the base broad, applied the ligature as has been described.

The issue was, that in a case of tumor, of very unfavourable appearance, and awkwardly situated, by an operation, not of the most satisfactory nature, but as much so as the nature of the case admitted, the life of the patient may be said to have been saved, and prolonged now for five years. This tumor, also, was one of albuminous sarcoma.

CONTRIBUTIONS TO MICROSCOPICAL MORBID ANATOMY,

*Selected and Translated from the German
Work of*

DR. JULIUS VOGEL, of Göttingen,
Entitled "Erläuterungstafeln zur pathologischen
Histologie."

By W. S. KIRKES, M.R.C.S.L. &c.

*Effects of inflammation in the posterior
chamber of the eye, after the operation
for cataract.*

AN old man, who was affected with cataract of both eyes, was operated on by Scleroticomyxis. The operation, which was performed on both eyes, was unsuccessful; after suffering most intense pain in the eyes, inflammation of them succeeded, and the man died about fourteen days from the date of the operation. The eyes were carefully examined after death. In one, the cornea was opaque and white. The pupil was uneven and angular, and was perfectly closed by a smooth membrane tightly stretched across it. The lens was found reclined, immediately behind the iris; it was small, of a greyish brown colour, and was enclosed within a thick, white, and very soft membrane, which formed a kind of capsule around it.

This soft membrane or capsule when examined beneath the microscope was found to be quite amorphous in its structure; it had a few fibres adhering to it in places, but these had been stripped from the outer layers of the lens. The substance of the membrane was entirely made up of dark globules filled with minute granules, and resembling very closely the ordinary granule-cells of inflammation: together with these, were large quantities of separate granules, which were strewn irregularly about, or arranged in large shapeless heaps. Neither the globules nor granules were dissolved by nitric acid, which reagent had the effect of rendering the entire mass turbid and opaque, by coagulating the albumen; neither were they dissolved by acetic acid, although the membrane of each globule was rendered more pallid by this reagent. On the addition of ether the albumen was coagulated, and the granules seemed to disappear. The fibres entering into the composition of the outermost laminae of the lens were broad, very pale, and transparent. Towards the inner laminae they became narrower, and were dentated at their margins, and when accumulated together they appeared dark and opaque.

The membrane closing the pupil appeared perfectly amorphous in structure; not a trace of the muscular fibres of the iris could be detected in its composition. On treat-

ment with acetic acid it became very pale and transparent. There was nothing abnormal found in the other parts of the eye, except that the choroid appeared very deficient in black pigment. The ciliary processes were free, and no where adherent to the capsule.

In the other eye the pupil was also perfectly closed by a newly formed membrane, which was as equally amorphous in its structure as that of the one previously described. This membrane was connected by means of membranous bands with the lens and its capsule, also with the ciliary processes and the anterior margin of the retina, by which means all these several parts were so agglutinated together in the region of the pupil, that they could not be separated from each other without much tearing. The lens was pushed out of its situation; it was small and of a greyish-brown colour. It lay loose in a soft sac-like membranous capsule, of a perfectly white colour, which when examined beneath the microscope was found to be quite amorphous in structure, being composed of numerous granules, both scattered and arranged in irregular heaps; corresponding in this and in other respects with the description given of the membrane surrounding the lens of the other eye. Near to the enclosed lens was situated a small soft and whitish body, about the size of a pea, having a muco-purulent character; when examined beneath the microscope it was found to be made up of numerous granule-cells and irregular heaps of granules disseminated through an amorphous mass. The other parts of this eye presented nothing abnormal.

Penetrating wound of the chest, microscopic examination of the tissue of the injured lung, and of the external soft parts, after death.

The subject of the following case was a stout, healthy countryman, who was thrust at by a stag which he was driving from its cover during a hunt. The point of one of the antlers of the animal entered his chest, penetrating beneath the left axilla, close to the middle of the axillary border of the scapula. Several ribs were fractured by the force of the blow. The symptoms which succeeded this accident were very severe: the dyspnœa was especially great. Upon ausculting the lung on this side there was distinct respiratory murmur audible over the upper part of it, but below, there was amphoric resonance of the voice and of the cough, together with tympanic resonance upon percussion,—symptoms which led to the suspicion of pneumo-thorax existing there. The stomach and colon soon became greatly distended and tympanic, and the man's countenance assumed a yellow cada-

verous aspect. The opening of the wound was enlarged and a considerable quantity of matter let out. Mixed with this matter was some blood, the presence of which was caused by the act of dilating the wound; the sanguineous portion of the matter speedily conglobated, and formed a small gelatinous clot, with a large quantity of colourless serum: few blood-corpuscles were formed in it. On the following morning, when the dressings were removed, there was a fresh discharge of matter from the wound; it was again of a reddish colour, showing the admixture of blood, but on the whole it was of a darker colour and more turbid than before. After standing a short time a small clot formed in it. A microscopic examination of this matter detected numerous blood-corpuscles which were partly destroyed—the commencing formation of pus, the corpuscles of which were yet very small and imperfectly formed—also signs of incipient putrefaction, denoted by the presence of vibrions.

During the following few days the symptoms of the case varied considerably; at one time the discharge from the wound would be very abundant, and the respiration comparatively easy; whilst at another there would be a diminution of the discharge and an aggravation of all the symptoms. At length, however, came a decided change for the worse, the dyspnœa became very intense, and the patient died about the 10th day after the accident.

Examination of the body offered the following results. The left lung in parts showed the signs of active inflammation, which had advanced to the stage of grey hepatization: in other parts the tissue of the lung was gangrenous and loaded with sanies. The hepatized parts, when examined beneath the microscope, were found to contain neither air nor blood, and presented an homogeneous granular-amorphous appearance. On treatment with acetic acid such portions were rendered pellucid, and the fibrous network of the pulmonary tissue came into view. In some parts this hepatized tissue had begun to soften, apparently in consequence of the exuded matter losing its vitality, and degenerating. Where this softening was furthest advanced, it had resulted in the formation of small abscesses about the size of hazel-nuts in the pulmonary tissue, which were filled with a soft yellowish-white substance, possessing a strongly acid reaction. When examined beneath the microscope this substance presented the appearance of a perfectly amorphous broken-up mass, which was evidently the detritus of some previous form of organized matter; mixed with this amorphous mass there were also numerous heaps of granules (? fat). Upon treatment with acetic acid this substance was rendered more transparent, without however being

completely dissolved by it. Here and there, enclosed within this substance, were observed portions of dead pulmonary tissue—remains of the fibrous bundles entering into the structure of healthy lung.

Those portions of the pulmonary tissue which were destroyed by gangrene were of a livid colour, and contained a dark chocolate looking fluid, of a foetid odour; very little air was found in these portions, and the blood which they possessed had lost its red colour, being colourless and completely decomposed; a large quantity of granule-cells were scattered through these gangrenous portions of tissue. The cavity of the left pleura was filled with an ichorous fluid, whilst its surfaces were lined by a layer of exudation substance. The thin ichorous fluid in the cavity was of a dark chocolate colour, and very foetid, resembling that with which the tissue of the gangrenous portions of the lung was infiltrated. With the microscope numerous colourless blood corpuscles, granule-cells, and desquamated epithelium scales were found in this fluid. The layer of exuded matter with which the surface of the pleura was lined was about one-fourth of a line in thickness, of a yellowish-white colour, and soft in consistence. When portions of it were examined beneath the microscope they appeared perfectly opaque, and of a brownish colour, owing to the immense number of granules of fat which they contained. So completely was every part of this substance beset with granules of fat, that it was impossible to determine how far the exuded matter had advanced towards organization. The addition of acetic acid rendered this substance much paler. The right lung was tolerably healthy.

Upon examining the external soft parts there was found a large sloughing abscess, situated between the scapula and the ribs, having a communication with the external wound, and extending downwards in the form of a blind pouch. All the ribs on the left side from the third to the seventh were broken in two or three places. The fluid which was obtained from the abscess had apparently the characters of pus, but when examined microscopically it was found to contain very few pus corpuscles, being made up chiefly of an amorphous granular matter or debris, together with numerous granules of fat, many large drops of oil, and several distinct crystals of margarine, all of which were contained in a mucus-looking fluid, which on the addition of acetic acid became coagulated, and converted into a granular amorphous mass. Thus the matter contained in this abscess was not actually pus, but consisted of the fibres of organized tissue destroyed by gangrene. The internal surface of the abscess was lined by a greyish-white, soft, and slimy matter, which

at first was supposed to be exudation-substance, but which on microscopic examination was proved to consist of the remains of cellular tissue destroyed by gangrene. The gangrenous parts merged into surrounding healthy tissue, which was of a dark reddish colour; all the blood contained in this otherwise healthy tissue, however, was dissolved, no entire blood corpuscles could be found. Here and there some minute black granules were observed scattered about, in the half-destroyed adipose tissue; they seemed as if they had originated from the decomposed blood.

In various parts of Vogel's work there are accounts of the examinations of tumors. The results of the most interesting of these examinations have been collected together, and arranged under the two distinctive heads, of *innocent* and *malignant* tumors; in this order they are offered, commencing with the *encysted* variety of innocent tumors.

Encysted tumors.

I.—The following account comprises the chief results of a minute examination made by Vogel of a small encysted tumor, about the size of a hazel-nut, which was situated beneath the skin, immediately in front of the left ear of a young man, and which was extirpated by Breschet in the summer of 1839.

The matter contained within the cyst of this tumor was a thickish fluid substance, somewhat resembling boiled groats, of a yellowish-white colour, and possessing a strongly acid reaction. When examined beneath the microscope this substance was found to consist—

1st. Of pale, very transparent cells, somewhat plicated, and from $\frac{1}{50}$ to $\frac{1}{100}$ of a line in diameter, (fig. 28. A*). The majority of them contained very pale nuclei. These cells underwent no change on the addition of acetic acid or ether, but by caustic potash they were gradually rendered more pale, and were eventually entirely dissolved. They formed the chief ingredient of the substance with which the cyst was filled, constituting about two-thirds of the entire mass.

2d. Of tabular rhomboidal crystals of cholesterine, (fig. 28. B), which were not affected by acetic acid or by caustic potash, but were soluble in ether; these crystals constituted about a fourth part of the substance.

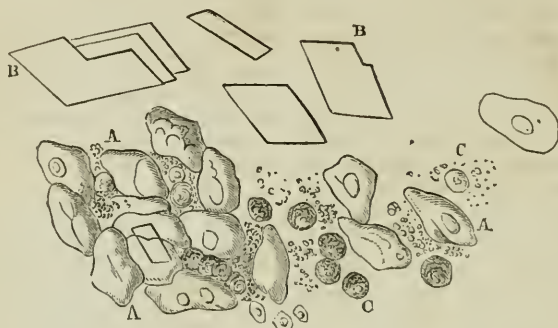
3d. Of small round corpuscles, about $\frac{1}{250}$ of a line in diameter, (fig. 28. C), resembling in form and general appearance pus corpuscles and the cells of the undermost layers of epidermis. On the addition of acetic acid the cell-walls of these cor-

* Magnified 220 diams.

puscles were rendered pale, and by degrees became completely dissolved, upon which a single or double nucleus in each corpuscle was brought into view. In this

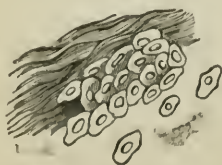
respect also they resembled pus corpuscles. There was a tolerably large quantity of these corpuscles in the interspaces of the large pale cells described above.

FIG. 28.



The membrane composing the cyst within which the soft mass of the tumor was enclosed appeared at first sight to be about as thick as the back of an ordinary knife, and to consist of but one layer; but upon closer examination it was found to admit of separation into two distinct laminæ. The inner of these layers, which was the thickest of the two, was of a white pearly lustre, very friable, and composed entirely of the large pale cells above described, and of a few scattered crystals of cholesteroline; consequently it was merely a condensed outer layer of the contents of the cyst, and did not form any part of the true cyst itself. The outer of the two layers, which was in reality the cyst, had a thickness not greater than that of letter-paper; it was soft and extensible. When examined microscopically it was observed to be composed of fibro-cellular tissue, the fibres of which were arranged in fasciculi as in ordinary fibro-cellular texture; these fasciculi crossed each other in every direction, and were intimately woven together, so as to constitute a perfect membrane. The internal surface of this membrane or cyst was lined by a distinct epithelium composed of flat cells arranged together in a tessellated manner; the nuclei of these cells were brought distinctly into view by treating them with acetic acid (fig. 29).

FIG. 29.

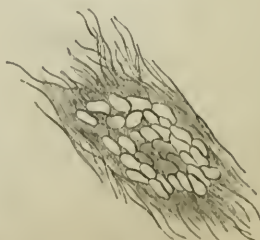


small encysted tumor which was extirpated by Breschet from the forehead of a female, gave the following results.

The contents of this cyst were composed of a soft, greasy, fatty substance, which, when examined microscopically, exhibited a very large quantity of tabular crystals of cholesteroline. These crystals were not affected by ammonia or by caustic potash, but were perfectly soluble in ether. They were imbedded in a mass of substance which was partly amorphous and partly finely-granular. Towards the middle, the substance forming the contents of this tumor was very soft, almost fluid, but it became much firmer towards the exterior, and at the very surface it formed a tolerably compact layer, which from its firm membrane-like character might readily have been supposed to constitute the cyst, which however it did not, for when examined microscopically it was found to be entirely composed of a partly amorphous, partly finely-granular substance, containing imbedded within it a few crystals of cholesteroline; thus proving it to have the same composition as, and therefore to be identical with, the other portions of the substance of which this encysted tumor was composed.

The real cyst of the tumor, which was

FIG. 30.



II.—The examination by Vogel of another

situated immediately external to the compact

layer just described, was very thin, much thinner than letter-paper; it was composed of fibro-cellular tissue closely interwoven, and was lined on its internal surface, though not very distinctly, by a layer of fine epithelium (fig. 30).

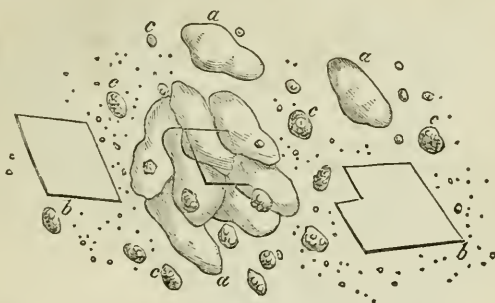
III.—The following results were obtained from the examination of another encysted tumor, which was situated in front of the right ear of a female, and was extirpated by Prof. Wilhelm.

The cyst by which the substance of the tumor was surrounded consisted of a smooth membrane, the thickness of which was about equal to that of letter-paper. When ex-

amined beneath the microscope, it was found to be made up of bundles of fibro-cellular tissue, densely woven together so as to produce a compact membrane. Several blood-vessels were also distinctly observed traversing this membrane.

On its internal surface it was lined by a layer of epithelium similar to that represented by fig. 29. The contents of the cyst were composed of a soft, grumous, very friable substance of a whitish colour. When examined beneath the microscope it was found to consist, 1st. of a large quantity of colourless oval cells (?) unprovided with nuclei; these cells formed the chief ingredient of the mass, (fig. 31, *d*); 2dly, of.

FIG. 31.



tabular crystals of cholesterine in tolerable quantity, (fig. 31, *a*); 3dly, of amorphous colourless granules of various sizes, (fig. 31, *c*). A chemical analysis of the contents of this cyst gave the following results:—

Water (with a trace of butyric acid)	. 751
Fat (cholesterine and butyrine in about equal proportions)	. 38
Alcoholic extract, with lactic acid	. 92
Watery extract	. 27
Dry cellular substance (probably with a trace of albumen)	. 92
Fixed salts	. a trace
	1,000

It would appear from the above analysis that the granules described under the third head consisted of butyrine.

IV. In the following account are contained the results of an examination of one of those curious forms of encysted tumor in which hairs are found growing from the internal surface of the cyst. The tumor in this case was about the size of a hazel-nut; it was extracted by Professor Wilhelm from the outer margin of the orbit: the subject was a girl eighteen years of age. The cyst surrounding the substance of the tumor was not thicker than ordinary letter-paper. The substance of the tumor itself, or contents of the cyst, formed a whitish yellow mass of

a thick pulpy consistence, somewhat resembling boiled groats. Also found in the substance of this tumor were numerous hairs from two to four lines in length, which were observed growing from, or, at least, attached to, the internal surface of the cyst.

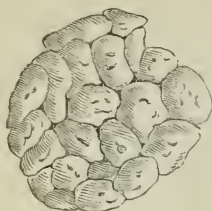
When these various parts were examined beneath the microscope, the following results were obtained:—

1. The cyst was found to be composed of fibro-cellular tissue, woven into a firm membrane. It appeared to have an epithelial coat on its internal surface, but this was not clearly made out.

2. The hairs, which were firmly attached to the internal surface of the cyst, were perfectly white. When plucked out, each exhibited a bulb or knob at its root; between this bulbous part and the commencement of the shaft, each hair was very narrow, but it dilated again to form the shaft, and continued of the same uniform width up to its free extremity, where it terminated in a fine point. Each hair had a medullary canal running through its centre, containing a brownish matter: it commenced near the root, and was continued about half way up the shaft of the hair, where it terminated. The diameter of the root of each hair was about $\frac{1}{13}$ of a line, that of the shaft about $\frac{1}{18}$, and towards its point about $\frac{1}{50}$: the diameter of the medullary canal was about $\frac{1}{80}$ of a line.

3. The thick pulpy substance, forming the contents of the cyst, was composed (exclusive of the hairs) entirely of colourless cells filled with fat, and packed closely together, resembling in all respects ordinary fat-cells (fig. 32). Scattered between these

FIG. 32.



cells there was observed here and there a small quantity of a finely-granular substance; also a few large crystals of cholesterine. There were no traces of blood-vessels between the fat-cells.

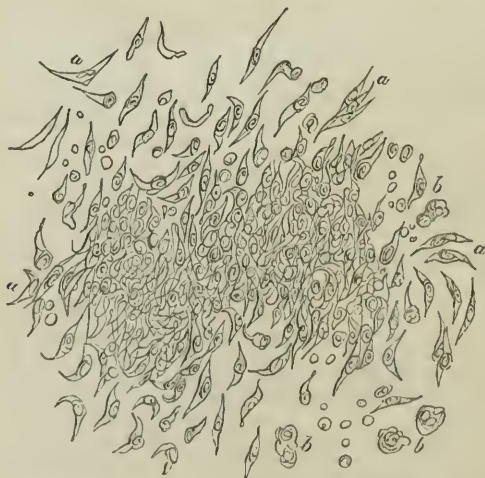
V.—In the following case the encysted tumor presented characters somewhat different to those of the four cases just described. The tumor was situated in the subcutaneous cellular tissue close to the sternum; it occurred in a female, and upon extirpation

was found to be about the size of a small cherry, of a roundish form, and to be enclosed within a thin yet distinct cyst.

The contents of the tumor were of a soft almost pulpy appearance, and of a yellowish-white colour. When examined beneath the microscope they were found to be made up entirely of an immense number of very pale caudate cells, with distinct nuclei, and nucleolus-corpuscles or nucleoli (fig. 33). In no part could there be discovered either any crystals of cholesterine, or any of those large pale cells without nuclei, both of which were met with in the contents of three out of the four cysts described above; and in all four were found the crystals of cholesterine. Upon the addition of acetic acid, the contents of this cyst were reduced to an irregular filamento-amorphous mass (resembling coagulated mucus) within which the cells were enclosed. The cyst of the tumor was composed of bundles of fibro-cellular tissue intimately woven together. In some places on its internal surface were observed a few indistinct traces of an epithelial lining.

Fig. 33, *a*, *a**, illustrates the characters of the caudate cells above described; at *b*, *b*, are figured the cells which were supposed to belong to an epithelial layer lining the internal surface of the cyst.

FIG. 33.



Fatty Tumors.

I.—The case from which the tumors furnishing the following description were taken was a woman, about 40 years of age, who had several tumors about her head and neck. She had been operated on several times, and these tumors removed, but they constantly formed themselves again. In September 1839, she entered the hospital at Erlang for

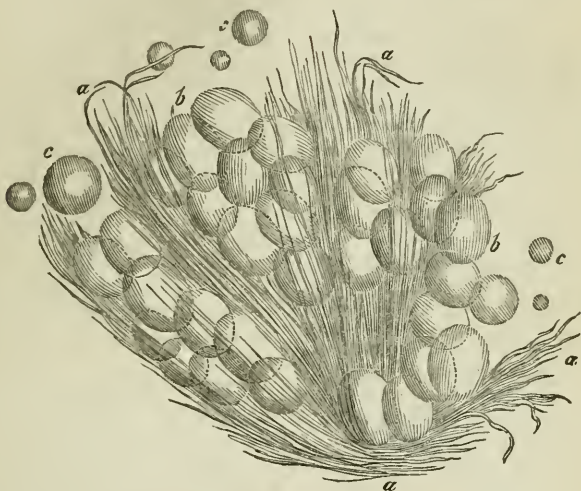
the purpose of being again operated on. At this period there were several tumors about her head and neck. There was one situated on the right side of the nose, extending from the root of this organ to the lower edge of the right ala, and so firmly attached to the subjacent bones that in performing

* Magnified 220 diams.

the operation it was necessary to remove the nasal bone and the nasal process of the superior maxillary along with the tumor. There was another tumor seated at about the middle of the lower border of the inferior maxillary bone on the right side; it was in close connection with an artery and vein, so that it was necessary to tie the former in removing the tumor. There was a third tumor situated in the middle line of the neck, about midway between the lower jaw

and the larynx. Each of these tumors when extirpated, was found to be about the size of a small apple; they were irregularly spherical and lobulated, had a lardaceous consistence, and were each enclosed by a thin cyst or capsule. These tumors resembled each other exactly as regards their histological characters; they were each composed of fibres identical with those of ordinary fibro-cellular tissue (fig. 34, *a*), and of fat-cells (*b*), which corresponded

FIG. 34.



exactly with those observed in common adipose tissue. Although there were no blood-vessels distinctly observed, yet they were undoubtedly present, though few in number, as is usually the case in adipose tissue; the fact of their being so very indistinct in the present case is explained by the great loss of blood attendant on the necessarily prolonged operation, whereby these vessels would be almost completely drained of their contents. On the specimens examined beneath the microscope there were observed several drops of oil (*c*), which doubtless had been squeezed out of the fat-cells by the pressure of the glass placed over the object. These several elements of each of the tumors were disposed in the following order: the fibres (partly separate, partly arranged together in undulated fasciculi, as observed in ordinary fibro-cellular tissue) formed the groundwork of the substance of the tumor, whilst between these fibres the fat-cells were deposited. The arrangement of the fibrous fasciculi followed no regular order; they were observed crossing each other in all possible directions. Where the substance of the tumors was most firm and dense there the fibres especially prevailed; where, on the other hand, the texture was soft and adipose, there the fat-cells were most abun-

dant. In these latter parts, where the fat was most prevalent, the fat-cells were arranged in regular order, as is observed to be the case with the cells of plants. At the parts where the tumors encroached upon the bone, the fat-cells were observed to be in contact with the osseous substance, which itself, however, was quite unaltered. The enclosing cyst or capsule was thin, fibrous, and made up of densely interwoven bundles of fibro-cellular tissue, crossing each other in all directions; it thus exactly resembled the structure of the membrane described above as forming the cyst of a real encysted tumor.

SOLUTION OF POTASSIO-TARTRATE OF ANTIMONY AS A COUNTER-IRRITANT.

MR. J. DUNCAN MACDIARMID recommends the use of a solution of (say gr. x. of the tartrate of antimony to ʒj. of distilled water), as a counter-irritant application, in place of the tartar emetic ointments of the Pharmacopœias, which are usually employed. He was led to employ it some time since by the consideration that the ointment is disagreeable to many (particularly female patients), and the medicine in this form is not in the best possible condition for absorption.—*Montreal Medical Gazette.*

Original Communications.

ON THE

LIQUEFACTION AND SOLIDIFICATION OF BODIES GENERALLY EXISTING AS GASES.

BY MICHAEL FARADAY, Esq. D.C.L.

F.R.S. &c. &c.

[Continued from p. 451.]

Olefiant gas.—This gas condensed into a clear, colourless, transparent fluid, but did not become solid even in the carbonic acid bath *in vacuo*; whether this was because the temperature was not low enough, or for other reasons referred to in the account of euchlorine, is uncertain.

The pressure of the vapour of this substance at the temperature of the carbonic acid bath in air (-103° Fahr.) appeared singularly uncertain, being on different occasions, and with different specimens, 3·7, 8·7, 5 and 6 atmospheres. The table below shows the tension of vapour for certain degrees below 0° Fahr., with two different specimens obtained at different times, and it will illustrate this point.

Fahr.	Atmospheres.	Atmospheres.
— 100 . .	4·60 . .	9·30
— 90 . .	5·68 . .	10·26
— 80 . .	6·92 . .	11·33
— 70 . .	8·32 . .	12·52
— 60 . .	9·88 . .	13·86
— 50 . .	11·72 . .	15·36
— 40 . .	13·94 . .	17·05
— 30 . .	16·56 . .	18·98
— 20 . .	19·58 . .	21·23
— 10 . .		23·89
0		27·18
10		31·70
20		36·80
30		42·50

I have not yet resolved this irregularity, but believe there are two or more substances, physically, and perhaps occasionally chemically different, in olefiant gas; and varying in proportion with the circumstances of heat, proportions of ingredients, &c. attending the preparation.

The fluid affected the resin of the gauge graduation, and probably also the resin of the cap cement, though slowly.

Hydriodic Acid.—This substance was prepared from the iodide of phosphorus by heating it with a very little

water. It is easily condensable by the temperature of a carbonic acid bath: it was redistilled, and thus obtained perfectly pure.

The acid may be obtained either in the solid or liquid, or (of course) in the gaseous state. As a solid it is perfectly clear, transparent, and colourless; having fissures or cracks in it resembling those that run through ice. Its solidifying temperature is nearly -60° Fahr., and then its vapour has not the pressure of one atmosphere; at a point a little higher it becomes a clear liquid, and this point is close upon that which corresponds to a vaporous pressure of one atmosphere. The acid dissolves the cap cement and the bitumen of the gauge graduation; and appears also to dissolve and act on fat, for it leaked by the plug of the stop-cock with remarkable facility. It acts on the brass of the apparatus, and also on the mercury in the gauge. Hence the following results as to pressures and temperatures are not to be considered more than approximations:—

At 0° Fahr. pressure was 2·9 atmospheres.

At 32° Fahr. pressure was 3·97 atmospheres.

At 60° Fahr. pressure was 5·86 atmospheres.

Hydrobromic Acid.—This acid was prepared by adding to perbromide of phosphorus* about one-third of its bulk of water in a proper distillatory apparatus formed of glass tube, and then applying heat to distil off the gaseous acid. This being sent into a very cold receiver, was condensed into a liquid, which being rectified by a second distillation, was then experimented with.

Hydrobromic acid condenses into a clear colourless liquid at 100° below 0° , or lower, and has not the pressure of one atmosphere at the temperature of the carbonic acid bath in air. It soon obstruct and renders the motion of the mercury in the air-gauge irregular, so that I did not obtain a measure of its elastic force; but it is less than that of muriatic acid. At and below the temperature of -124° Fahr. it is a

* The bromides of phosphorus are easily made without risk of explosion. If a glass tube be bent so as to have two depressions, phosphorus placed in one and bromine in the other; then by inclining the tube, the vapour of bromine can be made to flow gradually on to, and combine with, the phosphorus. The fluid protobromide is first formed, and this is afterwards converted into solid perbromide. The excess of bromine may be dissipated by the careful application of heat.

solid, transparent, crystalline body. It does not freeze until reduced much lower than this temperature; but being frozen by the carbonic acid bath *in vacuo*, it remains a solid until the temperature in rising attains to -124° .

Fluosilicon.—I found that this substance in the gaseous state might be brought in contact with the oil and metal of the pumps, without causing injury to them, for a time sufficiently long to apply the joint process of condensation already described. The substance liquefied under a pressure of about nine atmospheres at the lowest temperature, or at 160° below 0° ; and was then clear, transparent, colourless, and very fluid like hot ether. It did not solidify at any temperature to which I could submit it. I was able to preserve it in the tube until the next day. Some leakage had then taken place (for it ultimately acted on the lubricating fat of the stop-cock), and there was no liquid in the tube at common temperatures; but when the bend of the tube was cooled to 32° by a little ice, fluid appeared: a bath of ice and salt caused a still more abundant condensation. The pressure appeared then to be above thirty atmospheres, but the motion of the mercury in the gauge had become obstructed through the action of the fluosilicon, and no confidence could be reposed in its indications.

Phosphuretted Hydrogen.—This gas was prepared by boiling phosphorus in a strong pure solution of caustic potassa, and the gas was preserved over water in a dark room for several days to cause the deposition of any mere vapour of phosphorus which it might contain. It was then subjected to high pressure in a tube cooled by a carbonic acid bath, which had itself been cooled under the receiver of the air-pump. The gas in its way to the pumps passed through a long spiral of thin narrow glass tube immersed in a mixture of ice and salt at 0° , to remove as much water from it as possible.

By these means the phosphuretted hydrogen was liquefied; for a pure, clear, colourless, transparent and very limpid fluid appeared, which could not be solidified by any temperature applied, and which when the pressure was taken off immediately rose again in the form of gas. Still the whole of the gas was not condensable into this

fluid. By working the pumps the pressure would rise up to twenty-five atmospheres at this very low temperature, and yet at the pressure of two or three atmospheres and the same temperature, liquid would remain. There can be no doubt that phosphuretted hydrogen condensed, but neither can there be any doubt that some other gas, not so condensable, was also present, which perhaps may be either another phosphuretted hydrogen or hydrogen itself.

Fluoboron.—This substance was prepared from fluor spar, fused boracic acid and strong sulphuric acid, in a tube generator such as that already described, and conducted into a condensing tube under the generating pressure. The ordinary carbonic acid bath did not condense it, but the application of one cooled under the air-pump caused its liquefaction, and fluoboron then appeared as a very limpid, colourless, clear fluid, showing no signs of solidification, but when at the lowest temperature mobile as hot ether. When the pressure was taken off, or the temperature raised, it returned into the state of gas.

The following are some results of pressure, all that I could obtain with the liquid in my possession; for, as the liquid is light and the gas heavy, the former rapidly disappears in producing the latter. They make no pretensions to accuracy, and are given only for general information.

Fahr.		Atmospheres.
— 100		4.61
— 82		7.5
— 72		9.23
— 66		10.00
— 62		11.54

The preceding are, as far as I am aware, new results of the liquefaction and solidification of gases. I will now briefly add such other information respecting solidification, pressure, &c., as I have obtained with gaseous bodies previously condensed. As to pressure, considerable irregularity often occurred, which I cannot always refer to its true cause; sometimes a little of the compressed gas would creep by the mercury in the gauge, and increase the volume of inclosed air; and this varied with different substances, probably by some tendency which the glass had to favour the condensation.

one (by something analogous to hygrometric action) more than another. But even when the mercury returned to its place in the gauge, there were anomalies which seemed to imply, that a substance, supposed to be one, might be a mixture of two or more. It is, of course, essential that the gauge be preserved at the same temperature throughout the observations.

Muriatic Acid.—This substance did not freeze at the lowest temperature to which I could attain. Liquid muriatic acid dissolves bitumen; the solution, liberated from pressure, boils, giving off muriatic acid vapour, and the bitumen is left in a solid frothy state, and probably altered, in some degree, chemically. The acid unites with and softens the resinous cement, but leaves it when the pressure is diminished. The following are certain pressures and temperatures which, I believe, are not very far from truth; the marked numbers are from experiment.

Fahr.	Atmospheres.
100	1.80
92	2.28
90	2.38
83	2.90
80	3.12
77	3.37
70	4.02
67	4.26
60	5.08
53	5.83
50	6.30
42	7.40
40	7.68
33	8.53
30	9.22
22	10.66
20	10.92
10	12.82
5	13.88
0	15.04
10	17.74
20	21.09
25	23.08
30	25.32
32	26.20
40	30.67

The result formerly obtained* was forty atmospheres at the temperature of 50° Fahr.

Sulphurous Acid.—When liquid, it dissolves bitumen. It becomes a crystalline, transparent, colourless, solid body, at —105° Fahr.; when

partly frozen the crystals are well-formed. The solid sulphurous acid is heavier than the liquid, and sinks freely in it. The following is a table of pressures in atmospheres of 30 inches mercury, of which the marked results are from many observations; the others are interpolated. They differ considerably from the results obtained by Bunsen*, but agree with my first and only result.

Fahr.	Atmospheres.
0	0.725
10	0.92
14	1.00
19	1.12
23	1.23
26	1.33
31.5	1.50
32	1.53
33	1.57
40	1.78
46.5	2.00
48	2.06
56	2.42
58	2.50
64	2.76
68	3.00
73.5	3.28
76.8	3.50
85	4.00
90	4.35
93	4.50
98	5.00
100	5.16
104	5.50
110	6.00

Sulphuretted Hydrogen.—This substance solidifies at 122° Fahr. below 0°, and is then a white crystalline translucent substance, not remaining clear and transparent in the solid state like water, carbonic acid, nitrous oxide, &c., but forming a mass of confused crystals like common salt or nitrate of ammonia, solidified from the melted state. As it fuses at temperatures above —122°, the solid part sinks freely in the fluid, indicating that it is considerably heavier. At this temperature the pressure of its vapour is less than one atmosphere, not more, probably, than 0.8 of an atmosphere, so that the liquid allowed to evaporate in the air would not solidify as carbonic acid does.

The following is a table of the tension of its vapour, the marked numbers being close to experimental results, and the rest interpolated. The

* Philosophical Transactions, 1823, p. 198.

* Bibliothèque Universelle, 1839, xxiii. p. 185.

curve resulting from these numbers, though coming out nearly identical in different series of experiments, is apparently so different in its character from that of water or carbonic acid, as to leave doubts on my mind respecting it, or else of the identity of every portion of the fluid obtained, yet the crystallization and other characters of the latter seemed to show that it was a pure substance.

	Fahr.	Atmospheres.
—	100	1.02
✓	94	1.09
✓	90	1.15
✓	83	1.27
✓	80	1.33
✓	74	1.50
✓	70	1.59
✓	68	1.67
✓	60	1.93
✓	58	2.00
✓	50	2.35
✓	45	2.59
✓	40	2.86
✓	30	3.49
✓	24	3.95
✓	20	4.24
✓	16	4.60
✓	10	5.11
✓	2	5.90
✓	0	6.10
	10	7.21
	20	8.44
	26	9.36
✓	30	9.94
	40	11.84
	48	13.70
✓	50	14.14
	52	14.60

Carbonic Acid.—The solidification of carbonic acid by M. Thilorier is one of the most beautiful experimental results of modern times. He obtained the substance, as is well known, in the form of a concrete white mass like fine snow, aggregated. When it is melted and solidified by a bath of low temperature, it then appears as a clear, transparent, crystalline, colourless body, like ice; so clear, indeed, that at times it was doubtful to the eye whether anything was in the tube, yet at the same time the part was filled with solid carbonic acid. It melts at the temperature of -70° or -72° Fahr., and the solid carbonic acid is heavier than the fluid bathing it. The solid or liquid carbonic acid at this temperature has a pressure of 5.33 atmospheres nearly. Hence it is easy to understand the readiness with which

liquid carbonic acid, when allowed to escape into the air, exerting only a pressure of one atmosphere, freezes a part of itself by the evaporation of another part.

Thilorier gives -100° C. or 143° Fahr. as the temperature at which carbonic acid becomes solid. This however is rather the temperature to which solid carbonic acid can sink by further evaporation in the air, and is a temperature belonging to a pressure not only lower than that of 5.33 atmospheres, but even much below that of one atmosphere. This cooling effect to temperatures below the boiling point often appears. A bath of carbonic acid and ether exposed to the air will cool a tube containing condensed solid carbonic acid, until the pressure within the tube is less than one atmosphere; yet, if the same bath be covered up so as to have the pressure of one atmosphere of carbonic acid vapour over it, then the temperature is such as to produce a pressure of 2.5 atmospheres by the vapour of the solid carbonic acid within the tube.

The estimates of the pressure of carbonic acid vapour are sadly at variance; thus, Thilorier* says it has a pressure of 26 atmospheres at -4° Fahr., whilst Addams† says that for that pressure it requires a temperature of 30° . Addams gives the pressure about $27\frac{1}{2}$ atmospheres, at 30° , but Thilorier and myself‡ give it as 36 atmospheres at the same temperature. At 50° Brunel§ estimates the pressure as 60 atmospheres, whilst Addams makes it only 34.67 atmospheres. At 86° Thilorier finds the pressure to be 73 atmospheres; at 4° more, or 90° , Brunel makes it 120 atmospheres; and at 10° more, or 100° , Addams makes it less than Thilorier at 86° , and only 62.32 atmospheres; even at 150° the pressure with him is not quite 100 atmospheres.

I am inclined to think that at about 90° Cagniard de la Tour's state comes on with carbonic acid. From Thilorier's data we may obtain the specific gravity of the liquid and the vapour over it at the temperature of 86° Fahr., and the former is little more than twice that of the latter; hence a few degrees more of temperature would

* Annales de Chimie, 1835, ix. 427, 432.

† Report of British Association, 1838, p. 70.

‡ Philosophical Transactions, 1823, p. 193.

§ Royal Institution Journal, xxi. 132.

bring them together, and Brunel's result seems to imply that the state was then on, but in that case Addams's results could only be accounted for by supposing that there was a deficiency of carbonic acid. The following are the pressures which I have recently obtained:—

Fahr.	Atmospheres.
111	1.14
110	1.17
107	1.36
100	1.85
95	2.28
90	2.77
83	3.60
80	3.93
75	4.60
70	5.33
60	6.97
56	7.70
50	8.88
40	11.07
34	12.50
30	13.54
23	15.45
20	16.30
15	17.80
10	19.38
4	21.48
0	22.84
5	24.75
10	26.82
15	29.09
20	30.65
23	33.15
30	37.19
32	38.50

Carbonic acid is remarkable amongst bodies for the high tension of the vapour which it gives off whilst in the solid or glacial state. There is no other substance which at all comes near it in this respect, and it causes an inversion of what in all other cases is the natural order of events. Thus, if, as in the case with water, ether, mercury, or any other fluid, that temperature at which carbonic acid gives off vapour equal in elastic force to one atmosphere, be called its boiling-point; or, if (to produce the actual effect of ebullition) the carbonic acid be plunged below the surface of alcohol or ether, then we shall perceive that the freezing and boiling-points are inverted, *i. e.* that the freezing point is the hotter, and the boiling-point the colder of the two, the latter being about 50° below the former.

Euchlorine.—This substance was easily converted from the gaseous state

into a solid crystalline body, which, by a little increase of temperature, melted into an orange-red fluid, and by diminution of temperature again congealed; the solid euchlorine had the colour and general appearance of bichromate of potassa; it was moderately hard, brittle, and translucent; and the crystals were perfectly clear. It melted at the temperature of 75° below 0° , and the solid portion was heavier than the liquid.

When in the solid state it gives off so little vapour that the eye is not sensible of its presence by any degree of colour in the air over it when looking down a tube four inches in length, at the bottom of which is the substance. Hence the pressure of its vapour at that temperature must be very small.

Some hours after, wishing to solidify the same portion of euchlorine which was then in a liquid state, I placed the tube in a bath at -110° , but could not succeed either by continuance of the tube in the bath, or shaking the fluid in the tube, or opening the tube to allow the full pressure of the atmosphere; but when the liquid euchlorine was touched by a platinum wire it instantly became solid, and exhibited all the properties before described. There are many similar instances amongst ordinary substances, but the effect in this case makes me hesitate in concluding that all the gases which as yet have refused to solidify at temperatures as low as 166° below 0° , cannot acquire the solid state at such a temperature.

[To be continued.]

INSANITY FROM PARTURITION.

To show how frequently insanity supervenes on parturition, it may be remarked that in ten years, eighty patients were admitted (into Bethlem) whose disorder shortly followed the puerperal state. Women affected from this cause recover in a larger proportion than patients of any other description of the same age. Of these eighty, fifty have perfectly recovered. The first symptoms of the approach of this disease after delivery are want of sleep: the countenance becomes flushed; a constrictive pain is often felt in the head; the eyes assume a morbid lustre, and wildly glance at objects in rapid succession; the milk is afterwards secreted in less quantity, and when the mind becomes more violently disordered, it is totally suppressed. Where the disease is hereditary, parturition very frequently becomes an exciting cause." —*Hastam.*

CASE OF
UNREDUCED DISLOCATION OF
THE HUMERUS.

By BENJAMIN TRAVERS, JUN. ESQ.
Assistant-Surgeon to St. Thomas's Hospital,
&c. &c. &c.

J. P., æt. 27, short in stature, but powerfully made, was thrown from a gig with violence, on the evening of the 11th January, 1845. On partially recovering from the shock, he found that he had lost the power of moving the right arm, and could not bring it to his side. When first seen by Mr. Symes, his pulse was feeble, his face pale; he was very sick, and bleeding from some superficial cuts in the face. On examining the shoulder, Mr. S. immediately detected a dislocation forwards under the pectoral muscle. The head of the bone followed the motions of the limb when rotated, the arm was shortened, and the elbow projected considerably from the side. The head of the bone was immediately replaced without difficulty, returning to its socket with an audible snap. The arm was bound to the side, and the patient ordered to bed. Within a few hours, so much pain and swelling had supervened as to justify a large application of leeches (xxiv.), evaporating lotion, and a brisk purgative. More leeches were applied the next day, in consequence of great pain, swelling, and discolouration, extending to the elbow. Mr. Symes visited his patient daily up to the 22d inst. Up to this date the case progressed favourably, and the joint maintained its natural figure.

Feb. 6th.—The patient came to Mr. Symes, and complained that he was much worse; he was now unable to raise his arm, and had great numbness in the fingers. He admitted that he had been using the limb with freedom for some days, contrary to the orders of his surgeon. Mr. Symes must here speak for himself. "Mr. Poole, a professional friend, who had seen the case within a few days of the original reduction, and when the configuration of the joint was maintained, happened to be present at this time. We at once saw that the arm was again displaced, and found the head of the humerus low down in the axilla." Suffice it, that repeated, long continued, but unavailing attempts at reduction were now

made by Mr. Symes, also by Mr. Standert, a surgeon of great eminence at Taunton, who saw the case twice, and by whose advice Mr. Symes brought his patient to London, on Feb. 17th.

The parties first called upon Mr. Travers, in Bruton Street, who regarded the case as one of dislocation; although he did not think the head of the bone clearly defined. Mr. T. made extension upon the part for some time by means of the heel in the axilla, but without any result. Mr. P. was seen subsequently in this hospital by all the surgeons of the institution. Every one regarded the case as one of simple unreduced dislocation at that time. My colleague, Mr. Clark, alone hesitated; he also thought the head of the bone not very well defined, and the parts thickened. This opinion not being generally entertained, a fresh attempt at reduction was determined on. In the first instance, an apparatus, lately brought from America, by Dr. Jarvis, and adjusted by that gentleman in person, was tried without effect, although the force employed was very great, and produced much local distress. Three or four days were now suffered to elapse, when, on the 22d of February, Mr. P. was again submitted to operation. First, to the action of the compound pullies, without effect. Secondly, to firm extension upon the heel, alternated with brisk and powerful rotation of the limb.

After the lapse of nearly four hours, and a general and complete muscular exhaustion, produced by the action of tartar-emetic, the limb being rotated at the moment, the knee of the operator in the axilla, and the patient in the sitting posture, a sudden and very palpable shifting of the head of the bone took place, together with an audible attrition of dry, smooth, and unyielding surfaces. The configuration of the joint was at once restored, and my colleague, Mr. Macmurdo, together with myself, and the gentlemen present, were satisfied that the head of the bone had at length been replaced, and the complete reduction of the limb effected. The parts were now firmly padded and bandaged, it being manifest that no dependence could be placed upon the strained and exhausted tissues towards the retention of the bone in its now changed and natural position. Some slight inflam-

matory swelling followed, but this and the concomitant pain were never serious. The patient was confined strictly to bed, where he lay constantly on his back, with his chest raised, and well supported.

The reduction was effected on Saturday; by the middle of the next week, in spite of every precaution, the head of the bone had manifestly sunk, and was slowly relapsing to its former anormal position.

At the expiration of a fortnight, or in the course of the third week, the bandage was removed, a sling applied, and passive motion instituted for obvious reasons. By that time the limb had nearly acquired the relation to surrounding parts, which it now occupies permanently.

The head of the bone is lying beneath the pectoralis major muscle, its summit being more or less in contact with the coracoid process. There is now an effusion of callus, or bony matter, on the side of the axilla, prolonged to a spiculum, which projects over the bicipital fossa. The limb is capable of considerable rotatory and flexor motion, but in a very slight degree, if at all, independently of the scapula. Mr. P. is slowly regaining prehensile power, and hereafter the member will for ordinary purposes probably be as useful, though not so symmetrical, as it was before the accident.

REMARKS.—The foregoing case is worthy of record, not so much for its novelty, as for the practical truth it teaches. Our great writers, our journals, also the shelves of our museums, bear testimony to the infinite variety of injuries occurring to the shoulder-joint; and its healthy anatomy readily explains why dislocation should often produce so much supplementary mischief as renders permanent reduction impracticable. The several distinguishing signs of fracture and dislocation are easily rehearsed, but cases like the present every now and then occur, where, with all these primary signs apparently well marked, we subsequently arrive at the conclusion that the original injury was of a complicated kind. The moral of this history seems to be, that, if after complete reduction, and accurate bandaging, the head of the bone can not be kept in its place; if acute pain, and other signs of

excessive injury occur primarily, where no undue force has been employed to restore the limb; we must be careful not uselessly to persist in our attempts at reduction, notwithstanding the manifest displacement, the risk of deformity, and imperfect motion. These are cases in which some one or other of those particular lesions are present which have been recorded on several occasions with great accuracy; and I may refer your readers to papers in the 3d and 14th Vols. of the GAZETTE, by Mr. Stanley and Mr. Gregory Smith; also to one by Mr. Soden, jun. in the 24th volume of the Med. Chir. Trans., for further information on this head. The works of Desault, and the *Léçons Orales* of Dupuytren, may also be consulted with advantage.

Whether in this particular instance the tendon of the biceps was dislocated, or otherwise injured, the tendon of the supra-spinatus detached along with that portion of the great tubercle to which it is fixed, or whether the capsular ligament and tendon of the subscapularis muscle had sustained excessive injury, it is of course very difficult to determine. The restoration, at least, was beyond our art. These cases are strikingly contrasted on the one hand with the broken cervix humeri, on the other with the simple dislocation of this joint, which on one occasion was reduced by Mr. Travers, in the theatre of this hospital, in the person of a ship's captain, so late as sixteen weeks from the date of the accident, with perfect success. The situation and character of the callus, also the time of its appearance, corresponds accurately with the operations of nature whilst forming a new joint; but the bony projection felt in the situation of the bicipital fossa, would seem to justify the belief that the processes had not wholly escaped injury. There is a specimen of unreduced dislocation in the College Collection, highly corroborative of this suspicion, where a piece of the greater tubercle has re-united with slight displacement, and where the same kind of spiculated deposit subtends, or covers in, the bicipital groove.

CEMENT FOR JOINING BRASS STOP-COCKS TO RETORTS AND OTHER GLASS APPARATUS.

FIVE parts of resin, one part of yellow bees' wax, and one part of red ochre, by weight, melted together, and well mixed.—*Faraday.*

OBSERVATIONS ON THE
CHEMICAL ANALYSIS AND NATURE
OF SOME OF THE CONSTITUENTS
OF THE BLOOD.

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[Continued from page 187.]

Analysis of the Blood.

1. THE earliest method used, which is worthy of consideration, is that of MM. Prevost and Dumas*. This was performed in the same manner, or nearly so, as will be detailed in "Andral and Gavarret's process."

2. Lecanu† adopted three processes, sometimes that of MM. Prevost and Dumas, or M. Denis, at others one of his own, in which the fresh blood was at once mixed with alcohol, whereby the fibrine, albumen, and globules were thrown down, and the extractives and some salts dissolved. I shall not pursue this process, as it is certainly a bad one, but refer to his original paper for its details‡.

3. Berzelius§ recommends the following: two portions of the same blood are weighed, one of which is allowed to coagulate spontaneously, the other is thoroughly dried in the water-bath, and the residue weighed. The loss consists of the water of the blood. When the clot of the first portion is perfectly formed, it is carefully removed, cut up into slices with a sharp knife if large and thick, otherwise this is unnecessary. It is then placed upon an open weighed filter, composed of several pieces of blotting-paper kept in situ by a weight. The serum is absorbed from the clot by the paper, which must be frequently changed, the weighed filters being always preserved. After proceeding thus, and constantly applying pressure when the clot yields no more fluid to the paper, the serum is pressed out as strongly as possible, and the clot dried in vacuo over sulphuric acid, between the adhering weighed pieces of filtering paper; it is then weighed in a covered vessel to prevent the absorption of moisture from the air.

If the weight of the filtering-paper

be subtracted from that of the dried clot, the weight of the fibrine and globules is ascertained. The latter is then treated with water at 77°–86° F., which must be frequently changed, and the residuary fibrine, when it ceases to colour water, is dried and weighed. In this manner we learn the relative quantities of fibrine and corpuscles, the latter being obtained from the water used for washing. The dried and weighed blood is then successively treated with ether, alcohol, and boiling water. The exhausted residue, when well dried, yields the whole of the albuminous constituents. If the weight of the fibrine and globules be subtracted from it, that of the albumen remains. The ethereal solution contains the fat; the alcoholic and aqueous solutions contain the salts and extractives.

4. Simon's method is this: *a.* two, three, or at most four ounces of blood, whilst flowing from a vein, are caught in a thin beaker-glass, and gently stirred with a glass rod* until the fibrine has separated. When perfectly cold, the glass vessel containing the blood and rod is weighed; the blood is then poured out of the glass, which is washed and dried; the rod is next separated from the adherent fibrine, washed and dried; the glass and rod are now weighed, and the weight of the blood taken is estimated.

B. The fibrine is removed from the blood; should any have separated in the form of flakes, this must be collected, pressed, and immersed in water; the water, if highly coloured, is poured off and changed until the fibrine is colourless, for which 18 or 20 hours are sufficient. The colourless fibrine is dried, carefully bruised, finally pulverized in the evaporating dish, and retained at a temperature of 230° F. until it ceases to lose weight. It is then weighed; after which it is powdered as finely as possible, and as much of it as can be collected is weighed into a small flask; it is then heated first with a little anhydrous alcohol, ether is next added, and, by pouring this off once or twice, and adding fresh, the fat is perfectly removed: on evaporating the ethereal solution to dryness the fat

* Ann. de Chimie et de Physiq. t. 23.

† Recherches Exper. sur le Sang.

‡ Journ. de Pharm. t. 17.

§ Lehrbuch der Chemie, vol. ix.

* Simon used a "quirl" for this purpose, but a glass rod answers equally well, and the fibrine can be much more readily and perfectly separated from it.

remains. Thus, the amount of fibrine and its fat are ascertained; the quantity of these for the whole weight of blood used is then calculated.

γ. 30 or 40 grains of the well-mixed cruor are now boiled over an open lamp to coagulate the albumen, then evaporated to dryness in a water-bath, being frequently triturated with a small pestle; they are next rubbed to as fine a powder as possible, and finally heated to 230° in a chloride of zinc bath, and weighed: the loss indicates the quantity of water.

δ. From 7 to 9 drachms of the well-mixed blood are now boiled over an open lamp to coagulate the whole of the albumen perfectly; the water is then driven off in a water-bath. As soon as the blood has become so dry as to allow of its being rubbed with difficulty to a semi-pulverulent mass, it must be carefully triturated in a mortar, being again heated after each trituration. All the membranous pieces which are pulverisable with difficulty, and, on further drying, become gelatinous, tenacious, and finally brittle, must be carefully separated. If the powdered blood is properly prepared, it should be soft, and of a bright red colour, and when struck with the pestle, no dark shining particles should be visible. If it is black, or of a bad colour, brittle, or contains tenacious pieces, and such as are difficult of pulverization, it is unfit for experiment.

ε. The fine soft powder is now to be dried and constantly rubbed with a pestle until it forms a dust; 7, 10, or at most 15 grains of it, are then to be weighed into a small flask for further examination. If it is considered that the powder is not sufficiently dry, a small quantity (about 7 grains) of it may be heated for a short time to 230°, the loss, if any, ascertained, and that for the powdered blood weighed into the retort for further examination calculated. It is now heated with anhydrous alcohol, ether is then added, and it is again heated to boiling to dissolve the fat as completely as possible.

When the powder has subsided, the clear ether is poured off, and the operation repeated twice or thrice with the boiling ether; the ethereal extracts are collected, the ether evaporated, the residuary fat heated for some time to 212°, and then weighed.

ζ. The powdered blood, free from

fat, and from which the remaining ether is expelled by evaporation, is now boiled within the same flask with spirit (sp. gr. 925° to 935°). This may be performed over a lamp, the flask being constantly shaken throughout the operation. It takes up everything but the albumen; for the salts, extractives, hæmaphœine, and hæmatoglobuline, are all soluble in boiling spirit of this specific gravity. The boiling with spirit is repeated five, six, or eight times, or as long as it becomes coloured, being poured off each time whilst hot. The albumen remains undissolved. This, when moist, should be of a greyish green; when dry, of a dirty grey colour; it then leaves, on incineration, a bright yellow residue containing mere traces of iron. It is washed out of the flask with water, the water removed by a pipette; it is then dried at 230° F. and weighed.

η. The spirituous extracts are collected in a beaker-glass; they usually deposit flakes of hæmato-globuline. The fluid is poured off these, and evaporated to dryness in a water-bath. The residue is powdered as fine as possible, then stirred with water to a uniform paste, and washed to the remaining flakes with spirit (sp. gr. 925). As much alcohol is now added as is sufficient to separate the dissolved hæmatoglobuline in flakes, which gradually subside. When the whole has been at rest from twelve to eighteen hours, all the flakes have subsided, and the supernatant fluid is yellowish and clear. It is removed with a syphon, the last portions with a pipette, and fresh spirit (·89—·9) is added by the syphon to the flakes, with which these are washed two or three times.

If the spirituous solution and that used for washing are of a bright yellow or lemon colour, they contain the salts and extractives only, coloured by hæmaphœine; but if they are of a red colour they also contain hæmato-globuline, which must be precipitated by strong alcohol. We thus have—1, the flakes, and 2, the spirituous solution to examine.

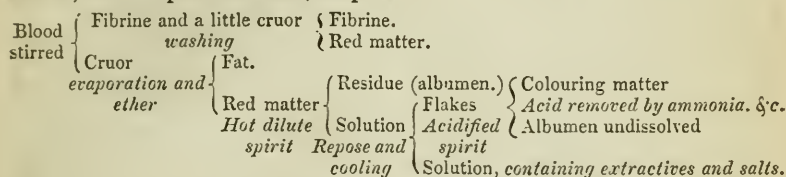
1 a. From 1 to 2 ounces of spirit (·83—·80, the stronger the better) are now poured upon the flakes; they are then well stirred up, and dilute sulphuric acid added in drops until the colour of the flakes is changed; from three to eight drops are usually suffi-

cient. The flakes are allowed completely to subside, the deep red tincture is poured off, and pure alcohol is added to the decolourized flakes as long as it becomes coloured. If the flakes appear red after the alcohol ceases to extract any colour, more acidified alcohol must be added. When they are as free as possible from hæmatine, they appear grey, or pale grey, and yield a dirty grey powder, which leaves a yellowish or orange-coloured ash.

1 *b*. The flakes are now washed with alcohol as long as it acquires an acid reaction. They are then washed from the glass, by means of the plume of a feather, into a porcelain dish, evapo-

rated to dryness in the water-bath, then heated to 230° F. and weighed. They are estimated as globuline.

1 *c*. The red tinctures are collected, and supersaturated with ammonia, so that they smell of it, set aside for some hours that the sulphate of ammonia may subside, then filtered, the sulphate washed with alcohol, and finally the alcohol evaporated. The hæmatine remains, with hæmapheine and a trace of fat, and probably some sulphate of ammonia: the latter may be extracted by water. This rather complex procedure may be better understood by reference to the following diagram:—



5. *Andral and Gavarrel's method**.—This process is nearly the same as that used by MM. Prevost and Dumas in their early experiments, except that in the latter the fibrine was procured by washing the clot, whereas in the former it is removed by stirring. The blood is caught in two equal-sized capsules, each holding nearly 5½ ounces of water by weight. In one capsule the first and last quarters of the blood are caught; this is set aside to allow of their coagulation. In the other, the second and third quarters are collected; these are immediately beaten to remove the fibrine, which is carefully washed. When the coagulation of the blood in the first capsule is complete, the serum is carefully separated from the clot and dried.

Thus we have 1, the fibrine from the beaten portion; 2, the serum; 3, the clot. The dried fibrine being weighed, the quantity in the blood used for experiment is ascertained. The serum being weighed after complete desiccation, the quantity of solids and water is estimated. Lastly, the dried clot is weighed; the quantity of water which it contained, represented by the loss in drying, enables us to calculate the amount of solids belonging to the serum which it contained; by deducting from the weight of the dried clot that of the fibrine added to that of the so-

lids of the serum which it contained, and which we have ascertained by calculation, there remains the weight of the globules which were inclosed in the clot. This series of operations, then, gives us—1. The weight of the fibrine; 2. The weight of the globules; 3. The weight of the solids of the serum; and 4. That of the water.

6. *Denis's method**.—Two portions of the blood, each about 4 oz. if possible, are caught whilst flowing. One portion is used for determining the amount of water, carbonate of soda, and chlorides of potassium and sodium. The other portion, which must be caught in a narrow vessel, is used for ascertaining the quantity of the other principles. The first portion is dried in the water bath, in a porcelain dish, until, having lost most of its water, it begins to crack here and there; it is then powdered in an agate mortar, and again heated in the water bath for half an hour more; thus the quantity of water is ascertained. By incinerating the residue, dissolving the ash in water, &c. the quantity of chlorides is ascertained. The second portion is set aside, well covered, at a temperature of 43—50° for twenty-four hours; the serum removed by a pipette; this operation is repeated every six hours, as long as there is no commencing decomposition. The serum is dried at a tem-

* Ann. de Chim. et de Phys. 1840.

* Essai sur le Sang.

perature of 122—140° F. The clot, separated as completely as possible from the serum, is placed in a fold of moderately fine linen, and washed with distilled water, until completely decolorized. M. Denis generally used about seventy times as much water as the weight of the clot; using one-tenth part at a time. Thus the fibrine is obtained. The coloured liquid is then heated in a sand bath, to 154—163° F. When the hæmatosine was coagulated, the whole was thrown on a moderately fine linen cloth, and the liquid allowed to run off. The residue was squeezed in a fold of the linen to separate the water it contained; this was added to the other liquid. The aqueous fluid was then evaporated to dryness. The hæmatosine was carefully dried. Thus four parts were obtained; 1. The dried serum; 2. The fibrine; 3. The hæmatosine containing the phosphorized fats, &c. The 4th, composed of nearly the same as the first. M. Denis subsequently dissolved out the fatty matters, extractives, &c. with alcohol; and separated the organic matters from the salts, so as to obtain the substances as pure as possible.

7. *L'iguier's method**.—This is founded on an observation made by Berzelius, that a saturated solution of sulphate of soda has no (?) action on the corpuscles, that if the mixture be filtered, the corpuscles are retained by the filter. The blood is stirred as soon as caught†, until all the fibrine has separated. It is then filtered; the fibrine is washed with water from the rod to a filter, again washed, dried, exhausted of fat by ether, and weighed. About 2½ oz. of blood freed from fibrine are now mixed with twice its volume of a solution of sulphate of soda, of 1140 or rather less, sp. gr. &c., and the mixture filtered through a simple weighed filter which has been previously moistened with the saline solution. Very few globules pass through. By dipping the filter several times into boiling water, the globules are coagulated and rendered insoluble, and the sulphate of soda is removed: the globules after being dried are weighed. The albumen is then precipitated from the filtered serum by

boiling, washed, dried at 212°, and weighed. The amount of water in the blood is ascertained by drying another portion. The soluble salts of the serum are estimated by subtracting the weight of the albumen, water, fibrine and globules, which have been directly determined, from that of the blood used.

8. Dr. Rees's process has been detailed in a late number of the *GAZETTE**.

A glance over the distribution of the components of the blood in the various analyses will enable us to see where their imperfections may be expected to lie, and subsequent tabular arrangement will serve to show how far our suppositions are correct.

M. Lecanu distinctly says he used three processes in his analyses of blood, but these are not distinguished so as to show which were done by one method and which by the others; thus we cannot compare them.

In Berzelius's process, the great objections are, the impossibility of separating the whole of the serum by any quantity of filtering paper, consequently the weight of the corpuscles will appear too high; moreover, the drying under the air-pump requires the use of an apparatus not always at the operator's command; it might, however, be replaced by a steam-bath.

Simon's method requires the use of a considerable quantity of spirit, which is generally an object in these investigations; the manipulation also requires great tact; again, the whole of the corpuscles are not soluble in alcohol, either of the sp. gr. recommended by Simon, or any other; so that a portion of the contents of the corpuscles is estimated as albumen; and further a portion of the hæmatosine is decomposed into hæmaphæine: these are two sources of error in the weight of the corpuscles, whereby their proper proportion is underrated.

Andral and Gavarret's method is, I believe, on the whole the best; it is tolerably easy; large quantities of blood may be examined, whereby errors are not likely to be so great. Undoubtedly the proportion of corpuscles appears too low, as the whole of the water driven off from the clot after coagulation does not belong to

* *Ann. de Chimie et de Phys.* Août 1844.

† The same precautions to ensure perfect admixture are used as in Andral and Gavarret's process.

* The process used by Dr. Rees will be found detailed in a recent number of the *MEDICAL GAZETTE*.

the serum; and in removing the clot a number of corpuscles not entangled in it are lost; however, the results are probably nearer the truth than those obtained by any other method; these sources of error balancing one another, or tending so to do.

By Denis's method, the whole of the serum is not separated from the clot, the amount of the former, therefore, appears too small, whilst the albumen of the serum adhering to the clot is mixed with the water used to wash the fibrine; when this is boiled the coagulated albumen is mixed with the hæmotosine, and thus the weight of the latter becomes too great. Moreover, the method of washing the corpuscles out of a clot is so tedious a process as to render it almost useless in practice; it is best replaced, as in Andral and Gavarret's method, by separating the fibrine, by stirring from another portion of blood.

In M. Figuier's method, some of the corpuscles are lost, passing through the filter; a portion of their contents is extracted by the sulphatic solution; still, according to his analysis, the weight of the corpuscles is rather above than below the standard.

Simon and Denis's methods are the only ones which determine the con-

stituents directly. It has been found that the fibrine separated by stirring from a given portion of blood is less in weight than that obtained by washing the coagulum. This does not arise from the lymph corpuscles having been washed away in the former case, and not in the latter, but probably in consequence of a portion of the fibrine being washed away, in a finely granular condition, from the coagulation being somewhat interfered with in the former case, and not in the latter.

The accompanying table shows the proportions of constituents obtained by the best analysts. They will be observed in some cases to differ more than what at first sight would appear consistent. The explanation of these differences must not, however, be sought for entirely either in the process, or in the skill of the experimenter, but in the different conditions existing as natural to the blood of individuals. There is not the slightest doubt but that the proportion of constituents of the blood varies equally as the physical development of different individuals. I may remark that the average assumed by MM. Andral and Gavarret, is probably as fair a natural proportion as possible.

	1000 PARTS.				
	Fibrine.	Water.	Corpuscles.	Albumen.	Salts.
Prevost and Dumas . . .		783·9	129·2†	86·9	
Lécanu 1		790·37	130·845†	67·804	
Do. 2		796·845	121·226†	68·610	10·6135‡
Simon	2·1	795·278	109·236	76·6	12·062‡
Andral and Gavarret . .	3	790·00	127	72‡	8
Denis	2·5	760·110	154·7	52·05	
Figuier	3·9	802·900	130·6	50·60	12·0
Rees		792	119·95†	87·85	
Thackrah§	2·8	796·55	200·1*		·55

The fat in healthy blood averages about 2 p. c. The dried globules contain about 5 p. c. of hæmotosine; and

this contains about 10 p. c. of oxide of iron.

The best method of analysing the serum is as follows: a weighed portion is evaporated to dryness, the loss indicates the quantity of water. To ensure its being perfectly dried, as much as can possibly be cleared off the capsule should be finely powdered, then again dried until it ceases to lose weight, and the loss calculated for the whole quantity.

* This includes the albumen.

† This mark denotes that the fibrine is included with the corpuscles. MM. Prevost and Dumas, Sir E. Home and Lécanu, regarded the corpuscles as having a central spheroid of fibrine, and considered that during life the hæmatine enveloped them in the form of a membranous bladder, so that in their analyses the corpuscles and fibrine are reckoned together.

‡ Including the extractives.

§ Thackrah's process was nearly the same as that of MM. Prevost and Dumas.

The powdered residue is treated with a small quantity of anhydrous alcohol, and then with ether, until it ceases to exert any further solvent action. On evaporating the ethereal solution the fat remains. The residuary ether having been expelled by a gentle heat, the powder is exhausted with hot water, which dissolves the extractives, alkaline salts, &c. leaving the albumen

and earthy salts. If these be incinerated the former is dissipated, and the latter remain.

The alkaline salts can also be separated from the extractives by incineration.

The following analyses yield fair averages of the proportion of the compounds of the serum.

Lécanu.	Berzelius.	Marcet.	
906	905.9	900	Water.
78	80.0	86.8	Albumen.
5.99	4.0	4.0	Extractives, fat and soda.
6.00	6.0	6.6	Chlorides of potassium and sodium.
2.10	4.1	2.0	Carbonate, phosphate, and sulphate of soda.
91		6	Carbonate and phosphate of lime and magnesia.

In these analyses the alkaline chlorides are separated from the carbonates, &c.; this may be effected by spirit, (not too strong) which dissolves the former, leaving the latter.

ON THE CAUSE OF THE PULSE.

By THOMAS WILLIAMS, M.B. of Swansea.

Extra Licentiate of the Royal College of Physicians; late Demonstrator on Structural Anatomy at Guy's Hospital, and Author of the Triennial Collegial Prize Essay "On the Structure and Functions of the Lungs."

I HAVE perused with considerable interest the communication contained in this week's GAZETTE, "On the Cause of the Pulse;" and willingly bear my testimony to the clear-sightedness with which the intelligent author sets forth and concatenates the successive points of his argument. But whilst I thus cheerfully render my tribute to the superior merit of his paper, I reluctantly obtrude myself upon your notice to assert a priority of authorship as respects the "theory of the pulse," which it so simply yet ably expounds. In the year 1843, the Collegiate triennial prize of fifty guineas was awarded to me by the Royal College of Surgeons for my work on the Structure and Functions of the Lungs—a work in which I have expressed views with reference to the mechanism of the arterial pulse, which correspond in every essential point with the opinions contained in the communication under review. As the original manuscript is not within my reach, I cannot, *totidem*

verbis, employ the language used in the first enunciation of these views. The manuscript work, however, will be found in the library of the College, where reference may be made to it by the members. Whilst studying the nature and extent of the influence which the capillaries of the general system, and those of the pulmonary segment, exert upon the current of the circulation, I contrived a diagram, which, at the same time, I showed to Dr. Marshall Hall and Mr. Grainger, in which it was attempted to express at one view to the eye the *alternations of outline* presented by the arterial conduits under the conditions respectively occasioned by the contraction and relaxation of the left ventricle of the heart. I may likewise state, that I have subsequently, on all occasions, taught these views to the pupils in my demonstrations and lectures at the hospital, and that the experiments which I have recently instituted in preparation for the publication of my prize work "*On the Lungs*," have uniformly added confirmation to the ideas as originally announced in the manuscript. As it is remote from my desire to provoke your intelligent correspondent to a controversial discussion of this subject, surpassingly interesting though it be, and thus oblige myself to a statement of many immatured thoughts, I will restrain myself within the limits of simply announcing the "postulates,"—the leading ideas, upon which I have for some time been conducting my inquiries in relation to

these long unresolved points in physiological science;—that, firstly, it is impossible to assign definitely a point upon the cylinder of the living pulsating aorta, as that limit to which the first wave of the pulse extends.

That, if an arterial trunk be exposed to view in the living animal, the *outline of its cylinder*, inspected in profile, does not under any circumstances present an undulating movement, like the wave-of-force travelling along a rope, but that rather the *whole divested portion* swells and collapses correspondently with the systole and diastole of the heart, and therefore with the momentary rise or flux, and succeeding ebb or reflux of the contained current—that no measurable period of time intervenes between the tightening of the most distant and that of the most proximate part of the channel—that the arterial parietes, both during the contraction and relaxation of the ventricles, are equally and uniformly in smooth contact with the liquid column of blood which they enclose—that the *slackness* favourable to an irregular or undulatory distribution of force along the arterial parietes does not therefore exist—that the established truth in hydrodynamics, that impulses traverse tightly *enclosed* liquid columns with great velocity, and with little diminution of intensity, conspires with the conditions previously recounted to render most striking and obvious the conclusion that *the pulse* consists in *one simultaneous rise* of the arterial hemisphere of the blood's circle—that the impulse communicated to the liquid-columns by the propulsive action of the left ventricle, travels almost instantaneously along the line of connected, moveable molecules, of the arterial streams.*

That the *dilatation* of the remotest as of the nearest artery to the heart, results from one common force acting *ab interno* through the medium of the liquid column, *directly upon every point of every artery*—that the impulse therefore is not transmitted along the elastic parietes; and that the progressive recoil of the distended parietes is an important contributive force in maintaining the *continuousness* of the capillary circulation.

* For a lucid exposition of the physical laws on which these positions are founded, I beg to refer to the excellent work of my talented friend, Dr. Golding Bird, on Natural Philosophy.

These are *a few of the positions*, summarily expressed, with reference to the circulation of the blood and “the cause of the pulse,” which I have long published and taught; they appear to me to explain satisfactorily the *contemporaneous* occurrence of the pulse in different parts and in the variously distributed arteries of the body. At present I refrain from entering further into the details of results, to which more recent observations have conducted; I desire only to add that I have reduced these theoretical views to experimental demonstration, by means of a system of communicating elastic caoutchouc tubes, moderately filled with water, having a syringe previously filled with water, fitted to the extremity of one of the tubes; a saltatory impulse given to the raised piston, will be transmitted by the liquid columns, with instantaneous and equal rapidity in every direction, and the *pulse* or swell will happen synchronously in every part, according to the views here propounded: under the sensitive, erudite finger of the well-informed physician, the *pulse* becomes the emissary sent forth, with telegraphic speed, *directly* from the heart, to tell the tale of its health or disease, its strength or its weakness, the regularity or irregularity of its action.

CASES OF INJURY TO THE LARYNX.

By EDWARD COCK, Esq. F.R.C.S.

Assistant Surgeon to Guy's Hospital.

THE two following cases, which have lately come under my care, the one, an injury to the larynx by boiling water, and the other, the admission of a foreign body into the trachea, may perhaps form a useful addition to the article on tracheotomy lately published in the MEDICAL GAZETTE.*

CASE I.—Lucy Deacon, æt. 5, was admitted into Esther Ward, May 11th, 7 o'clock, A. M. About an hour previously she had drawn some boiling water into her mouth from the spout of the kettle.

I was called to see her about two hours after the accident, and found her breathing with considerable effort and difficulty. The respirations were about thirty in a minute, accompanied with

a hoarse croupy sound. She was restless and feverish; the pulse accelerated. She was perfectly sensible, and readily opened her mouth for inspection, when the back of the mouth and fauces appeared to be rather severely scalded. A view of the epiglottis could not be obtained.

The distressing symptoms had set in soon after the injury, and had gradually increased in severity. Still the impediment to respiration was not sufficiently great to warrant an operation, as the partial dilatation of the chest indicated that a moderate quantity of air was received into the chest at each inspiration, and the body preserved its natural temperature; neither was there any swollen appearance, or lividity of countenance. Finding that the child could swallow without any particular difficulty, I ordered it four grains of calomel immediately, and directed that ten drops of the wine of antimony should be given every four hours, until nausea was produced. After the fourth dose she complained of sickness, and spit up a quantity of frothy mucus, with relief to her symptoms. By administering the medicine at intervals ranging from a quarter to half an hour she was kept under its influence during the whole of the day, and continued to get rid of much mucous secretion, although the contents of the stomach were never discharged by actual vomiting. Her bowels were also freely opened. When I again visited her in the evening, she was breathing more freely, and there was a decided diminution of all the symptoms of urgency and distress. I directed that the antimony should be given occasionally during the night, and allowed her some fluid nourishment.

By the next morning the child was free from any material difficulty of respiration; and although for several days she continued to suffer from the excoriated condition of the fauces, which impeded deglutition, she was well enough to leave the Hospital, May 20th.

CASE II.—Daniel Sullivan, æt. 35, was admitted into Cornelius ward, in the afternoon of April 26th.

A coal-whipper, strong and healthy, and possessed of a remarkable degree of moral courage. Just previous to his admission, two sixpences which he had in his mouth appear to have slipped through the fauces; the one was again ejected, but the other passed into the

larynx. Violent coughing, with the most distressing sense of suffocation, immediately took place, and during the paroxysm he threw up a quantity of blood. On his admission he was still struggling for breath, coughing incessantly, and suffering great pain and irritation, which he referred to the larynx, where the coin appeared to be lodged. Just previous to my arrival, however, the sixpence had left the larynx and descended into the trachea; its change of position being immediately followed by an abatement of the previous urgent symptoms. He still coughed almost incessantly, stated that he could feel the sixpence moving up and down in the windpipe, and complained of pain and soreness in the chest in the situation of the right bronchus, and also just below the larynx. He was anxious to have the foreign body removed, and offered to submit to any operation. As he was evidently still suffering from the first impression of the accident, and the temporary residence of the coin in the larynx, and as the change in its situation had already begun to reduce the severity of the symptoms, I determined to await their further subsidence, and the recovery of the larynx from its state of irritability, before taking any steps to remove the cause of mischief. He was ordered to be bled, and to take calomel, opium, and antimony, every six hours. At eleven o'clock I had the satisfaction of seeing him fast asleep, his breathing perfectly quiet and natural.

April 27th.—His symptoms of laryngeal and tracheal irritation had mainly subsided, and as long as he remained calm and quiet he complained of nothing but a feeling of general soreness along the larynx and windpipe.

When he coughed, which seldom occurred unless disturbed or excited, he experienced the same pain as before in the chest, and in the upper part of the trachea, in which latter situation he himself conceived the sixpence was lodged. His voice was perfectly natural. The stethoscope elicited nothing as to the locality of the sixpence. In order to secure the advice and assistance of my colleagues I determined to defer any further measures until the next day; but in the meantime the patient forestalled my intentions by getting rid of the foreign

body the same evening, without surgical aid. The circumstances which attended the ejection of the sixpence are best recorded in his own words. "I was asleep, and dreamed that I was drinking a pot of porter, and that the attempt to swallow it made me cough. I awoke, and found the sixpence in my mouth."

It is perhaps worthy of remark, and not destitute of practical interest, that the foreign body, which had retained its position during the most violent expiratory efforts, should at length be ejected at a period when the muscles of the glottis were probably in a state of quietude, and being taken unawares allowed its expulsion under a gentle act of coughing.

SOME OBSERVATIONS
ON THE
MEDICAL TOPOGRAPHY, CLIMATE,
AND DISEASES,
OF THE
BIGHTS OF BENIN AND BIAFRA,
WEST COAST OF AFRICA.

BY W. F. DANIELL,
Member of the Royal College of Surgeons of
England, &c.

[Concluded from p. 514.]

THE natives of the old Calabar towns, from their early intimacy with European traders, have made considerable progress in the arts of civilization, and since the abolition of the slave trade are gradually becoming a people of superior intelligence. Perhaps there could not be a greater proof of their high respect for white residents, than the fact that the penalty of death is enforced against any native who may maltreat, or even elevate his hand to injure them. Slavery here is milder than in the other rivers, and domestic vassalage exists only in the name. Fresh-water, stock, dried fish, yams, and other vegetables, are plentiful, and can be purchased at moderate prices. This river in the sickly season is exceedingly unhealthy to the white seaman, the mortality among them frequently amounting to more than fifty per cent. The currency of these countries consists of copper rods.

European practitioners in any degree conversant with the medical customs of the negroes of intertropical Africa, cannot fail to be deeply im-

pressed with the marked attention paid by the native doctors to the due action of the cutaneous tissues, and their encouragement of this as a means for relieving disease. The Mahomedan code of laws, whose sanatory injunctions are so well adapted for the advancement of the moral and physical condition of the barbarous pagan tribes in central Africa, strictly enjoins not only ablution but other hygienic measures for the promotion of cleanliness, and the proper discharge of the cutaneous functions. The inhabitants of most of the maritime localities in the Bights are fully acquainted with the importance of these views, and treat the remittent and other fevers to which they are subject by endeavouring to excite a long-continued and copious exudation of sweat from the cuticular pores, by the aid of heated sand-baths, ablutions of hot water, and rude attempts to imitate vapour-baths. In some countries the patient is placed close to a large fire for such purposes, whilst in others he is held over it, water being slowly dropped thereon, so that the steam as it ascends may act on the affected portion of the body. After a careful observation of the good effects of this remedial system, I was led to pay more particular study to the utility of its application, and at length to try a modified adaptation of it for the cure of those adynamic remittent fevers so destructive to European life. I have no hesitation in asserting, that not only myself, but many others, who have experienced its efficacy by the speedy restoration to health, can vouch for its superiority over the ordinary practice of venesection, saline purgatives, and large doses of calomel, &c.

Shortly after my return to England from Western Africa, where I had been prosecuting a series of investigations into the nature and causes of endemic fevers, I was much gratified by the perusal of two interesting articles on the special functions of the skin, by my friend Dr. Willis*, whose pathological views, contained in them, are in several respects strikingly confirmatory of my own, while his application of them to the treatment of tropical diseases merits the most serious consideration. It would be evidently out of place in these introductory papers to enter into any details concerning his and my

* MED. GAZETTE, 1843-44, p. 1 and 481.

own views on the pathology of the febrile affections of tropical Africa; they will be given at a future opportunity, in a separate series of communications.

Fifteen miles from Old Calabar is the Rio del Rey, or king's river; it is divided from the former by the swampy peninsula of Backassey, the most prominent portion of which has been termed Backassey point. The Rio del Rey is now never frequented by merchant vessels, although plenty of palm oil, and other lucrative articles, may be procured from the natives, who are a shy and timid race, owing to the want of European intercourse. According to Barbot, those who resided on the upper banks of this river were called Calbonges, and he says that they are "generally a wild and brutal race, very cruel and unnatural; insomuch that among them it is common for a father to sell his children, a husband his wives, and a brother his sisters, or other relations."* This is, however, an exaggerated picture; they are not so ferocious as he states them to be. In the 17th century, the Dutch sloops from D'Elmina solely exported the commercial products of this river, which consisted of dyewoods, ivory, and slaves. On the eastern side of this stream is the elevated chain of hills known as the mountains of Rumby, which, with the lofty and isolated Qua mount, may be discerned at a considerable distance in clear weather. The latter is sixty or seventy miles deeper inland, near the source of the Rio del Rey, and is of volcanic formation. On the inferior declivities of these mountainous regions a multitude of petty villages and towns stud the country on all sides.

From the Rio del Rey to the river Bimbia, the coast inclines more to the south-east, and embraces a tract of land nearly fifty miles in extent. A slight projection of the shore (Pt. Limboh) constitutes the western limit of the bay of Amboises, between which and Bimbia Point is included that district designated in native parlance as Bdaek-wullah. The Spaniards named these lofty highlands *alta tierra de Ambozi*. Within the bay of Amboises or Ambas are three small inhabited islands, viz. Damah, Ambas, and Mondoleh, the latter of which being the largest seems to be well suited for a colonial settle-

ment, a reservation being made with regard to its salubrity. With the exception of Fernando Po, it is perhaps the only insular locale that could be recommended for such purposes, either in point of eligibility or healthiness. On the eastern side of Bimbia Point is King William's town, the metropolis of the district of Bahtungo, and opposite it, is Nicholls' Isle, so entitled after Colonel Nicholls, the late worthy governor of Fernando Po. The houses, like those of other African towns, are framed with palm sticks, plastered with mud composts, and are extremely filthy. A few miles to leeward is the village of Massin, adjoining which there is a convenient watering place for vessels.

The river Bimbia, originally called the Rio Pequeno, or little Camaroons river, is about two miles broad at its entrance. It runs for a few miles to the eastward, and divides into two branches, both communicating with the river Camaroons. From this river to Cape Camaroons the land is of a low and alluvial character, and about eleven miles in length. The Rio Camaroons, or Camaroons, formerly termed Jamoer, is one of the finest rivers in the Bight of Biafra, and has obtained its title from the Portuguese word *camaraõ*, signifying a shrimp. Several minor or tributary streams tend conjointly to enlarge its embouchure, but none of them are of any great magnitude. The western limit of the coast, known as Cape Camaroons, is placed in Lat. 3° 53' N. and 9° 0' E. Long. A short distance from it inland are the apertures of two or three large creeks that pass through an impenetrable mangrove forest. A little above this morass are the unimportant villages of Old King Bell, in which the barracons of the ordinary slave-ships that visited these regions were erected. In the interior, on the left, are the dark and imposing outlines of the stupendous Camaroon mountain, whose majestic peak (Mongo Malobah) has been stated to be 13,760 feet above the level of the sea. The southern extremity of the shore on the right side of the estuary of this river is a remarkable sandy promontory, named Suellaba Point, in close proximity to which is the river Malimba, and a few miles above it that of Quaqua, leading to the metropolitan town of Longassi. The shore from this spot rises to the height

* Op. id. B. 4. p. 335.

of sixty or eighty feet above the water, and is richly clothed by a profusion of fresh trees. On the verge of these heights in regular succession may be noticed the different towns of King Bell, King Acqua, Dido's, and John Aquas. The native habitations are neatly constructed of the usual materials, and are mostly built in long parallel lines on either side of a principal street or avenue, each hut being encompassed by groves of cocoa-nut, palm, and plaintain trees, the light green foliage of which adds an additional interest and beauty to their otherwise picturesque effect. The streets are wide, open, and clean, and in their structural disposition partake more of European designs than elsewhere. The towns are moderately healthy, and the diseases endemic to them assume the same character as those in the Old Calabar. Their remedial treatment is also similar. The aggregate population of these towns may be estimated as below 30,000. By the ancients they were successively termed *Hesperii Ethiopes* and *Achalines Ethiopes*. They are a well-made, powerful, and warlike race of people, proverbial for their shrewdness and dishonesty. The exports of this river are chiefly palm oil and ivory. The mortality among the Europeans averages from twenty to thirty per cent.

Sixteen miles to the southward of Suellaba Point is the river Borea, and from it to Garajam Point, a distance of forty miles, the shore from its recession inland has been denominated the Bight of Pannavia. From this part to the Cape of St. John, the coast for a hundred and twenty miles tends more to the westward, is low, thickly wooded, with a sandy foreground, and has two or three unfrequented rivers that empty their waters into the ocean. Little or no trade is carried on with their inhabitants. St. John's Cape is the northern boundary of Corisco bay, which contains the Elobey and other isles, and also the Rio da Angra, or the river Mooney. Corisco island was in 1679 taken possession of by the Dutch, who sent a detachment of forty men from their chief factory of Elmina to establish a colony. After erecting a fort and several houses, they were at length forced to abandon it, on account of the great mortality that prevailed among

them. Cape Esterias is the southern point of this bay; it is thirty miles from that of St. John's, and is the intervening land that separates the river Gaboon from Corisco. The Rio Gabon, or Gaboon, is situated in Lat. $37^{\circ} 48' N.$ and Long. $9^{\circ} 30' 30'' E.$, its mouth being about ten miles in width. On its eastern bank, nine miles from Point Clara, is King Qua Benstown, and on the same side, three miles from it, is that of King Glasses. A conspicuous projection, Owendo, or Red Point, may be observed six miles distant from this last town; to the south-east of it are the islands of Konikey and Parrot. On the southern shore, about forty-five miles from the entrance of the river, is Naango, or King George's town. The mercantile exports from this river are palm oil, camwood, ivory, various dyewoods, &c. There are several missionaries settled in the native villages. The French have recently erected a fort near one of the towns, and now carry on an advantageous trade with its people. Mr. Bowditch, who resided for some months at Naango, in allusion to the vegetation of this country, says, that "the redwood trees abounded with many which were new to me. The mangroves clothed the banks of the creeks and rivers, even growing some yards from the banks in the water, and their lower branches frequently covered with oysters. The palm-wine tree was plentiful. Like most parts of Western Africa, the woods were so covered beneath with shrubs and plants, that they seemed impenetrable. Immense runners twisting together dropped from the branches like large cables: generally covered with parasites, sometimes adhering to the parent stem, they became themselves a tree, and at others shooting across to the branches of the neighbouring trees, seemed to connect the forest in a general link." The *Micadania*, or shea butter tree, *Blighia sapida*, (soapberry), also flourishes here. Sandy Point, or Round Corner, is the southern termination of the shore in Gaboon river; from it the coast gradually becomes of a more concave outline as far as Cabo Lopo Gonzalves, or Cape Lopez, a distance of sixty-six miles. Near this cape, which lies in Lat. $36^{\circ} 0' S.$ and $8^{\circ} 40' E.$ Long. is the town of King Passol, the neat and uniform appearance of whose houses, with their accompani-

ment of verdant scenery, somewhat resemble those of the River Camaroons. The Bight of Biafra, or Biafara, may be said to end here, which may also be considered to be the terminus of the Guinea coast, although many of the old geographers state that the Rio Camaroons was its southern limit, and the commencement of Western or lower Ethiopia.

MORAL INSANITY*.

No other variety of mental disorder is calculated to occasion so much difficulty to commissioners or other visitors of lunatic asylums, or to give rise to so much perplexity in courts of justice, as that unsoundness which is termed "*Moral Insanity*." It is defined to be an affection in which the sentiments, habits, and, generally speaking, the moral feelings, rather than the intellectual faculties, are in a preternatural and disordered state. The common distinctive character of all these cases is of a negative kind, viz. that the faculties of the understanding remain apparently unimpaired, and that no delusive impression can be detected in the mind of the patient which may account for the perversion of his moral dispositions. Cases of this description were formerly looked upon as unaccountable phenomena. They are, however, now recognised as a distinct form of mental disorder in nearly all the public asylums. They are characterised by a total want of self-control, with an inordinate propensity to excesses of various kinds—among others, to intoxication. "This is often followed by an attack of mania, which, however, speedily subsides when the patient is confined, but is generally reproduced by the same exciting cause soon after he is discharged."

Many of the inmates who are apparently convalescent, whose conversation betrays no trace of intellectual aberration, and who present themselves to the commissioners as having a right to their release, are still so far disordered in their moral dispositions and habits, that nothing but the control implied in their detention within a lunatic asylum, keeps them from displaying their disease. Some of these persons are still extremely dangerous, and the discrimination of their state, is one of the greatest difficulties connected with the management of the insane. The following instance is recorded in the Report:—An epileptic lunatic, sufficiently recovered to be allowed to work on the farm of the proprietor, escaped from Gateshead Fell. He was pursued, but the wife of the patient interceded, and, as he was apparently rational, he was allowed to remain at large.

* Report on the Treatment of Lunatics: Quarterly Review, No. lxxiv.

Only two nights after his escape, he murdered his wife and daughter in a most horrid manner!

A case, recorded in the Report of an American Asylum, is not less striking:—A black man, a lunatic, who was confined in an asylum, had followed the trade of a butcher. He had been confined many years, but, from his showing no violence, was considered harmless, and allowed the range of the asylum. One night the black butcher secreted a knife: he induced another patient to enter his cell, prevailed upon him to lie down, and then cut his throat; he afterwards calmly cut him in quarters, and distributed the joints around his cell, as he had been in the habit of arranging his meat in his shop. He solicited the custom of his comrades, and to those who were chained, he carried such portions as they desired. The keeper was disturbed by the cannibal rejoicings. On examining the cells, he found one man missing. He asked the black butcher if he had seen him, and the latter replied he had just sold the last joint! This is an extreme case, but instances are known in every large asylum, displaying a total perversion of all moral feelings and social affections, while the sense and intellect survive, nay, are even lively and astute—a fact which ought to convince us that illusions and other passable defects of the understanding are not the most essential and necessary concomitants of insanity.

AVERAGE DURATION OF LIFE.

THE mean duration of life among the citizens of ancient Rome has been fixed at thirty years. This calculation is founded upon the registers kept by the Censors from the time of Servius Tullus to Justinian, comprehending a period of 1000 years. Mr. Finlayson ascertained from extensive observations, that the average duration of life among the nominees of *tontines*, was fifty years—a superiority of twenty years above the Roman citizen. The mean term of life for the whole population of Great Britain is forty-five, and for the population of Paris forty-two.—*Hawkins's Statistics*.

[Statisticians have recently shown that the mean age at death only coincides with the mean future lifetime, or expectation of life, in *stationary* populations, i. e. where the births and deaths are equal, and there is no emigration or immigration for 100 years. Hence the error of the old life tables. Recent calculations have shown that in England the mean age at death is twelve years below the mean expectation of life! In France the mean age of death is higher, but the true duration of life is *lower*, and the mortality greater than in England.—*Ed. Gaz.*]

MEDICAL GAZETTE.

FRIDAY, JULY 25, 1845.

NOTHING has transpired since our last, respecting the new Physic and Surgery Bill. It is rumoured that Parliament will be prorogued early in August, and it therefore becomes every day less probable that any attempt will be made to pass a Medical Reform Bill during the present session. Under these circumstances, it is to be regretted that there is not some ministerial announcement on the subject. Considering how few members there are who are now attending to their Parliamentary duties, it would be altogether undesirable that any attempt should be made to legislate on the subject. We must make up our minds to continue under the *ancien régime* for another year at least.

WE lately had occasion to refer to a meeting of Chemists and Druggists, which had been called for the purpose of opposing that clause of the Physic and Surgery Bill, which fixed a penalty of twenty pounds upon all those who acted or practised as apothecaries throughout England and Wales, without having been registered by the Council of Health. It was considered that these terms might be applied "to acts which are necessarily involved in the daily avocations of the chemist and druggist; and that besides placing on the chemist a restriction alike unjust to him and injurious to the public, it would be a source of continual litigation." Our opinion is, that without some clause of this kind, prohibitory of *unlicensed practice*, no measure of medical reform can, under any circumstances, be efficacious. The power of prosecution vested in the Apothecaries' Society would, we believe, operate

more by the terror of the law impending over the offender, than by its direct exercise; and it is difficult to comprehend how, if unlicensed practice is to be checked at all by the legislature, the clause could have been more simply worded. We have some doubt whether the dispensing and selling of medicines, even if it had been made the subject of a prosecution, would have been considered by our judges to be a violation of the terms of the act, since the functions of an apothecary properly consist in visiting and prescribing. If chemists and druggists claim these last-mentioned privileges as part of their daily avocations, why are others to undergo a long and expensive course of study in order to obtain them? And further we may ask, why may not grocers and small shopkeepers in country villages have an equal right with the chemists, to prescribe draughts and pills "for sudden fits of colic, dyspepsia, and fainting"? If we mistake not, the chemists complain as much of the grocers invading their privileges, as general practitioners complain of the chemists; and the arguments adduced to prove that the rights and privileges of the latter are invaded by the bill, would equally serve to shew, that any grocer, veterinary surgeon, or cow-leech, should have also the privilege of prescribing and dispensing medicines. If it were otherwise, the latter might fairly complain, that the chemist, by restricting them, wanted to establish a monopoly in physic.

The question, then, is *not* merely whether a chemist, regularly apprenticed in a respectable house, and who has thereby acquired a practical knowledge of pharmacy, should have a right to prescribe pills and draughts for diseases, concerning which he can know nothing, and in the diagnosis of which he is therefore much more likely

to be wrong than right; but whether *any individual throughout Great Britain* should, failing all other trades, have a like privilege of pronouncing what is colic, dyspepsia, rheumatism, &c., and prescribing accordingly! If our readers will turn to the last volume of this journal*, they will find a case in point. An "old soldier" prescribes corrosive sublimate for a man suffering from pain in his chest, and kills him. He is convicted of manslaughter. This man might have pleaded a right to practise, because he could supply medicines and advice cheaper than a chemist with a showy shop, and that he was allowed by usage, and somewhat protected by a clause in the act of 1815, to dispense, compound, and prescribe medicine for common and ordinary ailments!

The Chemists appear to us to have begun at the wrong end;—the expunging of a clause for prohibiting persons from acting as apothecaries without license or registration, is just as likely to be as injurious to the public and themselves, as to the medical profession. A Medical Reform Bill without such a clause as that which they met to oppose, would be a mockery and a delusion. In protecting themselves from the supposed penalties of such a clause, they are throwing open the practice of medicine to every pretender.

The privileges of a chemist certainly do not lie in *PRESCRIBING*; for this implies a knowledge of disease,—to attain which a laborious course of study is demanded. At present a chemist has no professional *status*, and herein consists the error. Any individual who chooses to open a shop, and fill his windows with large bottles of coloured liquids, marked with conventional alchemical symbols†, and to place in it

the model of a horse or cow, with a few empty retorts and cut-glass dishes, as the law at present stands, is privileged forthwith to prescribe medicine for "common and ordinary ailments!" This is neither reasonable nor just. Dispensing is one thing, prescribing another. It is bad enough that in a civilized country any person should be allowed to *dispense* medicines and vend poisons, without having undergone a regular course of study to fit him for such a responsible occupation: but it is far worse that he, wholly ignorant of medicine, should be permitted on the plea of *cheapness to the poor*, to *prescribe* for what he is pleased to consider common and ordinary ailments! We know that in the metropolis and other large towns there are many excellent exceptions to these remarks,—men who confine themselves to pharmacy and eschew medical practice; but our observations are intended to have a general application, and the same law which by omitting some important restriction gives a power of acting as apothecaries, to such individuals, confers a like privilege upon thousands of impostors and ignorant pretenders, who have neither discretion nor common sense to guide them! In our view, the respectable chemists and druggists should have asked for an additional clause, compelling all who intended to practise pharmacy and dispense medicines, to undergo an examination in chemistry and pharmacy,—the power of granting a license being given to some public body, such as the Apothecaries' or Pharmaceutical Society, or the new College of Chemistry. At present the two Societies are powerless, although we believe the latter has done much good in inducing many to undergo voluntarily a course of study and examination. A license to dispense medicines should be

* Page 778.

† The interpretation of these symbols would puzzle the old alchemists if they were now living. We sometimes see the symbol of Mercury on a

bottle containing a solution of copper. So again Sol takes the place of Mars, and Saturn rudely thrusts out Venus!

granted only in those cases where the candidate shows a competent knowledge of his trade; and, although the exact boundary between the acts of a chemist and apothecary could not perhaps be accurately defined, we verily believe that the members of the medical profession, would be most willing to put a liberal interpretation upon these acts, and not allow the licensed dispenser to be harassed by vexatious prosecutions. The prescription of a black draught, or a pill, might fairly be left to men who had undergone a course of study and shown a competent knowledge of pharmacy.

Let us, however, mete out equal justice upon this question. The licensed medical practitioner has no right to complain of the chemist, if he himself invades the province of the latter, and dispenses medicine, other than that required by his own prescriptions,—as, if he retails drugs and chemicals like a trading druggist. There are, we fear, too many of the so-called *regular* practitioners who are given to this irregular practice, and so long as it continues, it is perfectly hopeless that the practice of medicine should be put down among chemists. There are, we have reason to believe, men who hold the diploma of the Royal College of Surgeons, who keep shops not to be distinguished from those of druggists. They constitute the class of “*surgeon-chemists*”—they deal in scent-bottles, soap, and perfumery; and in their shops may often be seen a soda-water machine! Such conduct is, according to our view, in the highest degree censurable in men who hold the diploma of a Royal Chartered College: it formed one of the arguments of the College of Surgeons in its reply to the National Association, for not granting the Fellowship to a large number of respectable members who have kept themselves aloof from such practices. “*Would they include,*” the College indignantly

asks, “*the retail shopkeepers who expose for sale, cattle-drugs and perfumery?*”^{*} There can be no doubt that such persons have brought disgrace upon the profession, and have justified the dispensing chemist in endeavouring to add to his means of living by spurious medical practice. Nor can we blame him, so long as these practices are adopted by licensed medical practitioners; but we must blame the law for not repressing them, and the Colleges for not interfering to prevent such misconduct on the part of their members. They might, if they had so pleased, have had powers conferred upon them to put down the cattle-drug dealers and perfumery-venders, without offering an insult to a large majority of the profession.

These observations on the intrusion of the licensed practitioner into the domain of the chemist, may probably be met by the statement, that in some parts of England, the practitioner is the chemist and druggist of the village. In some instances, we believe, the sole representative of every department of the medical profession is the *grocer*,—the village may be too poor to support even a chemist and druggist. All this may be true; but it is no answer to our objection. Let the chemist and medical practitioner confine themselves within the proper sphere of their labours, and each will be able to procure a living without exciting the jealousy of his neighbour. As matters at present stand, it can scarcely be expected that the legislature will prevent dispensing chemists from treating “ordinary ailments,” when licensed medical men enter into a keen competition with them, as traders in drugs, soda water, and perfumery!

^{*} This argument of the College is about as conclusive, to use a surgical simile, as if an operator insisted upon the necessity of amputating at the hip-joint for a disease affecting the last phalanx of the little toe!

Reviews.

Insect Life. By DAVID BADHAM, M.D.
Small 8vo. pp. 171. Blackwood,
Edinburgh and London. 1845.

THE accomplished author has here given us one of the most delightful and amusing pieces of special pleading we have ever read. What an advocate he would have made! especially in a weak cause. What fertility of invention,—what quickness of rejoinder,—what terseness of expression,—aye, and how large an amount of carefully arranged knowledge would he have brought to the task of making weak arguments tell against strong facts, by the aid of neatly managed sophistries and ingenious assumptions. At least so we should infer, after carefully following out the really interesting train of one-sided reasoning by which he endeavours to prove the leading argument of this work—that *insects do not feel*.

The author is, however, not the only physiologist who has held this opinion. A few years ago some of the ultra-advocates of the excito-motory theory argued that the fact of the nervous system of insects being entirely ganglionic, and destitute of a true cerebral appendage, was an evidence that their movements are merely “excited,” and are not the results of perception and will; that, in fact, one of these acephalous animals owes its faculties of walking, flying, and performing all the other functions of its life, to a nervous power not more complete than that of the decapitated duck, which is said to have the power of running for some distance by the mere agency of its spinal nerves; or of the pigeon, which is capable of fluttering after its cerebral lobes have been sliced away. But we must remind the author, that the fact which he cites of a “certain kind of palsy, in which the limb is so alive to irritants as to contract and even to be violently convulsed when they are applied, while the palsied man is unconscious of pain,” is only an argument of the possibility of *involuntary* motion in a limb deprived of sensation; and further, that we have no evidence for believing that such excited action would ever occur in a part so circumstanced, if an impression were not conveyed to the spinal centre

by its sensitive nerves. A belief that *voluntary* motion can exist altogether independently of sensation, appears to us to be absolutely preposterous; and to maintain that insects cannot feel, merely because they are destitute of a nervous development precisely analogous in structure to the brain of the vertebrata, is as unreasonable as it would be to argue that they possess no respiratory function, because they are not furnished with bronchial tubes and pulmonary tissue.

It will be seen that, in arguing out his main proposition, the author has had a most difficult task to fulfil, and he has certainly performed it most ingeniously: still, if any one should be found critical and patient enough to enter upon the task of thoroughly breaking this butterfly of his upon the wheel, it may readily be shewn that his attempts to overthrow plain and substantial facts are every where in vain; and that, proposition by proposition, argument by argument, his ingenious sophistries may be combated and refuted. The bold and clever manner in which he endeavours to prove that insects have neither sight, hearing, taste, nor smell, is highly amusing, especially the part where he maintains that their eyes are not eyes, but mere inlets by which the universal stimulus of light finds access to the interior of their bodies. Here his mode of argument is very like that of Voltaire, who, in contending that the Deluge never occurred, stoutly denied the existence of fossil remains. He, of course, altogether opposes the idea that these creatures are susceptible of pain, and therefore historians need not, in future, be at the trouble of inveighing against the Roman tyrant for his fly-crushing propensities; urchins may have their will in spinning cockchafers, and Shakespeare’s “little beetle” theory must be placed among the vulgar errors. It will be observed that, at one part of his work, the author cites the apparent insensibility of many insects under the infliction of severe mutilations, &c. as evidence that they do not experience pain; but elsewhere says, that “in reality no kind of motion proves pain.” This last fact, then, solves the difficulty. It frequently requires a very practised eye to distinguish the outward signs of intense suffering in some of the highest mammalia; and, often,

the human lineaments even would not indicate to a careless observer the physical anguish which is raging within ;— Who, then, can judge of the feelings of a blue-bottle fly by watching the expressions of his physiognomy? Denying to this class the possession of any organ analogous to a brain, and consequently of the slightest degree of sensibility, he is, of course, unwilling to allow them perceptive or instinctive faculties, and it will be noticed that, in doing this, as his task of proof increases in difficulty, his arguments become weaker and more evidently shallow. We cannot spare room for the discussion of many of his propositions, but let us weigh one or two of those upon which he appears to lay considerable stress, as very fair specimens of the rest. He argues strongly upon the inconsistency and "unexpected behaviour" of certain insects as evidence of their want of instinct or intelligence, as if inconsistency and unexpected behaviour were the especial characteristics of ants and spiders! As we read on, we could not help observing, that every such eccentricity attributed by the author to these little creatures, has continually its parallel in human conduct. The refusal of the ants to accept the Doctor's assistance and "suggestions" in their labours (pp. 113, 114), and the "egregiously absurd behaviour of" some "mutilated ants, who seized upon the first booty they could get, although they had no access to their magazine to store it," (p. 116), may be looked upon as literal types of human conduct, and are daily illustrated in the actions of reasoning and educated men. The pill-beetle and the earth-worm are not the only creatures that are capable of being cheated, nor is the ant the only animal that fails to "improve the opportunity to escape" when involved in a position of difficulty. To disprove the presence of sensation and of instinctive power in insects, it is not necessary to shew that they are deficient in qualities for which the majority of our own species are by no means remarkable; such a style of argument may be interesting, because it develops facts; but it is beyond the author's purpose, and it suggests to his opponents the safer proposition, that these little creatures are endowed with many qualities, which are exercised with a consistency and a foresight that often

put to shame the efforts of the self-satisfied mind of man. The author concludes his illustrations of the want of intelligence of insects by what he apparently considers to be a very convincing argument. He describes a party of ants, who, having brought a dead bee to the door of their house, and finding the entrance not large enough to admit him, dismembered their prize for the purpose of disposing of him with greater facility. Upon this he argues, "now, if these ants had reflected, would they not have pulled him to pieces where they first found him, and so have saved themselves much unnecessary trouble?" How strange it is that really sensible men should ground their arguments upon such data as these! Has not the author heard of an instance which occurred recently at one of our ports, where a ship was built of so large a size that, when completed, it was found impossible to tow her out of the dock?—a far greater mistake than that of his ants; and yet these insects are considered to be destitute of foresight, in committing an error which architects and mathematicians have failed to avoid!

To prove that some of our present definitions of instinct, reason, intelligence, &c. are incorrect, and that insects do not possess those properties as defined by metaphysicians, is no proof that these creatures are destitute of perceptive powers: to disprove the arguments of the metaphysician, is not to disprove the great truths upon which he has attempted to reason.

We can scarcely resist the belief that this pleasant little book has been written merely as a philosophical hoax; that the author is a wag, who, so soon as his theories have borne conviction to the minds of all the tea-table coteries of modern Athens, and have been eagerly adopted and retailed throughout the land by popular lecturers and useful-knowledge publications,—will astonish his proselytes by laughing at his own views, and teaching them the lessons that subtle arguments will not avail to disprove real facts; that the logic of the schools may be a very incorrect exponent of physical and vital laws; and that the public should not be too easily convinced in discussing questions, the leading doctrines of which they do not understand. If he be really

in earnest, we cannot wish him success in the ungracious task of divesting the entomologist of what is certainly the most delightful part of his present knowledge—in proving that the objects of his study are by no means the perfect creations he has hitherto considered them. Dr. Badham takes as much pains to establish the belief that insects are destitute of perception, and hold almost the lowest place in the scale of organized beings, as Huber, Kirby, and a host of other naturalists, have done to prove the greatness and completeness of the design upon which they are formed. In all science, much credit is due to him who removes specious fallacies, but it will always go hard with the writer who endeavours to argue against strongly-supported facts;—the way to the fountain-head of true knowledge can never be successfully followed with this crab-like step.

The author's work certainly does him great credit as a man of ingenuity and a scholar, and a cautious perusal of it will be found a very delightful exercise to any mind; but we doubt if its opinions will ever become popular, for most men will think that it is better, when gazing upon an ant-hill or a bee-hive, even to be in error in believing that the extraordinary movements which we see in its minute inhabitants are the results of a wonderful perceptive faculty, which has been implanted in them by the benevolence of an all-wise Creator; than to be right in supposing that the insects are mere senseless automata, in which perception and thought are only simulated, and every movement is merely the result of external stimuli.

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A Pentaglot Dictionary, with the terms employed in Anatomy, Physiology, Pathology, &c. In Two Parts. By SHIRLEY PALMER, M.D. Large 8vo. pp. 655. Longman and Co.

THIS elaborate work, which is at length completed, contains, like Kraus's Lexicon, an immense amount of information valuable to the medical student, and almost indispensable to him who wishes to carry his professional studies into other languages. The terms employed in every branch of medical science are here introduced, commencing with the French, and followed by the

synonymes in the Greek, Latin, German, and English languages. Perhaps the plan pursued by the author will be best understood by a quotation, and we will take for example the word—

“MÉTÉORISME s. m. Meteorismus m. (μετεωρισμός, elevation) L and G: in Pathology, *distension* of the abdomen by gaseous fluids: occurring in atonic conditions of the intestinal canal, in Hysteria and Tympanitis, or as a consequence of abdominal wound, inflammation, or congestion. Developed at the close of typhoid fever, meteorism is almost an invariably fatal sign. The presence of gas in the bowels of the dyspeptic is not always the effect of acescent food, it is frequently evolved from the vessels of the organ themselves.”

It will be seen by this quotation, that the work is something more than a mere lexicon, or a dry compilation of words and synonymes. The author has not confined his labours to the collection of medical terms only:—we find that those connected with pharmacy, medical zoology, botany, and chemistry, are also noticed. The second part of the work comprises a compendious German, English, French dictionary, or a collection of medical and scientific German words, to which the corresponding synonymes in English and French are attached.

We cannot help thinking that there is great disadvantage in making French the leading language of this dictionary. It will cause it to become a sealed book to many medical students, who, we believe, taken as a class, are very deficient in their knowledge of this most useful language. We would suggest to the author that he might advantageously consult Kraus's Lexicon, and, in a future edition, add words which, although perhaps not classically pure, are still so often met with in modern writings as to require explanation. Thus we do not meet with any explanation of the common word “*Vibices*,” although this word and its corresponding word “*Vergetures*” are to be found in French works. So we do not find on reference the word “*Pyelitis*,” a term, we believe, introduced by the French author, Rayer,—signifying inflammation of the pelvis of the kidneys. On the whole, however, we must say, that we have been seldom disappointed in finding on reference, a full and satis-

factory explanation of the medical and scientific terms which we have had occasion to seek, and we can strongly recommend Dr. Palmer's dictionary as a most useful companion to those of our readers who are acquainted with the French language.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Tuesday, June 24th, 1845.

DR. CHAMBERS, PRESIDENT, IN THE CHAIR.

Case of Strangulated Hernia reduced en masse, with Observations. By ROBERT WADE, Esq. Senior Surgeon to the Westminster General Dispensary.

THE patient, a man in his seventy-fifth year, who had been afflicted with inguinal hernia on both sides for nearly thirty years, was seized with the usual symptoms of strangulation. On examination no appearance of hernia could be detected. Purgatives and enemata failed in procuring evacuations. The circumstance of a slight darting pain having been experienced by the patient in the right inguinal region, on getting out of bed on the day that he was taken ill, and that on coughing the hernia descended on the left side, but could not be made to protrude on the right, led to the conclusion, that the right hernia, with its investing sac, had been reduced *en masse* by the patient, that the obstruction existed in the neck on that side. The author accordingly operated on the right side, in the evening of the second day. The inguinal canal having been freely laid open by a division of the tendon of the external oblique muscle, the sac, which was much thickened and closely embraced the intestine, was opened. It contained a small knuckle of congested intestine. A membranous band, distant as far as the finger could reach, was divided, and the strangulated intestine was then reduced. The patient afterwards recovered.

The author concludes the paper with a brief notice of twenty similar cases, recorded by British and Foreign surgeons, and remarks, that a consideration of these cases cannot fail to suggest the necessity of the most careful examination being made in every instance where symptoms of internal strangulation are present.

Account of Two Cases of Aneurism in which there was neither pulsation nor abnormal sound. By T. A. BARKER, M.D. Physician to St. Thomas's Hospital.

In the first of these cases there was a large

aneurism of the aorta, commencing about two inches above the heart, and extending a little beyond the origin of the left subclavian; through the whole of which space the artery was at least three times its natural diameter.

In the second case there was an aneurism of the right renal artery, of the size and shape of a heart of ordinary bulk.

In the first case the aneurism was not detected during life; and, in the second, it was discovered only the day before death; although a *post mortem* examination did not reveal any cause of the absence of the ordinary symptoms.

The cases are considered remarkable, not because large aneurisms existed without being detected; but because neither pulsation could be felt, nor abnormal sound heard, although certain symptoms had led to the strong belief that aneurisms existed in the arteries where they were afterwards found; and repeated and careful examinations were made with the expectation that unequivocal symptoms of aneurism would be detected.

Observations on Fissure of the Palate. By ALEXANDER NASMYTH, Esq.

THE interesting paper lately laid before the Society by Mr. Fergusson, "On the Anatomy, Physiology, and Surgical Treatment of Fissure of the Palate," has induced the author to submit his views on the mechanical assistance which may be offered in cases where such surgical treatment may be unadvisable, or not submitted to.

The author corroborates from his experience the accuracy of Mr. Fergusson's statement, that of late years English surgeons, generally, have abandoned cases of fissure of the palate, and left their patients to apply for mechanical adaptations. After applauding the superiority of a formation or restoration of the parts to a natural state over every other kind of assistance from art, and admiring the important step towards the improvement of the purely surgical operation made Mr. Fergusson, the author takes a review of the mechanical contrivances which have been had recourse to, both in this country and abroad, distinguishing between those for congenital fissure, and those for fissure arising from disease. He shows wherein those contrivances have been found to fail—states the inconveniences inseparable from mechanical adaptations, also those consequent on the surgical treatment—describes the nature of the cases which indicate the propriety of mechanical interference, and those which forbid such interference—simplicity and durability being the great desiderata sought to be obtained in these adaptations. He also describes the contrivances by which he has attempted

to arrive at those ends, explaining what may be reasonably expected from following out his views; and he shews that, in cases of fissure arising from disease, perfect deglutition and articulation may be confidently promised: that in congenital cases deglutition may be perfectly established, and very great aid afforded to articulation; and that articulation in congenital cases particularly requires time and perseverance on the part of the patient, great care and exactitude on the part of the practitioner, but that those requisites secured, great benefit may always be promised, if not distinct and perfect articulation anticipated.

Statistics of Bethlem Hospital, with Remarks on Insanity. By JOHN WEBSTER, M.D. F.R.S.

AFTER referring to his previous paper, published in the 26th vol. of the Society's Transactions, the author makes some remarks respecting the period of the year when mental diseases were most prevalent, when the greatest number of patients were cured, and when the largest proportion of deaths occurred at Bethlem Hospital. These points he illustrates by a table compiled from the official registers (which shows, that most lunatics were admitted into the institution during the second and third quarters of the last twenty-two years, most were cured during the third and fourth quarters, whilst the largest number of deaths were met with in the last, but especially in the first quarter of the above series of years). The author next alludes to the occupation of the insane patients, and states, that sixty-six per cent. of the inmates of Bethlem Hospital are now employed. This employment of the insane is found to have a very beneficial influence in their treatment, and tends materially to diminish the necessity of using personal coercion in the management of lunatics; in proof of which, the author states, that five years ago, the weekly average of persons under restraint was thirteen, whereas at present, when the system of employing the insane patients is more developed than formerly, during some weeks, only one, and occasionally not even one individual is in restraint. The author subsequently gives a synopsis of twenty-eight autopsies recently performed at Bethlem Hospital by Mr. Lawrence, thus making 100 *post-mortem* examinations of lunatics, if the seventy-two dissections previously reported are taken into the account. The diseased alterations of structure are succinctly described in the twenty-eight cases now brought before the Society, of which the following may be given as a summary. In twenty-five, there was infiltration of the pia mater. In twenty-four, turgidity of the blood-vessels. In nineteen,

effusion into the ventricles. In twelve, fluid was found at the base of the brain; besides other varieties of morbid appearances. In twenty-two cases, the organs of the chest were diseased; and in thirteen, the abdominal viscera were more or less affected. In conclusion, the author makes some general observations on the facts contained in his paper.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

WE have looked over the proceedings of the late meeting of the British Association at Cambridge, in order, if possible, to find some papers worthy of extraction from the Medical section, but in vain. We have reason to believe that in this department of science, the Association has completely failed; and we find that it is intended hereafter to convert it into a purely Physiologic section. It is evident, that the Association has hitherto given but little encouragement to the medical department. Thus while a sum of £650 is voted in grants connected with astronomy and physics, especially the former, about £40 are granted for inquiries connected with medical subjects. This is of course owing to the great preponderance of mathematicians and astronomers. Although we have failed in discovering any subjects for selection from the medical, we shall make a few extracts from the papers read at the Chemical Section.*

Analysis of three Species of Fucus. By E. G. SCHWEITZER. — These analyses were undertaken with a view to ascertain the causes which render one kind of fucus beneficial as a manure while other kinds do not succeed. It was found that in the *Laminaria saccharina*, the alkaline carbonates predominated†, while in the *Fucus vesiculosus*, and *Fucus serratus*, there was an excess of the sulphates. In the laminaria, potash is found in larger quantities than soda, while the contrary is the case with the Fuci. The quantity of iodine in the Laminaria was also greater than in the other two. Some experiments were tried in order to ascertain if the Laminaria exhaled iodine under the influence of sunshine, but no such exhalation could be detected. Twelve and thirteen different constituents were detected in the analyses.

On the Voltaic reduction of Alloys. By C. V. WALKER. — It is a new fact, that alloys can be precipitated by an electric current, By dissolving copper and zinc successively in cyanide of potassium under electric action,

* Abridged from the Athenæum, for June 28, and July 5.

† Quercy, the result of incineration?

Mr. Walker obtained a deposit of the metals in the form of brass. He considers brass to be a definite chemical compound, and that the brass of commerce is a true alloy with an excess of zinc. He therefore regards the solution as a potassic cyanide of brass; and as it is easily decomposable, it requires to be prepared a short time before use. By similar means, alloys of gold and copper and gold and silver were obtained as deposits.

On Atomic Volumes and Specific Gravity.

Effect of soluble Salts on the bulk of the Solvent. By Dr. L. PLAYFAIR, and J. P. JAULE.

Gay Lussac had proved that gases unite in multiple volumes, and that the resulting compounds stand in a simple relation to the volumes of their constituents. Schröder, Kopp and Persoz had drawn attention to a fact formerly enunciated by Thomson, that the quotients resulting, when the atomic weights of certain bodies are divided by their specific gravities, are often the same numbers for different elements. Kopp and Persoz extended this observation to many isomorphous compounds; and Schröder observed, that when the primary volume of the same member of a series of analogous compounds is subtracted from them, the remainder is equal for each. In these inquiries, however, there was no attempt to ascertain whether the volumes of solids were multiples of each other. The authors of the present communication have examined the volumes occupied by an extensive series of salts. They conceived that the error of previous experimenters was in comparing the specific gravities of solids with an equal bulk of water, or in other words referring the solid form of matter to its liquid form. To contrast the volume of a salt in its liquid state with water, the authors constructed a simple instrument, consisting of a bulb with a graduated stem; into this, by means of a tubulure, the salt was placed and dissolved in a given weight of water, which had previously been introduced. The increase in the stem of the instrument, corrected for the expansion of the solution above that of water at a given temperature, gave the volume of the bulk in solution. The first results given by the authors were, that certain hydrated salts, such as the magnesian sulphates, occupy no space of themselves in solution, but merely the space which would have been taken up by their combined water, had it been added without the salt to which it was attached. Dalton had observed this fact in some cases in the year 1840, and the authors have confirmed his observations. The case is particularly striking in alum, which contains 23 anhydrous atoms, and 24 atoms of water; on dissolving alum in water,

the space occupied is exactly that due to the water, the 23 anhydrous atoms taking up no space of themselves. The authors then proceeded to examine the volumes of salts which are either anhydrous, or are combined with only a small quantity of water. The stem of their volunometer was divided into grains of water, so that 9 of the graduation was equivalent to the volume taken up one equivalent of water at 60° Fahrenheit. On dissolving an equivalent of any salt in water, they observed that the increase was in every case either a 9 or a multiple of that number, the extreme difference in the observations being 2 in 45. Thus, an equivalent of sulphate of potash increases the bulk of the water 18, or 9×2 ; chloride of potassium 27, or 9×3 ; &c. This law of multiple volumes they found to prevail with great uniformity in all the classes of salts which they subjected to examination. Salts which possessed the same form in the solid state, possessed also the same volume in solution, with the exception of the ammoniacal salts, which affect one volume in solution more the corresponding salts of potash. Double salts were found to have the sum of the volumes of the constituent salts. The next subject treated of by the authors was the specific gravity of solids: they had found, that in every case the salt in solution occupied less bulk than it did in its solid state,—the difference for each volume being as 9:11. If the specific volume of the salts, which in solution took up no bulk of themselves, were divided by 11, the quotient indicated the number of atoms contained in the salt: several exceptions were given, in which the difference was as 9:10, or the difference between the volume of water and of ice. In the case of anhydrous salts, or salts possessing only a small amount of water of hydration, they did not find any exceptions as to the multiple relation of the solid volumes, except those due to errors of observation, the extremes of which were stated as 3 in 44. The quotient resulting from dividing the atomic volume of the solid by 11, in most cases gives the same numbers as that obtained by dividing the liquid volume by 9. In some cases, however, a chemical union seems to take place between the salt and the water, for the salt in its solid state loses a volume in becoming liquid: thus, sulphate of potash, which has a volume of 33, or 11×3 , in its solid state, has in solution a volume of 11, or 9×2 . The ammoniacal and corresponding potash salts have the same volume in the state of salts; in fact, all strictly isomorphous bodies have; and double salts have their volume the sum of the volumes of their constituent salts. The authors described the new mode which they had employed in taking the specific gravities of salts; the simplicity of which

they conceived to have enabled them to establish the relation between the specific gravities of the salts, by enabling them to multiply their observations.

Recent Experiments on Ozone. By Professor SCHÖNBEIN.

Prof. Schönbein was first induced to undertake his researches from the obscurity which rested upon the phenomena of the odour produced during the galvanic decomposition of water, resembling the smell of an electrical machine, and during thunderstorms. In pursuing these researches, the author was led to the discovery, that the smell was always developed at the positive pole; that it was capable of being preserved in closed bottles; that heat destroyed it, and that many of the metals had also the same power. Experiments were made with a view to discover some means of procuring ozone easily; and after the trial of a great many bodies, it was found that phosphorus was particularly suited for the purpose. If a piece of phosphorus is placed in a bottle of common air, when maintained in a moist state, it readily produces this peculiar principle, on which the electrical smell depends. Several experiments were shown, to illustrate the effects of ozone in bleaching litmus paper and paper coloured with indigo, or a solution of that substance. If powdered iron or silver are placed in vessels containing ozone, the smell is immediately removed, and the metals exhibit a kind of oxidation. Other bodies were named, as producing a similar result; and many chemical decompositions were found to arise from exposure to the action of this peculiar principle. Solution of iodide of potassium is rapidly decomposed, iodine being set free; this was shown by a mixture of this salt with starch, which, on being exposed to the action of ozone, turned blue by the formation of iodide of starch. Bromide of potassium was also decomposed by this principle, and bromine liberated. Salts of iron were shown to undergo the same changes. A number of organic bodies, both vegetable and animal, destroy the ozonous smell. If ozonized air be made to pass through a tube, and this tube gently heated, all the properties of ozone are destroyed. This was shown by experiment. By the inspiration of ozone, similar effects are produced on the lungs to those resulting from chlorine and bromine. A mouse was killed in five minutes, and the experimentalist himself was seriously affected by breathing an atmosphere charged with this odour. By electrolysis, gold or platinum points are necessary for the development of ozone. The electrical brush in all cases produces the same effects as those above described; all the decompositions can be produced, and the same smell is distinctly evi-

dent. In this case, as in the other, heat and some of the metals also destroy the odour. Endeavours have been made to procure ozone in an isolated state, but they have not been successful. Ozone, although at first supposed to be an elementary body, was afterwards considered as a compound of oxygen and hydrogen. The fact of heat destroying this peculiar odour at once, shows that this principle is produced from the elimination of an oxygen compound from the decomposition of water. This is quite in accordance with the views entertained by Marignac, who has pursued the investigation with great industry, and who has published a memoir, in which his views are luminously set forth. The author of this report is of opinion that ozone will turn out to be a compound, isomeric with the binoxide of water. A theoretical view of the production of this body was then entered into. The ordinary action of phosphorus undergoing oxidation in the atmospheric air was explained, and the remarkable fact stated, that although phosphorus was luminous in moist air, it was not so in perfectly dry air. Ozone may now, therefore, although long regarded by Prof. Schönbein as an elementary body, be looked upon as, in all probability, a trioxide of hydrogen. Its bleaching properties are very remarkable, and it may possibly be of considerable practical utility.

Experiments on the Spheroidal State of Bodies, and its Application to Steam Boilers, and on the Freezing of Water in red-hot Vessels. By Prof. BOUTIGNY.

Prof. Boutigny, who made his communication in the French language, first proceeded to show that a drop of water projected upon a red-hot plate does not touch it; but that a repulsive action is exerted between the plate and the fluid, which keeps the latter in a state of rapid vibration. At a white heat, this repulsion acts with the greatest energy, whilst it ceases, and the ordinary process of evaporation takes place at a brown-red heat. The temperature of the water whilst in the spheroidal state is found to be only 96° , and this temperature is maintained so long as the heat of the plate is kept up. To bring this water to the boiling point (to 212°), it is therefore necessary to cool the plate. These phenomena are explained by M. Boutigny on the supposition that the sphere of water has a perfect reflecting surface, and consequently that the heat of the incandescent plate is reflected back upon it; and some experiments have been made, which show that this is the case, the plate becoming visibly redder over those parts on which the vibrating globule played. Several experiments were made in proof of this

necessary cooling to produce ebullition. The red-hot plate, with its spheroidal drop, was removed from the spirit-lamp, and after a minute or two, the water began to boil, and was rapidly dissipated in steam. Ammonia and ether were shown, although so exceedingly volatile, to act in the same manner; the ether, however, being decomposed whilst in the vibratory condition, in the same manner as it is by the action of platina wire, forming a peculiar acid. Iodine put upon the heated plate became fluid, and revolved in the same manner as other fluids, no vapours escaping whilst the high temperature of the metal was maintained; but when allowed to cool to the point of dull redness, it was immediately dissipated in violet vapours. The nitrate of ammonia fused on the glowing hot plate, and vibrated with great energy; but on cooling the capsule, the salt entered into vivid combustion. The repulsive action was shown by plunging a lump of silver at a glowing red heat into a glass of water. As long as its bright redness was maintained, there was no ebullition; but as it slowly cooled, boiling took place. In this experiment, it appeared as if the glowing metal formed around itself an atmosphere; and the contiguous surfaces of the water appeared like a silvered plate. The application of the principles involved in these phenomena to the tempering of metals was then explained. If a metal to be tempered is in a highly incandescent state, the necessary hardening will not take place on plunging it into water. It is, therefore, necessary that a certain temperature should be observed. Experiments were made to show that the repulsive power of the spheroidal fluid existed, not merely between it and the hot plate, but between it and other fluids. Ether and water thus repelled each other, and water rested on and roiled over turpentine. The bursting of steam-boilers came next under consideration; and it was shown that many serious explosions may be referred to the phenomena under consideration. In a great many cases, the explosions have occurred during the cooling of the boilers after the withdrawal of the fire. An experiment was shown in proof of the view entertained by M. Boutigny. A sphere of copper, fitted with a safety-valve, was heated, and a little water being put into it; it was securely corked up, and withdrawn from the lamp. As long as the metal remained red, everything was quiet; but upon cooling, the cork was blown out with explosive violence. The concluding experiment excited great interest. The production of ice in a vessel at a glowing red heat was a result so anomalous, that every one was desirous of witnessing the phenomenon for himself. It was beautifully performed by

M. Boutigny, in the following manner:—A deep platina capsule was brought to a glowing red heat, and at the same moment, liquid sulphurous acid, which had been preserved in the liquid state by a freezing mixture, and some water, were poured into the vessel. The rapid evaporation of the volatile sulphurous acid, which enters into ebullition at the freezing point, produced such an intense degree of cold, that a large lump of ice was immediately formed, and being thrown out of the red-hot vessel, handed round to the company in the Section.

REMARKS.—If we except the last mentioned experiment, the facts detailed by M. Boutigny present no novelty whatever. We remember seeing most of these experiments performed by M. Pouillet at the Sorbonne fifteen years ago, and some of them must have been familiar to our readers as class experiments for many years; for example, the fact that water, ether, alcohol, and nitric acid, might be poured on a platina capsule at a full red heat without boiling or giving off a *visible* vapour. On cooling the vessel, however, the liquids boil and rapidly escape in vapour, which in the case of alcohol and ether becomes inflamed. There is undoubtedly no contact with the red hot plate; the expelled liquid every where presents a rounded margin like mercury, and is in continual motion, sometimes dividing and subdividing itself. M. Boutigny states that the water does not acquire a temperature higher than 96° : one fact is certain, the liquid is continually vaporized, but gives off no *visible* vapour; hence it must be far below the boiling point. The whole of the salts and organic matter may be in this way extracted from water, without resorting to ebullition. The experiment succeeds best when the water is boiled before being poured on the red-hot capsule. In frequently performing the experiment with iodine, that substance was obtained as a repelled dark-coloured liquid, but always surrounded with a halo of purple vapour, and indeed unless the iodine were cooled to 50° or 60° , it is not easy to see how it should be otherwise. There appears no reason why the iodine, in this case, should have a lower temperature than its point of fusion (220°), at which it gives off very abundant vapours. So we have found that the nitrate of ammonia, whether projected on the red-hot vessel, in a state of fine powder, or as a boiling saturated solution in water, was merely dissipated in an abundant white vapour on cooling. The application of these facts to the bursting of steam boilers has been long known in England, and has received many interesting elucidations from Professor Faraday.—ED. GAZ.

Correspondence.

To the Editor of the Medical Gazette.

SIR,—It is well known to all microscopical observers, with respect to mucous and pus-cells, that the molecules and granules, (*i. e.* the smaller dark particles, and the larger bright ones) in their interior vary very much in magnitude, some being so minute that the highest magnifying power available for their examination fails in shewing more than barely perceptible particles; whilst others are of considerable size. It is also known to all observers that in addition to these molecules and granules there is, in their interior, a *third object*—generally, though not always visible—to which the term *nucleus* has been (I believe) usually applied; this third object or nucleus varying in its appearance according to the varying circumstances or re-agents to which the cells containing it may have been exposed, being sometimes seen single, at others double, divided into three or four parts, round, oval, &c.

Now there are two distinct kinds of colourless cells to be detected at all times in human blood; in the interior of one kind we see a multitude of barely perceptible molecules, with a large, round, single, and well-defined nucleus; in the interior of the other kind we see a less multitude of larger, darker, and coarser particles mingled with bright granules, in the midst of which the nucleus may, or may not, be visible; if visible, it is sometimes single, sometimes double, &c.

FIG. 1.



FIG. 2.



Figs. 1 and 2 are sketches of these two kinds of colourless blood-cells. There are many intermediate ones, but the two extremes, when seen in the field of the microscope at the same time, cannot fail of being distinguished.

I adopt the following proceeding to shew these objects;—

Puncture the skin of the finger, and receive a very small drop of blood on a slip of glass. Dip the point of the lancet in water, and mix the blood with an *equal bulk* of water. Let a slip of thin glass fall gently upon the mixed blood and water, and examine with a linear power of 700 or 900.

I can discriminate the two kinds of cells here referred to without any addition to the blood, and I have seen two kinds of colourless cells, marked by the same distinguishing characteristics, circulating in the inflamed capillaries of the web of the frog's foot.

From these observations I conclude, that two distinct kinds of colourless cells may at all times be discriminated in human blood; the one with a nucleus (*or third object*) and a multitude of exceedingly minute molecules, only; the other with a nucleus, a number of large, dark, coarse molecules, and several bright granules. These last objects, the granules, may be (as noticed in the first series of my Experimental Researches) of an oily or fatty nature.—I remain, sir,

Your obedient servant,

WILLIAM ADDISON, F.L.S.

Great Malvern, July 14th, 1845.

Medical Intelligence.

THERE are at present before Parliament thirty petitions for inquiring into the working of the Anatomy Act, signed by 3,439 persons; 289 petitions for an amendment of Sir James Graham's Physic and Surgery Bill, as it now stands, and 28 petitions in its favour, signed by 915 persons.

A DEMONSTRATIVE ARGUMENT.

"AND why be pilles giue at night? Because a mā may sleape well after theym. What doth sleape then preuale? Because sleape maketh the bodye warme within, and pilles be verye harde; and therefore they must be resoluēd with warmnesse. To what maner of menne? To them whych have the riche mens sicknes. What is that? Forsothe the goute, whych many gentlemen be tormented wythall; as example, Syr Rychard Fulmerston, Knyght, Barthram Anderson, Esquyre, &c. For the goute is sore afrayde to dwell among poore men, for they keepe hym so hardly, and punysh him wyth colde and labour, &c. But the bitterest pilles of all inward medicines do fardest pearce to the hands and feete, to purge and heale them. And in the feete the goute is placed, therefore pilles be good for the feete. Who can deny it, whych I have spoken?—*C. Bullein's Bulwarke of Defence against all Sicknes, &c.* 1562."

LORD ERSKINE, in whose province it lay to issue all commissions of lunacy, was himself remarkable for his eccentricities of conduct. Among other circumstances, it is mentioned by Sir S. Romilly, that the Chancellor, on one occasion, showed him two leeches which he declared had saved his life by their having been applied to his temples during a critical illness. These leeches he kept in a glass, and he said, with the greatest seriousness, that they knew him, and that he had formed a friendship with them. He named them Home and Cline, from the two well-known surgeons who had attended him, and he declared that they were of very different dispositions!

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURES,

Delivered at University College Hospital,

By DR. C. J. B. WILLIAMS, F.R.S.&c.

[Taken in Short-Hand by our own Reporter, and revised by the Professor himself.]

LECTURE I.—May 8th, 1845.

Five Cases of Albuminuria terminating fatally:—1. With double pneumonia; 2. with delirium tremens; 3. with hæmorrhagic apoplexy; 4. with double pneumonia and tubercles; 5. with morbus cordis—epidemic prevalence of albuminuria—pathology and varied effects—varieties of cacoplastic deposit in the kidney connected with albuminuria.

IN looking over the cases which have occurred since we last met, I find the notice of seven deaths, five of which were cases of albuminuria. Some of them presented circumstances of much interest in relation to this disease; therefore I shall briefly notice them. Albuminuria was common to all; but there was considerable diversity in the complications with which it was combined. It would take a longer time than the space allotted to a lecture will afford, to read the cases at length; but I have set down the heads of them in order to refresh my recollection in speaking of them.

I will mention the names of the cases, and briefly allude to their peculiarities; Charles Crouch, Joseph Mayhew, Matilda Martin, Hannah Gough, Amelia Acors. In each of these cases the urine was albuminous, and the kidneys were found in that peculiar change of structure which commonly coincides with it. Three of these patients died in the course of a few hours after their admission, so that we saw them only *in extremis*. Charles Crouch died of pneumonia, Joseph Mayhew of delirium tremens, and Matilda Martin of apoplexy, and they survived so short a time after admission that they cannot be said to have been under treatment, nor to have presented any clinical history which we could satisfactorily note. Hannah Gough, who died of pneumonia supervening on phthisis, together with albuminuria, lived only a few days; but Amelia Acors was longer under our observation, and on a former occasion I made her case the subject of a lecture. In her case very extensive organic disease of the heart was recognised in complication with albuminuria, and that circumstance led me to form an unfavourable prognosis; I mentioned, when speaking of her before, that probably ere long the disease would terminate fatally.

The cases of Charles Crouch and Hannah Gough bore some resemblance to each other; both were cases of albuminuria; in both the immediate cause of death appears to have been an attack of inflammation of the lungs, and in both that inflammation was on both sides, constituting double pneumonia—pneumonia affecting both lungs.

The case of Crouch presented several remarkable peculiarities which I believe are to be explained only in connexion with the disease affecting the kidneys. He appears to have been a young man of very intemperate habits. He was in a brewer's service, and was habituated to the excessive use of the beverage to which he had free access. From some circumstances he got into difficulty; his usual amount of beverage was stopped, and he was then seized with some kind of delirium, or maniacal affection, which he represented to have quite bewildered him, and given him a tendency to run headlong straightforward as fast as his breath would permit; and his own account was, that he spent several days running or walking in great haste, and taking refuge at night in some out-house, without sufficient covering, and with very little nourishment. It must be remembered, however, that this was only his own account, when it is quite certain that his mind was confused; and much credit, therefore, is not to be attached either to the amount of exertion he used, or the number of days in which he was thus affected.

When he came under our notice, he presented a state of considerable exhaustion, with fever, great heat of skin, shivering, a very rapid but feeble pulse, with signs indicating the presence of pneumonia affecting both lungs. I do not enter into the details of the symptoms, because we have not time, but they are fully described in the report in the hospital book, and you will see that we had not the opportunity of determining the state of the urine, because at that time none was passed. The presence of the pneumonia led me to prescribe bloodletting as far as it could be borne; this was only to the extent of twelve ounces, after which he became extremely faint: a kind of reaction afterwards took place, he became furious in the evening, and died in the night in a state of great exhaustion after violent excitement and delirium. The following is a summary of the chief appearances after death.

Nearly the whole of the right lung was inflamed, in a state rapidly advancing towards hepatization, and the left lung was affected considerably in the same way. There were several old tuberculous lesions at the upper part of both lungs, and at the apex of the left, a cavity of the size of a hazel-nut. There were hæmorrhagic spots in several parts of the lungs, shewing not only inflammatory engorgement, but extensive extrava-

sation of the blood from the vessels. The kidneys were found diseased, being affected with one of the forms of granular degeneration. We found enough urine in the bladder to enable us to detect albumen, and that, taken together with the condition of the kidneys, left no doubt that this man had been the subject of disease previously, and that pneumonia had supervened; probably excited by the excessive exertion and exposure to cold to which he had been subjected in the circumstances just alluded to.

The next case is that of Joseph Mayhew, who was brought in with the usual symptoms of delirium tremens. He also, it appears, had been an habitual drunkard from his youth, indulging very freely in intoxicating liquors, and from his wife's account, who applied to me for a letter of admission, I learnt that he was scarcely ever sober. When I made inquiries on the matter she shook her head, and therefore the account given in the book as derived from his own statement, and which is more moderate, cannot be so fully trusted. I understood from the gentleman that attended him before I saw him that he had had several attacks of delirium tremens before, but his inveterate habits of intoxication had not been cured; consequently the disease recurred. When he was brought into the house there was nothing to enable us to ascertain to a certainty that this was more than an aggravated form of delirium tremens. I do not enter into the details of that disease, as I have not time to do so, but it exhibited all the bodily and mental phenomena which are fully and accurately described in the report-book, and which correspond very exactly with the usual description of delirium tremens. In the symptoms there given, you will see a sufficient distinction between this disease, and effections which in other respects approximate to it in character, namely, phrenitis and typhoid fever. The only exception to that remark which I would make, is, that in the violence of the fits of delirium the patient was more uncontrollable than is usual. We commonly find that in delirium tremens there is a disposition to get up, to go about some urgent important business in a great hurry, agitation of manner, and so on; but there is enough reason left to render the individual tractable; he offers little or no resistance to any entreaty or coercion that may be addressed to or put upon him. It was not so here; he resisted violently, and it was necessary to put on him a straight-jacket on the night he was brought in; he was in a state of the most violent excitement, and so exhausted by it, that he could not swallow, and died shortly after. I have heard a practitioner of great experience remark, that he never knew a case of delirium tremens in which a straight-jacket was

required, and the patient recovered. I cannot say that that exactly accords with my own observation; you will find cases in the practice of this hospital where the reverse took place. But I believe that it shows something more than delirium tremens, than the mere morbid excitement occurring from the influence of liquor, and which is lower than maniacal or phrenitic excitement. In this case there was something which indicated more than delirium tremens. After death we found the cause, but before death we could only speculate about it.

With regard to treatment—when I saw him, there was not that extreme state of exhaustion or excitement which warranted the use of any very active measures either of a quieting or of a stimulating and supporting kind; and we must ascribe the death in some measure, I believe, to the violence of the excitement under the coercion that was used—not that the coercion was not necessary—it was so fully, but the strength of his body, and his vital powers, were unable to survive the violence of his efforts against it.

On examination after death the brain was found in a disordered state, but one not at all characteristic of inflammatory action—there was rather a deficiency than otherwise of the red points usually seen. When we exposed the membranes and substance of the brain, some vessels were found congested, but none of them exhibited that fine vascularity which denotes inflammation. There was a large quantity of serum throughout the brain; on the surface there were about three ounces, and in the ventricles nearly the same quantity. What was very remarkable was the peculiarly humid state of the whole brain. It was also softer than usual; not that softening commonly called *ramollissement*, arising from local causes, but the whole cerebral mass was in a generally softened state. As there was this increased quantity of liquid within the cavity of the skull, and the brain was soft, it would at once suggest to us that the cerebral substance must have been diminished in quantity; that the serum was there at the expense of the cerebral texture. On extending our observations to the spinal cord, where it goes through the foramen magnum, it was obvious that the upper part of the cord did not above half fill it; so great was the space, that I could introduce my finger down the vertebral canal, so small appeared to be the medullary substance in proportion to the canal in which it lay. This points out the atrophied state of the brain; and there was a phenomenon which I should have mentioned in the history, which corresponds with this condition of the brain, and may be in some degree explained by it, namely, a remarkable defect of the sensibility of this patient's body. There was a

certain degree of injury to the sensorial faculties; he could, however, answer questions and discern objects around him, but when he was tested as to the sensibility of the limbs and body, it was found that he could scarcely feel at all. You had to pinch him very hard before he manifested any indication of feeling, and it was a matter of some doubt whether he did feel at all; I believe that he did feel, but only in an obscure way. Yet there was no paralysis of motion; he could move his limbs with sufficient activity. That the power of motion was not materially impaired is likewise to be proved by the fact that one kind of excitability does not appear to have been impaired. Although he could bear *pinching* without a murmur, yet on *tickling* the soles of his feet he declared that he felt it, and it excited the movement of his legs, as if he felt it very intensely. One cannot say how much was owing to voluntary power, or how much to the reflex motory action, because he was conscious of some sensation; and it is only where sensation is abolished, and the tickling excites the reflex motion, that we judge that it depends on that function alone. We may, as I have said, account for the absence of sensibility from the very atrophied state of the brain, and upper part of the spinal cord.

I do not know that this case throws much light on the state of the brain in delirium tremens; but it corresponds very much with the notions I have entertained on that disease, namely, that it depends on an undue excitement of the nervous function, and the sensorial function particularly; but without permanently increased vascular action, or anything approaching to inflammation. In some cases the excitement may lead to inflammation; it may be complicated with inflammation, but it is not essentially so. This excitement, if carried on long, leads to exhaustion, not only of function, but of structure also: we may illustrate this by the analogy of muscle. It is well known that continued exercise in a muscle, if it be alternated with rest, leads to an enlargement, an increase of function, increased strength, increased structure, growth and development. But if it be not alternated with rest, that increased exertion leads to atrophy. So, I believe, it is with regard to cerebral excitement: if excitement of the brain is continued so long, so intensely, as to supersede the alternation of natural rest, then it leads to exhaustion of the function, and ultimately to wasting of the structure. In this instance we had a proof of both results. On examining the kidneys there was granular degeneration, and a little urine in the blood, enough to exhibit the appearance of albumen. I shall revert to this, and other points of this case, by and by.

The next case that I have on the list is that of Matilda Martin, which happened within the last month. It was the case of a woman who was brought in, in a dying state, in a fit of apoplexy. She had been ailing for a couple of years past, having been plethoric and robust before, but she had not had illness enough to prevent her following her usual occupation. She had risen that morning, was about to light the fire, and was seized with giddiness; that giddiness increased, and led to apoplexy. I must refer to the report for a graphic description of the manner in which it occurred. The insensibility became complete, but the loss of power obviously extended more on the left side than on the right. The case was one of the thundering kind of apoplexy, and I came to the conclusion from the description of the symptoms, (for I did not see her before death) that it was a case of hæmorrhagic apoplexy.

On opening the skull there was found hæmorrhage to an enormous amount, breaking, and forming a very large clot in the substance of the brain, over the whole extent of the right ventricle, and reaching into and quite filling both lateral ventricles; the septum lucidum was completely broken down, and the large clot communicated through the fourth ventricle even to the base of the brain and cerebellum, so that the whole of the central portion of the brain seemed to be occupied by this enormous clot of blood, which was so much matter added to the encephalon: hence the brain seemed too large for the skull, and projected a great deal when the cranium was removed. There was a great deal of blood also in the vessels of the dura mater. The blood-vessels of the brain generally were remarkably thin.

This you would say was a mere case of apoplexy; and without further examination one might have supposed that it had nothing to do with albuminuria. This brings me to notice what I have frequently mentioned to you, that in the majority of cases brought in with this thundering apoplexy, where a large quantity of blood is effused on the brain, the affection is connected with granular degeneration of the kidneys; so, in this case, we find "the left kidney was very small and atrophied, and weighed only two ounces. The capsule was strongly adherent to the texture, and on being torn off drew many grains of cortical texture with it, interspersed with larger masses of opaque deposit. There was much fat in the pelvis and calyces of the kidney, and its cortical substance was very much reduced."

Observe this: the kidneys were reduced in size, the weight of the left kidney being only two ounces, less than half the usual weight; and a large portion of this consisted of the

tat in its pelvis and calices, and of the interstitial deposit in the cortical substance; showing that a very small proportion of the proper secreting texture of the kidney was left. "The right kidney was larger than usual, weighing 7 oz. 6 drachms. Its capsule did not adhere; but the organ was much congested and coarse in texture, particularly at its lower part, and is mottled with a whitish deposit of soft consistence." These are the appearances of an early state of granular deposit and degeneration; that is to say, besides the congestion and coarse appearance of the elementary textures, there were spots of additional albuminous matter which could be easily detached by the point of the knife, and on examination we found it to be an interstitial deposit, and not part of the natural structure.

After this we anxiously inquired what was the state of the urine in the bladder; a sufficiency was found, and being tested by heat and nitric acid, it yielded a very copious precipitate of albumen.

It is very remarkable how such cases of granular degeneration of the kidney keep on stealthily gaining ground, not producing prominent disease; only impairing somewhat the general health; and the patient may complain of various and wandering pains and aches of an anomalous character, with outward marks of deterioration of health, such as loss of colour, flesh, and strength, a strong depression of spirits, but yet not complaining of any one determinate disease. Persons may go on in this way for a long time, until suddenly seized with something more serious supervening upon it, as was the case in another instance to which I have alluded; and hæmorrhagic apoplexy is one of the common modes in which this disease may terminate.

The next case is that of Hannah Gough, who in the first instance exhibited symptoms of phthisis. Her history was that of long standing cough, gradual loss of flesh and strength, breath becoming shorter, falling away in flesh, colour, and in health generally, for some time previously,—symptoms of pulmonic disease, but of a chronic character. She was, however, seized with acute symptoms, and was brought to the hospital, while labouring under them: we had no difficulty in referring the inflammation, though affecting the bronchial tubes to some degree, to the substance of the lungs. We found that there was dulness on percussion in the lower part of both lungs, chiefly in the right, with crepitation throughout the substance of the lungs. That rapidly went on to produce the signs of consolidation, the tubular sounds being very loud. At the commencement of seeing her, before the disease had invaded the whole lung, I formed my diagnosis as to the partial consolidation

of the upper part of the lung, from the circumscribed dulness and from the peculiar whiffing nature of the respiration which I found there. I cannot dwell upon the symptoms, but besides the usual sign of difficulting of breathing connected with the lungs, and the loss of flesh and strength from the previously existing tubercles, her head was a good deal affected; it was in a confused stupid state, not amounting to coma, but she was incoherent, and showed a degree of imbecility, a want of power of mind, which indicated something more than an affection of the respiratory organs. Her urine was found to be albuminous, and it was so until the time of her death.

On examining the body the lesions were found exactly as anticipated; there were signs of chronic consolidation at the upper part of both lungs, and that consolidation was obviously in a comparatively quiescent state. It was a dark tough consolidation, exhibiting very little appearance of yellow tubercle, and none of softening. The lung in these parts was much shrunk, and must have long afforded very considerable obstruction to the passage of both blood and air. The lower part of both lungs was extensively inflamed, but the right lung most so. There was the slightest trace of coagulable lymph on the surface of both lungs; enough to show that the inflammatory affection had extended to the pleura.

The account given of the post-mortem examination is so succinct, that I shall save time by reading it. "There were adhesions at the apex of the left lung, and in the same part were some large clusters of grey tough consolidations; and some small masses of the same kind near the root of the lung. The lower half of this lung was in an engorged and softened state, between engorgement and hepatization; almost sinking in water. At the apex of the right lung was old consolidation with puckering, and something like the remains of a cavity. A little yellow tuberculous matter could be detected there; but the chief mass is composed of a kind of dwindled grey tubercle, as if partially absorbed. The two lower thirds of the lung were in a state of soft hepatization, when squeezed exuding a red jelly-like matter, and sinking in water. In the vicinity of the consolidations at the apex of the lungs, portions of the tissue were emphysematous.

"Some opaque patches on the outside of the heart; no other disease. Weight 8½ oz.

"Patches of opaque contractile deposit on both surfaces of the liver, and some appearance of interstitial deposit. Weight 2lb. 12 oz.

"Kidneys rough and granular on surface; capsule draws up many grains; texture coarse, and of a dirty brick colour. Weight

of each kidney about five ounces." They were larger than usual, but not softer. This was another case of granular degeneration.

The last case to be noticed is that of Amelia Acors, respecting which I have formerly made some remarks, and I need not dwell upon it. It was one of *morbus cordis*, with albumen in the urine at the time of her admission into the hospital; and the albuminuria was a symptom which led me to form an unfavourable prognosis with regard to the issue of the case. All cases of *morbus cordis* to the extent in which it occurred in this patient are dangerous; but not so much so as is commonly supposed. *Morbus cordis* in by far the greater number of instances becomes complicated with other affections; and as a general rule, singly it does not destroy the patient, though it may do so in extreme cases. It may, as a chronic disease, attain an enormous amount without destroying life, and indeed the tendency to produce that result is usually proportioned to the extent to which it interferes with the function and structure of other organs, more particularly of the lungs, the liver, and the kidneys, and the latter most of all. Now this fact is the more important, because it shows that by removing or preventing these complications, we may avert the fatal termination for a considerable time. The ultimate result of heart-disease, where it increases very much, is to induce albuminuria. At first the albuminuria is a mere temporary or functional state, and it may be said to be induced by a great amount of congestion during the severe embarrassment of the circulation, caused by a transient aggravation of the heart disease, and this may be carried off under proper treatment. It is where the urine becomes permanently and increasingly albuminous, and where with the presence of albumen there is a deficiency of the natural constituents of the urine, so that the excretory function of the gland is reduced, that the approach of the fatal termination of the heart disease is announced. It was from the fact that the urine was albuminous, and remained constantly so, that I formed an unfavourable opinion of the case. Although the heart disease was less in amount than in some other cases which we have seen here, and which have gone out of the hospital relieved for a time, yet, having this complication, we had no hope that she would be materially relieved; and the result justified this prognosis.

On the post-mortem examination there were found very various lesions just as had been anticipated, and a very interesting account of them has been drawn up by Mr. Henry. I refer you to it as an excellent specimen of this kind of description, both in its succinctness and in its accuracy of expression. It scarcely requires any altera-

tion on my part; but I have not time to read it all.

"The pericardium was very firmly adherent to the heart at every part, and to a large surface of the front walls of the chest. The lungs were pushed aside by the enlarged heart. The liver descended very nearly to the umbilicus.

"The right lung presented some opaque false membrane on the lower and middle lobes. It was moderately congested, but crepitant throughout, and felt of firmer texture than usual (hypertrophy). A well-defined apoplectic clot at the lateral portion of the lower lobe. Weight $13\frac{1}{2}$ oz. Left lung small, weighing $9\frac{3}{4}$ oz. Lower lobe only moderately congested. An apoplectic clot in the lower part, firm, and very dark in colour, mottled with patches of paler opaque matter.

"Aortic valves were found to resist passage of a strong current of water; they were small, but the calibre of the aorta also was small; some small vegetations attached to the corpora arantii, and adjoining free margin of the valves. Both laminae of mitral valve considerably thickened and shortened, especially the posterior lamina, which was puckered into a mere ridge on the auriculo-ventricular ring. The tendinous cords were also shortened, and some of them were adherent. The valves on the right side were healthy." The heart was itself very much enlarged, weighing sixteen ounces and a half. That is a large heart; not so large, however, as we often find this organ; but then there were two circumstances which aggravated this case—the albuminuria, and the close adhesion of the pericardium to the heart. The latter circumstance tends not only to aggravate the symptoms of heart disease, and embarrass the circulation, but also to increase the physical signs, by keeping the heart in closer contact with the walls of the chest. There was always very strong and extended pulsation; the whole front of the heart adhering to the pericardium and the pericardium to the ribs, without the intervention of any lung.

The kidneys presented an interesting state, and I believe that their disease was consecutive to disease of the heart. Many of you know my arguments on that head.

"The right kidney was mottled, but not in a high degree. The capsule raised granules only in parts. Cortical substance paler than usual. Weight $4\frac{3}{4}$ oz.

"The left kidney was remarkably firm in texture, and the cortical substance was paler than that of the right, weight $4\frac{3}{4}$ oz. Both kidneys exhibited the appearance of cacoplastic deposit, and also a considerable amount of congestion.

The liver also was much congested; it

was of a dark red colour; and on cutting into it the branches of the hepatic vein were so large that many of them admitted the tip of my finger and were full of blood. There was a considerable amount of pale deposit in the liver, mottling its structure, and this was observed to be accumulated especially around the portal veins. Some parts of the pale substance were stained with bile, and these masses were interspersed with portions of the ordinary texture of the liver. "This organ weighed two pounds, two ounces and a half, and when closely examined, presented numberless orange-coloured points, smaller than the acini, but still resembling them in form. Between and around these the tissue was of a fawn colour, and less opaque. Under the microscope the fawn-coloured deposit was found to be composed of numerous nucleated cells. The smaller central points contained much fewer cells, and more filamentous tissue."

This is one of the modifications of cacoplastic deposit occurring in the liver; it is the same as that which takes place in the kidneys, but exhibits some peculiarities connected with the difference in the natural structure of the two organs; the matter secreted from the bile giving it a peculiar tinge in the liver, and there is often a predominance of fatty matter giving it an opaque appearance.

Now it cannot but strike us as very remarkable that we should have so many of these cases occurring nearly at the same time; and I may mention that, in addition to these fatal cases, we have also had a larger number than usual of milder cases of albuminuria, which have not proved fatal. Why is it that these cases occur so much in groups? It must be from some general cause, simultaneously affecting many individuals in different situations; and we have no other conclusion to come to, but that it arises from changes in the weather, that are common to all individuals in these different situations. We know as a matter of fact that sudden changes of weather are peculiarly apt to develop this disease either in the first instance as a new affection, or to aggravate it where it had existed before—chronic cases become aggravated into acute attacks. Hence cases of albuminuria are met with very commonly in the spring and autumn, at which times of the year changes of weather are sudden and extreme. At the end of March and the beginning of April this year the changes were remarkable; the heat of the sun was considerable during the day, and at night the wind was bleak, and the cold most intense. To this cause I have no hesitation in referring the prevalence of this and some other diseases.

I might point out a chemical mode in

which sudden changes of temperature may develop disease of the kidneys, more particularly inasmuch as the kidneys appear to act vicariously with the skin and the liver, in the process of the purification of the blood. But we have not time to dwell on this dubious point of pathology. Changes of temperature, sudden transitions from cold to warm, from warm to cold, operate mainly by affecting the general circulation, by causing a great internal congestion, driving the blood from the surface, and thus in an undue degree taxing weak organs. There are a number of facts which bear on this point, in connexion with albuminuria as a temporary disease, or a permanent affection arising from congestion of the kidneys. For some of these I must refer you to my work on the Principles of Medicine, in which I have endeavoured to show that congestion is adequate to produce albuminuria, and ultimately granular or cacoplastic degeneration of the kidney. There is congestion in the first instance, and impaired power in the organs as the result of that congestion; the congestion continuing, an interstitial deposit takes place, which alters the structure; and this more when there is present a cacoplastic state of the blood.

Assuming that this structural condition of the kidney, and the impaired excretion arising from it, are present, we have next to inquire, how it is that it produces such different results in different cases. We have in one instance, together, with albuminuria, and as it would seem resulting from it, a case of thundering apoplexy. In another case we have an affection of the head producing that peculiar delirium which was exhibited in the case of Crouch, leading him to go by a headlong impulse, using violent exertion, and then, either from the violence of the exertion, or from the exposure to which he was subjected, experiencing a severe attack of inflammation of the lungs. In the case of Gough there was inflammation of the lungs without such violence. In another case there was delirium tremens and albuminuria aggravating it; and in the last case it occurred as a sequel to aggravated disease of the heart.

In order to account for this we must consider the co-operation of other causes. In the case of Martin, who died of apoplexy, her complaints came on at a period when she had much trouble of mind. There is nothing stated about her habits, but most probably they were intemperate; and if so, that would be an additional cause. But mental trouble caused her head to suffer, and that may have been the reason why, when there was disease of the kidney gradually advancing and injuring various functions, the head should especially suffer. One of the results of imperfect excretion of urine

is to impair the nutritive function; this patient had lately lost flesh and strength, and although she had no distinct ailment sufficient to lay her up, yet, on examining the body, we found various proofs of a low state of nutrition: that in the brain the vessels were remarkably thin, and this possibly was connected with the rupture and hæmorrhages which had occurred. As there were symptoms of affection of the head before the attack, it is very possible that some congestion pre-existed; there may even have been some softening of the substance of the brain besides. In most cases that I have seen, where granular degeneration of the kidney has been followed by hæmorrhagic apoplexy, the coats of the arteries have been atheromatous, that degeneration of structure which is something like opaque tubercle in character; but there was no such deposit in the present instance.

In the case of Crouch it might become a question, what led the symptoms to take the peculiar turn they did? Supposing his account at all correct, the violent exertions which he used, under the influence of delirium, and the exposure to cold in an out-house, might be a sufficient cause. But, besides the recent inflammation, there was an appearance of grey tubercles in both lungs, and a cavity in each lung. I take this opportunity of begging your attention to that fact. Here was a stout, athletic young man, whose appearance did not indicate any symptoms of phthisis, yet there were several tubercles, and even a small cavity in his lungs; and, although these may not have been directly concerned in his death, yet I have no doubt that they tended to promote the production of pneumonia, which proved fatal to him.

On the case of Mayhew I need not dwell. One sees why his brain particularly suffered; and why he—having been dosing himself perpetually with alcoholic poison—should have been brought under the influence of delirium tremens. But we can see in the additional disease—the granular degeneration of the kidneys, a reason why the cerebral excitement causing delirium tremens should have been of a more aggravated character—why he was unable to rally from it, in consequence of the severity of the attack, and the want of strength to throw off the products of disease. I think we may say that he perished from the violence of two kinds of poison—the alcoholic, and the excrementitious. Other interesting facts might be dwelt upon here; but time will not allow.

Lastly, the case of Amelia Acors needs little further remark. There was good reason to believe, seeing that the affection of the kidney was not far advanced, and had not attained anything like the same height as the disease of the heart, that it was

secondary, that it followed the obstructive disease of the heart; that in proportion as the disease of the heart became aggravated, the structures as well as the functions became affected; and hence occurred the dropsy of which she suffered to so great a degree, and which continued to increase until acupuncture was used a fortnight before her death.

There are a few remarkable varieties of granular degeneration to be met with in this little batch of cases, though in all of them the kidneys were diseased, in all of them the urine was albuminous, and did not present its proper urinous character; it was below the healthy specific gravity or deficient in quantity. The presence of albumen indicated not merely the presence of foreign matter which ought not to be there, but the absence of the proper matter of urine which ought to have been there. Upon looking over the cases recorded in these books you will find other varieties, and if we were to split them up into several divisions and subdivisions, the different cases of granular and cacoplastic degeneration, in conformity with each of these varieties, we should find the divisions endless. But in all these matters I wish you to take hold of the first principle, the key which will unlock them all, and not be too confusedly occupied by details. The matter effused in each of these cases differs. There is deposit of a more or less plastic kind; and it varies also in quantity. In one instance it may be more plastic and abundant, and the result of that is hypertrophy, enlargement, leading to a considerable increase of density in the structure of the kidney; and I have met with several cases of that kind. In other instances it is less plastic. When first thrown out it is soft, causing an enlargement of the natural cortical structure, a softening of its substance, a coarseness in its texture which is very remarkable; but as time goes on, and the disease becomes chronic, it takes different turns according to the condition of the plasma. In common cases it becomes granular, and we see the surface of the kidney is rendered rough from the irregular contraction of the deposit. In other instances it is thrown out in considerable quantity, and appears mottled, yet it does not become granular. We had an instance of this kind in the case of Mayhew. His kidneys presented cacoplastic degeneration, not granular on the surface as it was in the other cases. This, I believe, is connected with the fact that there is mere fatty matter in this kind of cacoplastic deposit. Dr. Quain examined some of the matter found in the cortical portion of Mayhew's kidneys, and it presented an unusual quantity of opaque globules, which are in fact fatty globules, and demonstrate that the cacoplastic deposit was here more fatty than usual.

I believe that when this deposit abounds in fat it is capable of retaining a comparatively uncontracted smooth state; in other cases, where deficient in fat, it leads to contraction, and to induce atrophy in the contiguous parts.

In several instances you will observe that the liver exhibited the same change, though in a much less degree, as the kidneys; but still enough to identify the two. In Mayhew the liver was much diseased, and had that opaque, muddy, greasy kind of cacoplastic deposit to which I have just alluded. The same thing was observed in some degree in Crouch.

But, besides in the kidneys and liver, we find other proofs of the cacoplastic condition of the system. In three out of the five cases there were several tubercles in the lungs. In Gough they were old, of a very dark colour, and were apparently shrunk away as if some portion of the tuberculous matter had been removed by absorption, or otherwise diminished by shrinking. In Acors there were also tubercles, less in extent, but the tuberculous character of them was more obvious than in the last case, from the fact of there being some yellow tuberculous matter, and there being a cavity present in one portion of the tuberculous mass. In Martin, of whom we had no history of her having had pulmonary symptoms, there were found tuberculous consolidations at the apex of one or both lungs. There are other proofs of this cacoplastic condition which commonly, or I may say universally, is associated with granular degeneration of the kidney, in the soft and atrophied state of the brain and spinal cord, in the case of Mayhew. No doubt the exhausting influence of the continued excitement of a stimulant tended in some measure to produce that, but we must regard as a coincident cause the influence of the granular degeneration of the kidney leaving excrementitious matter, which would impair the nutritive quality of the blood. In the case of Martin we had the same proof of this condition in the thinness of the vessels, and their softened state, which must have preceded the hemorrhage. We had another evidence of this bad condition in the nutritive function, in the asthenic form of inflammation, which had been produced both in Gough and Crouch. There was hepatisation, but it was not of that solid, firm, compact character which we meet with in healthy persons. It was a soft, more opaque, extremely fragile species of lymph, appearing to have little cohesion, little plastic power among the particles. You are aware that I have insisted upon the fact that this deposit is little under the influence of absorption. As it is difficult of organisation so it is difficult of absorption, and constitutes a bad, because a

persistent product of inflammation, closely allied in character to tubercle.

Finally, I may refer to the proofs of 'a poison in the system, which may be said to have been exhibited in all these different cases, in the prevalence of nervous symptoms, manifest by some disorder of the sensorial or sensitive function. There was also a great degree of asthenia, marked by great weakness of pulse, extreme prostration of strength, in the case of Gough and Crouch, so that they were unable to bear any such depletion as might otherwise have been necessary to subdue the inflammation. All this points out the pathology of the disease, which is most important to notice, not only with regard to the prognosis to be formed in, but also in relation to the application of remedies.

Next week I will direct your attention to more tractable cases of Albuminuria, some of which are now in the house, and to the treatment by which this disease may be combated.

ON THE DECAY OF THE MEMORY.

In persons of sound mind, as well as in maniacs, the memory is the first power which decays; and there is something remarkable in the manner of its decline. The transactions of the latter part of life are feebly recollected, whilst the scenes of youth and of manhood remain more strongly impressed. When I have listened to the conversations of old incurable patients, the topic has generally turned upon the transactions of early days; and on the circumstances of that period of life, they have frequently spoken with tolerable correctness. In many cases, where the mind has been injured by intemperance, the same withering of the recollection may be observed. It may perhaps arise from the mind at an early period of life being most susceptible and retentive of impressions, and from a greater disposition to be pleased with the objects which are presented; whereas the cold caution and fastidiousness with which age surveys the prospects of life, joined to the dulness of the senses, and the slight curiosity which prevails, will in some degree explain the difficulty of recalling the history of later transactions.—*Hastam.*

[It is often a remarkable feature of delirium in advanced age, that the images of persons long since dead, and the recollection of whom had been for years prior to the attack completely blotted from the mind, are called up with a vividness scarcely short of the reality. We knew an instance where a patient thus recalled the features, dress, and language of a friend, whom he had last seen in India forty years before, and of whom, for years previously to the attack, he had lost all recollection.]

CLINICAL REMARKS

ON

Cases treated in the Westminster Hospital.

BY BENJAMIN PHILLIPS, F.R.S.

Assistant Surgeon.

Emphysema.

JOHN LUCAS, æt. 70, was admitted into Northumberland Ward, April 1st, after an accident.

While assisting in fixing a sign-board, he fell from the steps on which he was standing, and struck his back against the curb-stone. He complained of much pain when he was brought to the hospital.

Upon examination, it was discovered that there was fracture of the sixth and seventh ribs near the angles.

Over the fracture was a crackling tumor, about the size of an egg. The pulse was weak, the surface was cold, and the breathing was much embarrassed.

11 P.M.—Pulse hard and full—100; the breathing hurried and painful, and on one occasion there was a slight streaking of blood in the expectoration. The whole of the trunk of the body and the left side of the face was now emphysematous.

To have Haust. Cath. ʒij. statim.

2nd, 10 A.M.—Pulse softer, 100; bowels open once.

℞ Haust. Cath.

3 P.M.—He was seen by Mr. Phillips. The emphysema was then almost universal under the skin, but there was no indication that any air had escaped into the cavity of the pleura. Respiration hurried and painful; pulse 86. There was fixed acute pain near the seat of injury, and much cough.

To take Hyd. Chlor. gr. ij.; Opii, gr. ss. bis die.

It has become necessary to remove a flannel roller which had been rather too highly applied around the chest, and was interfering with respiration.

3d.—Still complains of a good deal of pain, and his cough is troublesome.

Emp. Lyttæ lateri.

4th.—It was necessary to apply the bandage again. Emphysema abated; respiration easier.

5th.—Slight tenderness of the gums; pain in the side much relieved; respiration easy; emphysematous crackling fast disappearing.

To discontinue Hyd. Chlor.

6th.—Better. From this time all went on well, and he was discharged cured on the 22d.

REMARKS.—This case of traumatic emphysema was unlike those which usually occur; the chest was comparatively free from trouble, but the cellular tissue over a great part of the body was greatly distended. The occurrence of fractured ribs with external emphysema, while the cavity of the pleura is apparently free from a similar effusion, is uncommon, but still the present case is a proof that it may happen, and I apprehend it may be thus accounted for. Old adhesions may exist at the injured point, and, under those circumstances, the air can more easily find its way into the cellular tissue than through the false membrane into the cavity of the pleura.

Fracture of the Humerus under peculiar circumstances.

A. D., æt. 37, a French-polisher, was admitted into Northumberland Ward, with fracture of the lower third of the humerus. The history of the case is as follows. Last March twelvemonth he was seized with severe pain in both arms, occurring during the night. It left the right arm in a week from the commencement of the attack, but has continued in the left ever since, varying in severity, and being most severe during the night. No other parts of the body have been affected with similar pains during the time.

In July of last year he was sent to the sea-side, and ordered to bathe. While there the general health improved very much, and he returned home nearly free from pain. He had not been at home more than a fortnight before the pains re-appeared, but he continued to work up to two months, since when the suffering became so severe as to disable him from following his usual occupation. He then applied at a Dispensary, where he was treated for rheumatism, but without any sensible relief. Last Friday night pain became more severe, and while pulling a chair towards him, he felt as if his arm were struck with a stick, and soon afterwards he perceived that it began to swell.

When he presented himself at the hospital four days had passed since he felt the arm injured. There was some swelling and perfect mobility at the part.

The arm was at once placed in splints, and well secured, so as to prevent all motion at the injured point. He was ordered a liberal diet, and to take—

Potass. lod. gr. iv.; Decoct. Sarsæ Co. ʒiv. ter die.

This system was well followed for four weeks with relief to the pain. The splints were then removed, and the limb was examined, but no union had taken place. The same system was pursued for another fortnight, and it was again examined at the ex-

piration of that time, when it was gratifying to find that a firm consolidation of the fractured bone had taken place, though the callus was still very irregular.

REMARKS.—In the preceding case I apprehend that the humerus had been rendered fragile by long continued rheumatic inflammation, and that it was then ready to give way under a small force directly applied. There was no reason to think that the pain which had existed so long in the left arm was caused by any malignant disease, and what renders it probable is the total cessation of pain for some weeks past.

The occurrence of such fragility at such a period of life is certainly uncommon, especially in a man who seemed quite free from other disease. The patient did not deny that he had had syphilis, but it had happened so many years ago, and had left no trace of its present existence, that there was no reason to refer his condition to syphilitic contamination. Taking into account all the facts, I think we are justified in regarding the case as one of fragility of the humerus, resulting from the long-continued action of rheumatism at the part; and it will be interesting to observe, whether, if there be any return of rheumatism, the callus will give way.

A Case of Strangulated Hernia in the inguinal canal.

Clement Hayhow, æt. 22, a carter, was admitted into Westminster Hospital, April 24th, with an inconsiderable fulness in the right inguinal region. There was constant sickness, with a very distressed countenance, but the pulse and the tongue had undergone no change from the state of health.

He states that he was ruptured six or seven years ago, while leaning over an iron railing, and lifting a weight, and that for a time he wore a truss, but that for the last six months he had laid it aside. This morning, during a fit of coughing, he felt a new protrusion, and was immediately sick.

Upon a careful examination of the part, all that was evident was a certain amount of fulness of the upper part of the inguinal canal; the finger could be readily passed through the external ring, and for some distance along the inguinal canal, but not quite to the point where the thickening or tumor existed. While the finger was in that situation he was desired to cough, when a distinct protrusion against the finger was felt: this was repeated several times, and felt by others.

Immediately on admission he was put in a warm bath, had ice applied to the part, and an enema was administered.

To have Hyd. Chlor. gr. v.; Ol. Ricini, ʒvj.; Tinct. Sennæ Co. ʒij. after four ours.

25th.—Some scybale were brought away with injection. Sickness continues, matter thrown up greenish and transparent.

2 P.M.—The operation was determined on. Mr. Phillips' incision extended from a little above the inner ring to a little below the external ring; and certainly at that time there was nothing to make it probable that there was much intestine in the canal. When the incision had passed through the aponeurosis of the external abdominal muscle, a tumor of the size of a hen's egg became at once apparent. The sac was found perfectly flaccid, and could be drawn down much below the gut; there was no fluid in it, but when the inner ring was enlarged, three or four ounces of fluid escaped from the abdomen. The intestine was dark in colour, a good deal congested, but had not lost its polish.

To be left alone till morning, when he may have, if the bowels have not been opened, a simple injection.

26th.—Pulse hard and wiry, 80; skin dry; tongue loaded; a good deal of thirst; pain on pressure over much of the abdomen. Bowels have been opened twice freely.

V. S. ad ʒviij.; Hyd. Chlor. gr. ij.; P. Jacobi, ver. gr. iij. statim. Mist. Ammon. Acet. ʒta horis.

10 P.M.—Blood much buffed; pulse softer; pain much abated.

Rep. Pulvis.

27th.—Much better in all respects. Bowels not open.

Ol. Ricini, ʒss. statim.

2 P.M.—Bowels open twice since morning; tongue moist; abdominal tenderness still further diminished; countenance more free from anxiety; skin moist.

Rep. Jacobi.

28th.—Going on well; has some cough, which is troublesome.

From this time he went on well. A small abscess formed in the scrotum, which was punctured. It was found that a sinus extended from the now nearly cicatrised wound to the scrotum. A few threads were passed along, and it quietly healed.

REMARKS.—This case was interesting in an important feature; it exhibited the necessity for acting upon the history, even when the signs are not well marked.

In this case all that was apparent was some fulness of the inguinal canal—it might be of the cord, might have resulted from the pressure of a truss; but then there were symptoms of strangulation to justify operation, and it was undertaken. On the other

hand, as against the opinion that the fulness was constituted by a *strangulated* hernial tumor, was the fact, that when the finger was passed up into the inguinal canal, which could easily be done, and the patient coughed, a most distinct and decided impulse was communicated to the finger; and to this the particular attention of several persons was directed.

Still, although the evidence of a hernial tumor was thus inconclusive, the swelling being so ill defined as to leave a doubt whether it was intestine, and an impulse being so obvious upon coughing as to lead to the idea that there could be no strangulation there, the operation was decided on as the proper course to take. It was, therefore, satisfactory to observe, upon cutting through the aponeurosis of the external abdominal muscle, a large tumor of the size of a hen's egg, immediately presented to view. The sac was very loose, as it were shrivelled up in folds around the gut, and it could be extended as much as half an inch downwards, showing that the intestine had been lower, and that when it had retreated the sac had not followed it, nor had it become obliterated.

DREAMING.

THE relation between dreaming and somnambulism is strikingly exhibited by the remarkable manner in which the current of dreams may be directed in certain individuals, by impressing their senses during sleep. An officer, engaged in the expedition to Louisburg, in 1758, was so peculiarly susceptible of such impressions, that he afforded his companions much amusement by the facility with which they could cause him to dream. Once they conducted him through a quarrel which ended in a duel; the pistol was placed in his hand, he fired, and was awakened by the report. They found him asleep on a locker, when they made him believe he had fallen overboard. They told him a shark was pursuing him, and entreated him to dive for his life, and he threw himself with great violence on the cabin floor. After the landing of the army at Louisburg, his friends found him one day asleep in his tent, and evidently much annoyed by the cannonading. They then made him believe he was engaged, when he expressed great fear, and a disposition to run away. They remonstrated, but increased his fears by imitating groans, and when he asked who was hit, they named his particular friends. At last they told him the man next him had fallen, when he sprang out of bed, rushed out of the tent, and ended his dream by falling over the tent ropes. He had no recollection of his dreams.—*Moore on the Power of the Soul over the Body.*

Original Communications.

ESSAY ON THE

COAGULATION OF THE VENOUS BLOOD IN CACHEXIA AND CHRONIC DISEASES.

The Continuation of the Essay on Phlegmatic alba dolens.

By E. BOUCHUT, D.M.P. &c.*

Translated for the London Medical Gazette,

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Physician to the Surrey Dispensary.

[Concluded from p. 368.]

PART II.

CHAPTER III.—Symptoms.

THIS obliteration of the veins is merely a complication of the disease in the course of which it occurs. Its symptoms are entirely independent of the original malady. Thus the serous infiltration of the limbs, in which the veins are obliterated, is rather the result of obstructed circulation than of debility induced by cancer or phthisis, &c. It is an active rather than a passive dropsy. The symptoms are all local; the complication has no injurious reaction on the constitution. They are modified by the seat of the coagulation, or the functions of the organ in which the venous obliteration occurs. The distinction as to symptoms between this coagulation in deep veins of the extremities and of the vena portæ or pulmonary artery, is too evident to need illustration. The obliteration of the veins of the extremities is the most general, if not constant, sign of the coagulation of the venous blood in cachexia, and it may, therefore, be taken as a type of the disease.

This obliteration, in a person affected with chronic disease, may be very easily recognised. The patient experiences in the arm or leg, generally in the calf, but sometimes in the thigh, a pain more or less acute, which is much increased by pressure. It is generally felt in the course of the vessels, and commences from the part where the coagulation has taken place. It is at times so violent that all pressure is insupportable, even the weight of the limb upon the bed causes intense suffering. This has been observed both

in the phlegmasia dolens of the puerperal state, and, as already mentioned, in cases of typhus fever.

Shortly after the attack of pain, or sometimes about the end of the first or second day, the limb becomes œdematous, generally in proportion to the extent of the obliteration, and the œdema is more marked where the more important veins become obstructed. It always exists when the deep veins are obstructed, and is much increased when the superficial veins are likewise involved. But when the latter are alone affected, there is less obstruction to the circulation, and œdema is absent. The vessels feel like slightly resisting cords formed by the gorged veins, and there is pain on pressure. In affection of the superficial veins, as of the saphena, this cord-like appearance is very manifest; but it is not observed, when the deep veins are affected, except where they may happen to approach the surface, as at the bend of arm or groin.

The skin is generally blanched as in phlegmasia dolens. But it is sometimes red, or, in the rare cases in which the deep and superficial veins are at the same time the seat of disease,—of a dark colour. The temperature is natural, the *sensibility* not altered, at least so far as can be judged from the excessive pain, which arises rather from disease of the deep, than of the superficial veins.

The fever, which is often present, does not result from the coagulation of the blood. It exists before this takes place, and it is not sensibly increased by its occurrence.

Such are the symptoms of this venous obliteration; they vary slightly in degree according to the extent of the alteration. They are in ordinary cases equally evident, and are common to the obliteration of the veins of the arms, legs, or neck.

The symptoms are, however, entirely different when the veins of the internal organs are affected. In the case of obliteration of the superior vena cava, which I have alluded to, the patient had intense dyspnœa, with œdema of the lungs, and extensive hydrothorax; the upper half of the body, head, and arms, were perfectly livid (*cyanoosis*), and the cellular tissue of these parts was anasarous. Obliteration of the pulmonary artery is characterised by dyspnœa, œdema of the lung, pulmonary apo-

plexy, and hæmoptysis—the last is the principal symptom. Obliteration of the vena portæ is manifested by peritoneal effusion; and obliteration of the mesenteric veins by congestion of the coats of the intestines, and bloody stools.

The symptoms resemble those which occur in puerperal women; the pathological change is the same, and the progress and termination are *almost identical*; but the causes are different: in one case the disease depends on the puerperal state, in the other on cachexia resulting from chronic disease.

It is unnecessary to specify the symptoms of the diseases in which this complication occurs; indeed, to do so, would oblige me to detail the symptoms of phthisis, cancer of the stomach, uterus, &c.—subjects which are foreign to my purpose.

CHAPTER IV.—*Progress and Termination.*

The connection which exists between chronic diseases and coagulation of the blood is invariably shown by the obliteration of the veins. There is some variation as to the seat of the obliteration. It is generally found in the veins of the lower, though occasionally in those of the upper extremity, as also of the neck and viscera. And as the difference of seat causes a difference of symptoms, the progress varies accordingly.

It occurs most commonly in the veins of one or both lower extremities. Pain more or less intense marks the origin of the disease, and distinguishes its seat; it appears suddenly in the calf, and extends in the course of the vessels to the thigh, or, on the contrary, from the thigh downwards, according to the course of the obliteration. In twenty-four or forty-eight hours the limb becomes œdematous, more especially around the ankles. These symptoms last for some days, and are then followed by some of the superficial veins becoming more prominent in consequence of the obstruction in the deep vessels. When the patient lives so long, the superficial veins become quite distinct, and the tenderness and œdema successively disappear.

The pain ceases about the twelfth or fifteenth day, but the œdema continues for at least from one to two months.

It disappears more rapidly according as the change in the vein has been slight, and as the superficial veins acquire the power of carrying on the collateral circulation. These phenomena are observed in either or both legs. Sometimes the coagulation takes place in each leg successively: again, the coagulation arising in both legs extends upwards to the pelvis, where the diseases meet; in other cases it arises in one leg, passes upwards into the pelvis, and downwards into the opposite leg. Similar phenomena are observed in venous coagulation of the upper extremities. In these cases time is necessary for the establishment of the collateral circulation. It is the same with regard to obliteration of the superior cava and veins of the viscera,—the attendant symptoms of which have been described in the last chapter.

Obliteration of the veins of the neck, allowing for the severe nature of the diseases in which this condition occurs, is attended by serious symptoms. It never terminates in suppuration. The absorption which accompanies ordinary phlebitis has never been here observed; and this circumstance creates a difference between the two diseases. When once the coagulation *is complete*, the clots undergo the changes already described; they become hard fibrinous cords, and are only prejudicial in so far as they cut off the circulation in the affected veins. If the patient's life be sufficiently protracted, the obliterated veins, as in phlegmasia alba dolens, might become permeable in different parts of their course. But this has never been observed in venous obliteration arising from chronic diseases.

CHAPTER V.—*Diagnosis.*

The diagnosis is contained in the following aphorisms. In the last stages of chronic disease, when there suddenly supervenes in an extremity a deep pain, shortly followed by œdema of the cellular tissue, the blood in the vein of that extremity has become coagulated.

Prognosis.—Under this head there are two distinct but very essential circumstances requiring notice. The first, which is the more simple, relates to the actual effect of the obliteration and its consequences. The second, on the contrary, has no reference to the real change, but to the connection between venous coagulation and the disease under which it has occurred.

1. The venous obliteration, which supervenes during chronic disease, is, generally speaking, an unimportant complication. It is not followed by any reaction, and disappears in a few days. One or more of the larger veins may be obliterated, and their place supplied by the numerous smaller veins which consequently become dilated.

The seat of obliteration is, however, an important consideration. It is attended with much danger, when it exists in the veins of any internal organ, as the lungs or heart; and in such cases the functions of the organs are much impeded. But this condition is so rare that it scarcely requires consideration. In ordinary cases at the time of the obliteration, the complaint is unattended with danger. Persons may have the deep veins of the four extremities obliterated, and yet the only symptoms may be slight local pain, and œdema.

2. But if this venous obliteration be considered in relation to the chronic disease, in the course of which it is developed, it is always a very serious complication. It generally indicates approaching death, and so far corresponds with the aphthous condition of mouth which occurs towards the close of chronic diseases in the adult. The patients rarely recover. The majority die at the end of a few days. A few are more seriously affected, and quickly sink; some appear to rally, but this is when the organic disease under which they labour, is not in so advanced a stage of development. We may therefore admit, that when coagulation in the veins takes place in the course of chronic disease, it is an indication of their approaching fatal termination.

Etiology.—The causes are very obscure. In saying that this change occurs in particular diseases, we throw no light upon the subject. The object is to determine why, and in consequence of what general disposition, it becomes developed.

As yet the subject is involved in mystery. In establishing the connection between coagulation in the veins and certain chronic diseases, a part hitherto unnoticed, we have, at least, advanced a step, although the cause of the change is unexplained.

The condition in which a patient,—the subject of chronic disease, happens to be, influences the coagulation of the

venous blood. Whether such chronic affections be accompanied with pyrexia or not, is of little importance, though the pyrexia seems rather to favour its development. Among the diseases exciting it phthisis ought to be ranked first, then cancer of the uterus, of the stomach or liver, then scrofulous diseases of bone, accompanied with hectic fever, as, for instance, caries of the vertebræ, *i. e.* disease of the knee-joint (white swelling), large ulcers, in which there may be a slow absorption of pus, as in the case of extensive burns. In the case of a young man who had a burn over the whole of the posterior part of the body, there was obliteration of the veins of the left leg; and in the case of a girl three years of age, there was obliteration of the veins of both legs under similar circumstances. The first of these cases was under M. Lenoir, at L'Hôpital Necker, and the second under M. Trousseau. Among the chronic diseases accompanied with fever, which appear to influence the coagulation of blood, I have not mentioned renal diseases, for I have only met with one case (under M. Rayer); the patient seemed to have escaped from the typhoid fever under which he had laboured, and passed into a dangerous state of marasmus, a result of rare occurrence, when the patient recovers the primary fever.

In the non-febrile chronic diseases, this complication is very rare, yet it is occasionally observed in organic disease of the heart, of which I have given two examples, in anæmia—the result of copious bloodletting, &c. In all these cases the obliteration was the result of the general constitution of the patients, and always occurred in a part remote from the diseased organ.

I have designedly omitted, as foreign to the subject, the cases of venous obliteration in the neighbourhood of an inflamed part. In these instances it is the result of inflammation spreading by contiguity, whereas in those of which we have been treating, it is developed without appreciable cause. I have in this essay omitted to speak of the venous coagulation which accompanies changes in various organs, and occurs in the neighbourhood of various veins. For the same reason the work of M. Ribes has not been mentioned. In the cases of varicose veins, the obstruction to the circulation, and the inflamma-

tion of the adjacent cellular tissues, are the local causes of this partial coagulation, but this cannot be asserted of obliterations of the vena portæ from hepatic cancer, or of the pelvic veins from cancer of the uterus. I may conclude, then, that the coagulation depends simply on the constitution of the patient, without reference to any external circumstance or local cause.

Treatment.—The complication of itself is not of much importance; strong measures are therefore unnecessary. We must take care that the treatment directed to the local affection may be not injurious to the disease which has excited it. As a general rule we may resort to venesection, leeches and counter-irritation. But nothing very active must be attempted. The case must be carefully investigated to ascertain the degree of power remaining to the patient, remembering that the disease cannot be perfectly cured, although great relief may be afforded. Where the veins of the leg are affected, according to the severity of the local pain—emollient and narcotic fomentations must be employed, the limb enveloped in flannel, to sustain a temperature favourable for the establishment of the collateral circulation, and mucilaginous mixtures with opium may be administered internally, unless contra-indicated. This practice is the best and most convenient; it may be also employed when the arm is the seat of the disease. But when the superior vena cava or pulmonary artery is affected, the treatment must be regulated by the symptoms. Thus, when in a strong man the superior cava and its branches are involved, there will be great cerebral congestion and complete cyanosis, for which venesection must be employed. This practice has been followed by M. Rayer with advantage. When hydrothorax exists, blisters may be used to promote absorption of the fluid.

The hæmoptysis, depending on pulmonary apoplexy, which results from the affection of the pulmonary artery, is much benefited by venesection. Such an affection requires active treatment.

I repeat, then, in conclusion, that these *lesions* are rare; yet, as they may occur, it is right to point out the most advisable plan of treatment to be pursued.

REMARKS ON THE USE OF
FLEXIBLE HOOKED SOUNDS.*

i.e. FLEXIBLE SOUNDS, WITH A SHORT AND
ABRUPT CURVATURE.

BY M. LEROY D'ETIOLLES.

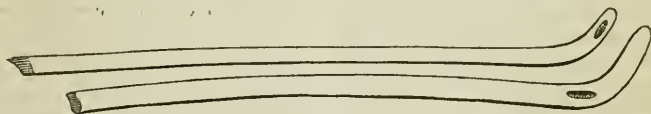
*Translated for the Medical Gazette,†
by a Correspondent.*

GREAT surgeons generally affect to attach little importance to the curvature of sounds; they use the same indifferently either to evacuate or explore the bladder, and in their hands difficulties vanish, and the instrument is compelled to effect their will. True it is, that, with this single sound, this universal perforator, they overlook stones, which they would have discovered with instruments of smaller curvatures; true again it is, that they make many false passages they might have avoided with appropriate instruments and less rapidity:—but all this is lost sight of in the multitude of operations. These aspirants to the surgical sceptre bewail the aberrations of a science, which, burthened with “special” men and “special” instruments, loses itself in minutiae, and they exclaim in despair, “Great surgeons are departing!” Such is indeed the case; yet a still more grievous circumstance is this, that they are sometimes replaced by machines. But what, then, must we do? Console ourselves with this variety of instruments, if the performance of operations may, through them, become practicable to a larger portion

of the profession, and beneficial to a mass of patients at a distance from the great operating theatres, and main centres of civilization. The instruments, however, are sold, while the qualifications of the great surgeon, like sleep, cannot be purchased. To make operations easy, is, in fact, to generalize the practice of surgery; yet they upbraid me with “specializing” too much!

But a more influential cause, than the subdivisions and specialities in the profession, makes great surgeons all but impossible now, viz. the multiplicity of *good surgeons*; for the Decemviri have succeeded the monarchy, and we are hurried on by the force of circumstances to democracy: the last of the Cæsars should not then charge us with being the sole causes of what they call a decline,—a condition, however, which, on the contrary, results from increased warmth and energy, and from which (whatever becomes of individuals) science will reap the advantage. * * * * *

I allow that the foregoing introduction would be better suited to a history of lithotritry; it has, however, fallen from my pen in this place, and so I leave it: besides, if it is true, as I represent, that certain obstacles producing complete retention of urine, and consequently endangering life, prevent the passage of common sounds and bougies, whatever hand direct them, and yet immediately yield to flexible sounds of abrupt curvature as delineated in fig. 1, I shall not, it appears to me, have much blame to bear.



This form of sound is applicable to many states, in which urinary obstruction sometimes occurs; as, when a bridle imperfectly closes and deforms the canal;—when a small stone is detained behind a narrow portion of it;—when the verumontanum and crest of the urethra, being enlarged, form a central projection dividing the termination of the canal into two more or less tortuous passages;—or when a stricture coexists with hypertrophy of

the prostate, morbid development of one of its lateral lobes, and a transverse fold at the entrance of the neck of the bladder. Let us take this last supposition, and see what must happen to instruments of different kinds.

We will imagine that a straight sound, or one of large curvature, having passed the stricture, arrives at the commencement of the prostatic region; there it finds the canal turned aside, and strikes against the projection formed by the outer lobe. If the sound, though flexible, is straight, and thick also, there is no possibility of giving it a

* The author throughout employs this word as synonymous with “catheter.”

† Gazette Médicale de Paris, Avril 1845.

lateral inclination, that it may take the direction of the urethra:—if metallic, it may perhaps by a lateral movement of the extremity enter the distorted portion, and, while straightening it, effect a passage; but not without violence to the urethra, proportioned to its degree of deviation:—if the sound is flexible, with a great curvature, and the divergence of the canal not too abrupt, the beak of the instrument may perhaps enter; though, if the deviation is sudden, it can hardly do so; for the sound to pursue such a track must have an abrupt curvature too.

This sharp curvature ought, at the same time, to be short; for the swelling of the lobes of the prostate may alternate, and dislocate the urethra, first to one side, then to the other; it is therefore of consequence, that the sound incline to right and left, in exact conformity with these different inflexions, like the keys of some modern locks, which we first push in one direction, and to which we then give a quarter-circle rotatory movement to continue their progress. The short-abruptly-curved sound should likewise be flexible; for, if the projection of the two lobes of the prostate be alternate, it must bend twice, in order to follow that double deviation, and continue to advance: and, admitting that the extremity of a metallic hooked sound should pass the second deviation, the projections must, in that case, be violently thrust to right and left, to give the instrument a straight course.

Lastly, the curvature, though abrupt, must not approach a right angle; because this portion, placed in its progress transversely to the direction of the urethra, would cause painful distension: in the moveable parts of the canal, neither pain nor resistance arises by such crossing of direction; but beyond the bulb it is otherwise; for the membranous and prostatic portions cannot undulate like the spongy body, the sound separates their anterior and posterior walls, rubbing with its heel against one, with its beak against the other, through the whole track, from the middle of the membranous portion to the neck of the bladder. When the prostate is indurated and hypertrophied, it yields with difficulty to such distension: and this explains why metallic sounds of short sharp curvature (preferable to all others, as

my friend Heurteloup and I have shown, for exploring the bladder) have so much difficulty in penetrating that viscous when the prostate is enlarged (*engorgée*).

Having shown theoretically the action of flexible gum sounds of small curvature, we will relate some cases to place their advantages beyond doubt.

CASE I.—M. de la M., æt. 84, had observed the stream of his urine to diminish for five or six years, and the desire to micturate having become more frequent during two years, indicated imperfect evacuation of the bladder. In June, 1844, he was seized with retention of urine, and called in Dr. Souehard, who discovered and passed a stricture; but was stopped at the commencement of the prostatic region. By his advice, I was summoned, and overcame, as he had done, the first, but not the second obstruction:—the small sound of large curvature, the “sonde avec mandrin”—the conical gum sound terminating in a very flexible bougie—had all been foiled. I then took a small gum sound of slight curve, which, without the least resistance, was insinuated through the obstruction, reached the bladder, and gave vent to the urine. At the end of some days we were enabled to replace it by a medium sound of large curvature, and then by one larger still; some symptoms of cystitis and troublesome general reaction, however, obliged us to withdraw the sound; yet as micturition still could not be accomplished by the natural efforts, the catheter was required to empty the bladder several times a day; but, notwithstanding the short time which had elapsed since the withdrawal of the instrument, it proved impracticable to introduce either the same, or any other than that with the short curvature—in other words, the “hooked sound.” Matters continued thus for ten days, when the symptoms which had alarmed us having disappeared, we again retained the sounds in the bladder: and, as long as an uninterrupted succession of one to another was maintained, those with a large curvature could be passed; but whenever, from the movements or fatigue of the patient, the sound was taken away (for any time) it became indispensable to resort to the flexible hooked sound. After two months’ treatment the power of expelling the urine was completely

re-established, and M. de la M. enjoys, at this day, better health than a man of eighty-five could expect.

The following case exhibits a series of events and remarkable alternations, the narrative of which, delivered to me by the patient in English, I have literally translated.

CASE II.—“In June 1818, while at Barbadoes, I experienced, after a violent gonorrhœa, great difficulty in making water, and consulted the surgeon of the regiment, in which I then served as Lieutenant. He tried, several times, to pass a bougie without success, for an obstacle existed at about five inches from the orifice of the urethra; and these attempts were followed with hæmorrhage and great pain. A little while after, I had an attack of the fever which at that time prevailed in the island, and having escaped this danger, took no more trouble about my stricture, though the urine continued to flow with difficulty, and in a very small stream. In March, 1820, I had another gonorrhœa, before the termination of which I received orders to join my regiment in England. I suffered greatly during the voyage of thirty-eight days, but recovered myself after my arrival; though in respect of micturition my condition remained unrelieved. In Nov. 1823, a young surgeon of my acquaintance made several fruitless attempts to pass a bougie; he then took me to Mr. C. Bell, who endeavoured to introduce a bougie; but, not succeeding, prescribed a mild regimen, and enjoined me to return, in some weeks, for another trial; which, however, I did not think proper to do. In Feb. 1824, having contracted a fresh gonorrhœa, and having one evening drunk five cups of green tea, I became unable to pass another drop of urine: my young medical friend bled me from the arm, and called in Mr. —, then surgeon of Middlesex Hospital. Eighteen leeches were now applied to the pubes; but the pain and desire to make water became more and more intolerable, and my bladder was enormously distended. I called in Mr. —, surgeon to St. Thomas's Hospital, who, failing to introduce a caoutchouc sound, forced a passage with a smaller one of silver, and evacuated the bladder after fifteen hours' retention, leaving the instrument in. After twelve hours, unable to endure it

longer, I withdrew the catheter, but could not pass water. Mr. —, with much hæmorrhage and pain, succeeded in replacing the same; which remained in, on this occasion, twelve days: during this time I was tormented with spasms, (to relieve which I took laudanum and aconite), was delirious every night, and had fallen into a state of great debility, being scarcely able to speak in a low voice. On removal of the catheter, I could, though with great pain and difficulty, pass urine by the urethra; and a tumor of the size of a walnut existed below the glans, which after some weeks was absorbed, though the difficulty of micturition continued.” [I conclude that this swelling was merely caused by œdema.] “In October 1843, being resident near Paris, I experienced severe pain in the urethra; and a few days afterwards complete retention of urine. A practitioner, who was called, having failed in his endeavours to introduce a bougie or sound, and a bath and eighteen leeches to the perinæum having produced no relief, I sent to M. Leroy D'Etiolles, who came at two o'clock, A.M., and succeeded in passing some fine bougies, which effected the discharge of the urine. In forty-eight hours a gum sound was introduced, which I withdrew after it had remained in twenty-four hours; and as I made water with sufficient freedom, I would not push the treatment further, notwithstanding the entreaties of the doctor: three days after this I expelled three small calculi.

“In August 1844, being in the north of Scotland, twenty miles from Aberdeen, I was seized with complete retention of urine in consequence of the fatigue produced by long walks across the Grampian hills. Mr. Thompson came, but could not pass anything into the bladder; I therefore sent a messenger for the surgeon to the Aberdeen Hospital, who tried to introduce a catheter, but not succeeding, after fifteen hours made a puncture through the rectum. For two days the urine was loaded with blood; I afterwards passed a little by the urethra, together with some small calculi: in four days the canula was removed from the anus, and on the next the puncture was completely closed.

As soon as I believed myself sufficiently strong, that is to say, fourteen

days after the operation, I started for Paris; and on the 9th of September repaired to M. Leroy D'Etiolles, who passed in succession a bougie, and (in some minutes) a small gum sound, with which I re-entered the carriage to return home. The next morning a thicker sound was introduced; a third, in the evening; and the next day, two more still larger. The doctor then allowed me to remove them; six days consecutively some thick bougies were introduced for half an hour; and to-day I make water in a full and strong stream, and am cured of a dreadful chronic stricture. W. K. M."

"January 1845."

How was it that I succeeded in introducing bougies and sounds where so many of the first surgeons failed? Thanks are exclusively due to the flexible sound of small curvature. The first time I saw the patient, in October 1843, retention had arisen from calculi arrested behind a stricture; to pass it I was obliged to use a twisted bougie, which displaced the stone, and was followed by another; then, by a very fine sound, which traversed the stricture, and insinuated itself between the parietes, but was stopped in the region of the prostate. I then took a small flexible hooked sound, which easily reached the bladder; and in the following year, when Mr. M. presented himself to me, I at once employed a sound of this shape, which penetrated without difficulty.

So conclusive and circumstantial a case, relieves me from the necessity of entering on the detail of others of the same kind, which I have met with to the number of thirty: only in the week, which is now elapsing, three indisputable examples of the advantage of the flexible sound with small curvature, witnessed by Drs. Jabin, Lafosse-Vale-
rand, and Mancel, have offered themselves. I think I may honestly recommend practitioners to be provided with two or three of these sounds; and to have recourse to them, when catheterism is rendered difficult by irregular enlargement of the prostate; but, more especially, when preceding attempts have occasioned false passages, which it is imperative on us to avoid.

CASES OF POISONING BY PRUSSIC ACID.

WITH REMARKS.

Read before the South London Medical Society, May 1845.

By JAMES HICKS, Esq. Surgeon,
Newington, Southwark.

[Continued from p. 463.]

The odour of the poison in the living and dead body—its mode of operation. Smallest fatal dose—its irritant action. Commencement of the symptoms.

In connection with symptoms usually observed, is the odour of the poison in the breath*, a fact certainly most characteristic of the poison having been taken, where it exists; but it is worthy of remark, that neither myself nor the gentleman who assisted me were at all able to recognise it in those experiments where I injected the poison into the stomach, although we had never failed to do so in other cases where the prussic acid had been poured down the throat, (and more distinctly at each expiration). It appeared to me that the odour in the breath arose from the vapour of that portion remaining round the fauces being inhaled into the lungs, and not from its passing into the lungs by means of absorption or the circulation; otherwise why should it not be present in both instances? It may be said, that it did exist, but that I failed to detect it, to which I cannot assent, as I am extremely susceptible to the odour, in consequence of the sensation it causes in the fauces. With respect to the morbid appearances, those most usually observed are glistening of the eyes†, the odour of the poison obvious in many parts of the body, the brain and lungs much congested, and the venous system gorged with blood, while the arteries are empty: in fact, with the exception of glistening of the eyes, the appearances are very similar to those in the case related. Although it would appear that neither these nor any other appearances are invariably present, yet if the result of the greater number of cases be taken, it will be seen that extreme

* First noticed by Dr. Lonsdale.

† Dr. Christison states that this appearance is not peculiar, as he has observed it in persons who have died from carbonic acid and cholera.

congestion of the venous system is always noticed, as if the last effort of nature was to throw the blood into the veins, and at the same time it shows what a great impediment exists to the circulation of the blood through the lungs. The most remarkable appearances in the case reported (p. 459) were the fluidity and dark colour of the blood, and also the odour of the poison being more distinctly recognised in the chest than elsewhere, to such a degree that while one of the gentlemen present was the first to recognise it on opening the thorax, he was quite unable to do so in the abdomen, even after the stomach itself had been laid open. This circumstance I have also repeatedly noticed in animals which I have poisoned: the fact is to me one of great interest, and one which I have observed in almost every case in which I have administered the poison. In many instances, where I have destroyed rats, the quantity has not exceeded four minims of Scheele's acid, still on opening the chest immediately after death, as soon as all signs of life had disappeared, the odour has been distinctly recognised in that cavity, even when not at all present in the stomach. In those instances where it has existed in the latter organ it has been by no means so strong as in the chest: this I considered at one time might depend on the large quantity of blood centralised as it were in that cavity, and the knowledge of prussic acid having been detected in the blood at first seemed to favour that supposition. From subsequent experiments, however, I am inclined to think it rather depends on the vapour being drawn into the lungs at each inhalation, and that in those cases where it was absent from the stomach, it arose from the poison causing death by its contact with the membrane lining the mouth and œsophagus, without passing into the stomach at all.

As regards the *action* of this poison, I believe physiologists are fully agreed that its specific action is on the cerebro-spinal system, the effects on the respiratory organs being merely secondary; but its action on both is clearly indicated by coma existing in connection with tetanus, in which respect it bears a striking contrast to strychnine, which causes tetanus only. Mr. Taylor, of

Guy's Hospital, is of opinion that the anterior columns are more affected than the posterior; some physiologists have also asserted, that it destroys the irritability of the heart, as also that of the muscular fibre of the voluntary muscles. So far as my experiments have gone, they would by no means lead me to such a conclusion; for, in every case which I have examined, the heart has continued to beat long after all other signs of life have disappeared, while the different muscles of the body may be made to contract under so slight a galvanic action, as that produced by placing a piece of silver in contact with copper, and the peristaltic motion of the bowels continued without irritation for a considerable time after death. The medium, however, through which this poison acts, as with respect to poisons generally, is far from being decided, some physiologists advocating the theory of absorption, and others as strenuously attributing its effects to some impression made on the sentient extremities of the nerves. In support of the former opinion there are certainly some striking facts to be brought forward—as, for instance, the detection of the poison in the blood, the rapidity of its action depending on the absorbing power of the tissue on which it is applied, and also the prevention of the usual action, by any cause interfering with the circulation of the poisoned part: still, however, strongly those facts may appear to establish its absorption into the system, when we consider the rapidity of its action,—in many instances so instantaneous as to leave no appreciable interval between the application of the poison and its effects on the system, we cannot, I think, admit of any other medium for its action than the nerves. That absorption does take place, and that with great rapidity, appears evident from the short period necessary for the odour to be present in most parts of the body;—besides, if any other proof were wanting to show the rapidity of absorption, or the period that elapses before a poison may be detected in the circulation, I might mention the experiments of Dr. Blake of Edinburgh, who found that the time necessary for a poison to be absorbed by the capillaries and circulated through the system did not exceed nine seconds.

However, as there is evidently some short period necessary for its reaching the brain by means of the circulation, short as that time may be, while there is none that is appreciable to the senses in many instances, between the application of the poison and death, it seems almost impossible to arrive at any other conclusion than the one above stated. As strongly confirming the above view of the subject, I will relate the following experiment. A cat being *enceinte*, was killed by a drachm of prussic acid being poured down the throat: in two minutes after death, the chest was first opened, and the heart seen contracting; but on laying open the abdomen, and examining the uterus, to our surprise the kittens were found alive, apparently not having suffered in the least from the poison, as they continued to move for some time even when removed from the uterine cavity. In this experiment, then, it is quite evident death could not have been caused by the quantity of the poison present in the blood, otherwise why were the kittens not killed? This surely ought to have been the case, if the destruction of life had depended on the poisoned blood circulating through the system: to this it may be objected, that the foetal circulation is independent of the maternal, which I allow, but still, on the other hand, as there is a constant interchange of blood between the fœtus and the mother, I cannot think that it at all militates against my argument.

Having, then, taken a cursory view of the mode of action, symptoms, and the morbid appearances produced by this poison, I shall next pass on to inquire as to the manner in which it causes death, and in doing so I should wish to ask the two following questions—namely, does it arise from some impression made on the brain and spinal marrow which being of so deadly a nature renders them perfectly incapable of performing their functions, or secondly, does it arise from asphyxia? That asphyxia is not the cause in those instances where death takes place instantaneously must I think be self-evident, life being destroyed far too rapidly to be accounted for by that means: in cases, however, where life is protracted for a longer period, as for twenty or thirty minutes, I cannot help thinking that if

not the sole cause of death, the interference with the function of respiration, and the consequent congestion of the brain, must have a very important influence in destroying life. To prove, moreover, that respiration is interfered with, I would adduce the following circumstances; firstly, the peculiar gasping noise made when the poison begins to affect the system, arising, as I believe, from the ineffectual efforts of the person to get air into the lungs; secondly, the post-mortem appearances, bearing evidence as they do of such extreme congestion, similar to persons who die from asphyxia; thirdly, from the effects produced either on man or the lower animals. In almost all those cases in the human subject where the symptoms have been observed from the first, spasm of the muscles of respiration appears to be an invariable symptom, vertigo is the first effect, and this is immediately followed by spasm of those muscles, to such a degree, that in one case related by Dr. Christison, the ribs appeared to be drawn nearly to the back-bone. If, in the lower animals, a dose be given not so large as to cause instant death, the following are the symptoms: in the first place they seem giddy, while their legs appear as if too weak to support their bodies, causing them to walk from side to side, like a man intoxicated, when suddenly they are seized with such strong tetanic spasms of the muscles, that the chest is diminished to half its natural diameter, and from this spasm the system never appears free until death takes place. Again, in those cases which recover by treatment, the first symptom is, I believe, invariably a long and deep inspiration, which I have observed in cats restored by ammonia and the cold affusion. From these facts, then, fully proving as they do how greatly respiration is interfered with, I argue that in all cases where life is not destroyed immediately, death is caused by obstructed respiration; that such is the case where strychnia is administered, is, I believe, generally acknowledged; why, therefore, may it not be so with the poison in question? Again, in reference to those cases where life is destroyed too rapidly to be accounted for by obstructed respiration, some have considered death to arise from stoppage of the heart's action; but Christison ob-

serves that it is only occasionally to be noticed, while Pereira says he has never seen the poison to have that effect, but that the heart continues to beat long after all signs of life have disappeared; a result which perfectly agrees with my own experiments*. I think, therefore, from the extreme rarity of its occurrence, it is not necessary to be taken into consideration, when inquiring into the cause of death, for if it were at all essential for its production, it would be observed more frequently. From these facts, then, I arrive at the following conclusions:—

1. That life is destroyed by this acid under a twofold action, in most cases the immediate cause being obstructed respiration; while 2dly, in others, where death is too instantaneous to be produced by that means, it arises from some impression made on the brain and spinal marrow, which being of so deadly a nature, perfectly incapacitates these organs for the performance of their functions. How this poison acts on the molecules of the brain it is impossible to say, but that the nervous system is the part chiefly affected no one will doubt; and when it is said that it is by some shock or impression made on the system that life is destroyed, we advance, I believe, as far as the limits of our present knowledge will allow in endeavouring to explain its fatal operation on the body. The *period* within which this poison usually proves fatal appears to be now known with considerable accuracy, from observing its effects on the human subject, as also from experiments on animals, death taking place in a few seconds where the dose is large; while, on the contrary, when the dose is only sufficient to destroy life, the individual may live for a period of twenty, thirty, or even forty minutes after its administration, as was the case with the Parisian epileptics; but it is generally believed that when life is prolonged for such a period, recovery is likely to take place if active treatment be adopted.†

* Dr. Lonsdale in his researches found the acid only to have that effect when introduced into the trachea in the anhydrous state; and, even in those cases, he says, "I am led to believe that the immediate effects are exerted on the brain and spinal cord, and that it also indirectly enfeebles to a greater or less extent the contractility of the heart;" evidently showing that he considers its primary effects to be exerted on the brain and spinal cord, and that the heart is influenced secondarily.

† Christison and Lonsdale.

With reference to the *smallest quantity* sufficient to destroy life, it has hitherto been the subject of great uncertainty, and was, as will be recollected, a point much discussed at the late trial of Tawell. The present case, therefore, is of great interest with respect to this question, as it settles beyond all doubt, that the life of a healthy adult may be destroyed by a dose not exceeding *nine-tenths of a grain* of anhydrous acid, a quantity less by one-tenth of a grain than was found in the stomach of Sarah Hart. Yet, notwithstanding this is the smallest quantity known to have caused death, it is not at all improbable life may be destroyed by a dose even less, knowing as we do how circumstances, such as the fulness or emptiness of the stomach, and the strength of the patient, may modify the action of poisons; and, certainly, when we remember the exceeding rapidity of the poison in the present case, it is not at all improbable that a smaller quantity might prove fatal.* Still, however, as we have now placed on record, firstly, a case related by Dr. Geoghegan, where an individual narrowly escaped with his life after taking seven-tenths of a grain; secondly, another reported by Mr. Taylor, of Cricklade, where a strong robust agricultural labourer was similarly circumstanced from nine-tenths of a grain, and then only recovered by active medical treatment, after remaining in a state of great danger for four hours; while thirdly, in the present case, an adult female died from the same quantity within twenty minutes after its administration, I think it is not asserting too much to say that a grain, or a very trifling increase above that quantity, would be sufficient to destroy life in most instances. I am aware that this is at present mere conjecture, but from a careful consideration of the above cases, as well as others on record, I fully believe every future case will tend to verify the truth of this assertion.

Another subject worthy of inquiry is, the *class* under which this poison ought to be placed. On looking over

* Dr. Letheby, in writing to the *Pharmaceutical Journal*, says, "I am inclined to think that its potency was increased by the empty state of the stomach, in consequence of her keeping the Passover at the time;" this is decidedly a mistake, as the Jews pay no respect to Good Friday, neither did the Passover take place this year until a month after that day.

the different works on Toxicology, I find it is in every instance classed among the narcotics, which I should imagine has arisen from its narcotic effects being more strongly indicated than its irritating; but that it partakes of the latter as well as the former, is clearly shown by the acrid impression made on the nose and fauces, the vomiting, and the redness of the mucous membrane of the stomach, noticed in many cases. With respect to the last proof, I might mention that in the experiment where I injected the poison diluted into the stomach of a dog, the whole of the mucous surface presented such strong marks of irritation, that, on shewing it to a most experienced toxicologist, he remarked, that had he not been told what poison had been administered, he should have said arsenic, or some other powerful irritant. I believe, therefore, the time will not be long before it is placed among the narcotico-acrid class of poisons, now that its action on the system is better understood.

[To be continued.]

THE CAUSES OF SUDDEN DEATH.

(From a Correspondent.)

THE pathological conditions which most frequently lead to sudden death are at present far better understood and diagnosed than they were during the last century. Indeed, it is only within the last twenty years that practitioners have acquired that increased knowledge of the diseases of the vascular system which has done away with some very erroneous opinions respecting the circumstances attendant upon sudden death. Still, by no means sufficient attention has been paid to the elucidation of the difficulties which beset this subject.

In the Annual Report of the Registrar-General for 1841, it is mentioned that during the years 1838 and 1839, 6708 sudden deaths became the subjects of coroners' inquests, in which the causes of death were *not ascertained* (!) and in fact, that "the cause of nearly two in three sudden deaths was not stated in the verdicts."*

* This result certainly shows a most lamentable defect in the present system of conducting coroners' inquests. The very object of the inquisition is to determine the *cause* of death; yet

Of course this is, in great measure, due to the unwillingness of coroners to incur what they deem to be unnecessary expense and trouble by ordering post-mortem examinations to be made in cases where, although the *precise* cause of death is not ascertained, it appears evident that the individual perished from the effects of ordinary disease. Still, it is rather singular—seemg that probably in a very large number of these instances medical men were called upon to give evidence at the inquests, and were doubtless requested to offer their opinions as to the nature of the diseases of which the persons died—that the causes should not have been stated in a larger proportion of cases; for it is well known that, even where no examination of the body is made, a

we find it here admitted that in 66 per cent. of the cases no cause is returned. The fact of death merely is recorded. To us it appears that the Registration Act would answer all the purposes of the coroner's inquest in such cases. Whether the fault lie with this functionary endeavouring to reduce his expenses to the minimum, or to a want of liberality on the part of those magistrates who control the expenses of coroners' inquests, is really of little moment. The evil exists, and ought to be remedied by the ordering of more frequent post-mortem examinations. On this point we shall quote the opinion of Dr. Birt Davies, coroner for the borough of Birmingham.

"The three following cases, which have occurred within this borough, strongly manifest the necessity of more extensive post-mortem examinations:—

"1. A person was found either dead or dying: more than one medical man of eminence seeing the body within a few minutes of the seizure, pronounced the party to have fallen a victim to apoplexy. It was subsequently proved that the death arose from taking hydrocyanic acid!

"2. A person died in what was considered by the physician and surgeon attending to have been a fit. Opium was found in the stomach!

"3. A person was attended by a physician and surgeon for some hours; the illness and death were ascribed to, and treated by them for, apoplexy; but it was proved, beyond all doubt, that he died from laudanum!

"Such cases very strongly attest the necessity for not suffering a small consideration of expense to deprive the act of suicide of a most salutary check, the certainty of discovery; of not suffering the Life Assurance Offices to be robbed; and, in short, of not offering an impunity to crime. That much of crime will always escape detection, and still more escape punishment, from want of a clear proof, is matter of certainty. But, as on the one hand, the universal prevalence of a belief that the community will spare no pains to detect crime, and that punishment will inevitably follow upon proof, is the best means of repressing criminal attempts; so, an opposite announcement, that in the instruments of justice a narrow spirit of economy has been enforced, to the sacrifice of what is useful and efficient, must necessarily operate as a direct incitement to evil, that may be felt in every quarter, from the highest to the lowest. It is fortunate that, as his own fees are secured by Act of Parliament, a coroner may, on the subject of the schedule, be considered as perfectly devoid of any personal interest."—*Borough Inquests, Birmingham, 1845.*

hint from the medical witness or the coroner is often sufficient to decide the jury in returning an explicit verdict; such as "died from spasm of the heart," &c. &c. The following just remarks occur in Mr. Farr's admirable report:—No definition of the sense in which 'sudden death' is practically understood by the coroners has been given; nor can we describe in any precise terms the class of cases, exclusive of violent deaths, which are comprised in the abstracts of inquests. The writers even on medical jurisprudence do not state with any strictness what they mean by sudden death—whether it be in ten minutes, ten hours, or ten days; but it is generally applied to cases where persons previously able to attend to business, are suddenly deprived of consciousness, and expire in less than twenty-four hours. Understood in this sense, it is the popular opinion, that 'sudden death' is the result of apoplexy when it is not produced by violence: but many of the verdicts which ascribe 'sudden death' to apoplexy must be erroneous."

It is expressly provided, in the Registration Act, that one of the particulars "required to be registered" in the official report of every inquest is "the *cause of death*"; the Act left to the proper parties—the coroners—the discretion of holding the inquest, but rendered it imperative on the jury, whenever it was summoned to sit on a body, to inquire into the particulars of the "cause of death." It is clear that, in almost every case, examination of the body by competent persons is the only means by which this can be, with any certainty, determined upon.

The same writer continues—"The most important part of the evidence of the inquest is omitted when the 'cause of death' is not investigated. The expense of inquests, which is now not considerable, would be slightly augmented, but the value of the information, and the use of the inquiry, would be increased in an indefinitely greater degree. The legislature, moreover, has left the coroners no discretion in this matter. The juries are bound by the Act to inquire into the particulars required by the Registrars; and the coroners are bound to supply those officers with the results—comprising an intelligible statement of the 'cause

of death,' so far as it can be ascertained. The inquests in England will henceforward be as efficient as similar inquests in France and Germany, and be placed on a level with the present state of medical jurisprudence—to contribute to that branch of science an immense number of new, well-authenticated, and instructive facts." The generality of coroners are certainly very remiss in performing this part of the duty which they are legally bound to fulfil. There might possibly be some excuse for the omission of the procedure in those instances where it is found to be highly displeasing to the feelings of the deceased person's relatives, or where a medical witness undertakes to account for death without examining the body; but the neglect often occurs where neither of these circumstances can be alleged in its defence. Were the statute more correctly adhered to, coroners' inquests would approach much more nearly than they do at present to what they were originally intended to be—strict investigations into the causes of dissolution in persons who die under questionable circumstances.

Under such an arrangement, instances of foul play could scarcely ever pass undetected, the number of absurdly incorrect verdicts would be diminished, and a more general knowledge be obtained of the true causes of sudden death.

In the following remarks, reference is made, by numbers, to a very interesting and important set of cases illustrative of sudden death, which were published by Dr. Francis in the Guy's Hospital Reports for April 1845.

The most frequent causes of sudden death, as occurring in persons who have appeared to be in tolerable health up to the time of the fatal seizure, and arising from spontaneous lesions of vital parts, independently of external violence or other injury further than that attending mental excitement, undue exertion, &c. are the following. (They of course nearly all originate in some one or other of the three great cavities of the body.)

Head.

Rupture of the basilar artery.

This is probably the only spontaneous lesion occurring within the skull that *invariably* causes immediate death.

Rupture of one of the other large arterial branches in the vicinity of the respiratory tract.

(Dr. Francis's Cases, 1 and 2.) In the first of these death occurred within five minutes, in the other within ten minutes of the time of the seizure.

Apoplexy occurring in the pons varolii.

Here death is usually instantaneous, but we have known a patient survive for more than an hour with a large clot in this situation. In this case it was found that some of the vertical strands from the medulla oblongata remained uninjured. And in cases where the effusion has been very circumscribed, and situated laterally, life has been more prolonged.

Sudden effusion of blood or pus into the lateral ventricles.

Under this condition death may occur instantaneously, or within a very few minutes of the seizure. But, in many cases, the patient lives from one to twelve hours after the effusion has commenced, remaining comatose, and suffering either from spasm, rigidity, paralysis, or other symptoms of central lesion of the brain, affecting more or less both sides of the body. In the cases where life is at all prolonged there is always reason to believe that the whole of the fluid discovered in the ventricles has not been extravasated at once.

In some cases of the last two forms of disease the heart's action is observed to be extremely violent; this has occasionally led to the error of supposing that a fatal lesion has occurred in the cardiac apparatus itself; but, when that is the case, the action of the heart is usually weakened.

General venous congestion of the brain and its membranes, especially in coincidence with cardiac and pulmonary obstructions. (Case 3)

Dr. Francis relates two cases of sudden death in epileptic patients in whom none of the recent morbid appearances found upon dissection were of a nature which would have been expected to destroy life (17, 18). In persons suffering from any form of chronic cerebral disorder sudden death is liable to occur; the recent morbid appearances found being usually those of general venous congestion serous effusions, beneath the arachnoid or in the ventricles, or the extravasation of blood or serum around tumors or other chronic degenerations of the brain substance.

THORAX.

Disease of the heart.—Here the morbid changes may affect the whole body of that organ, or be confined principally to its right or left cavities or vessels.

Persons who are the subjects of any form

of congenital disease of the heart, or of dilatation or weakening of either ventricle, in consequence of valvular or other obstruction, are liable to die suddenly without there being any appearances of morbid change in the organ itself beyond those which must have existed for some time previously. (Cases, 4, 5, 6.)

In most severe winters persons whose hearts are of weak structure, or whose lungs have been at all chronically obstructed, die suddenly from engorgement of the thoracic viscera. (Case 7.)*

In instances of severe chronic pulmonary and cardiac obstruction, the presence of serum in the pericardium or pleura may often be looked upon as the immediate cause of sudden death.

Right side of the heart.

Rupture of the right cavities or pulmonary artery.

These accidents are usually immediately fatal, the patient falling collapsed and gasping, life being quite extinct within five minutes. But instances of this kind have occurred in which death was not instantaneous, in consequence, apparently, of the separation of the tissues having, at first, been slight.

Inefficiency by rupture or ulceration of the pulmonary valves.

Sudden influx of blood to the right ventricle, or the occurrence of additional pulmonary obstruction, in any case where that cavity has become weakened from any cause.

This is especially liable to occur in consequence either of extensive pulmonary disease, thoracic deformity, (hence the liability of hunchbacks to die suddenly) mitral contraction, or the presence of any other serious impediment to the circulation in the left side of the heart.

Left side of the heart.

Rupture of the left auricle—instantaneous death.

This is a rare occurrence, apparently in consequence of the great dilatability of this cavity and the strength of its lining. Dr. Francis relates a case (12).

* It is mentioned in the Report already quoted, that about 16 sudden deaths occur in winter to 10 in summer; this, however, is probably only an approximation to the truth, as the tables most likely include many cases which are not strictly instances of sudden death. The numbers given in a subsequent table, under the heading of "Sudden death," are as follow:—"Winter, 618; spring, 524; summer, 381; autumn, 574." Mr. Farr remarks, in allusion to this table:—"It has been already rendered probable that many cases, arranged under apoplexy and sudden death, are the effects of congestions in the lungs—a sort of spontaneous asphyxia, the development of which appears to be favoured by a temperature below the freezing point of water." p. 105.

Rupture of the left ventricle, generally in connection with fatty degeneration or thinning of the heart, or obstruction of its nutrient vessels. Death is usually, but (from the cause mentioned in speaking of rupture of the right ventricle) not always, instantaneous.

Rupture of the coronary arteries—immediate death.

The coronary arteries have been found greatly obstructed or obliterated in cases of sudden death.

The coronary veins undergo immense dilatation without bursting, but their obstruction appears, not unfrequently, to determine fatal effusions of serum into the pericardium. Dr. Albus, however, relates two cases in which death was occasioned by rupture of the coronary veins.* Branches of these vessels may be involved in rupture of the muscular tissue of the heart, as in the case of the late Dr. Abercrombie.

Persons in whom the left ventricle is, from any cause, much weakened or dilated, especially where the aortic valves are inefficient, are liable to die suddenly, or to be seized with symptoms of thoracic oppression, which prove fatal in a few hours (15).

These results are usually induced either by some cause of sudden obstruction to the systemic circulation, or by some exciting or depressing influence. When patients whose hearts are in this condition remain in a state of perfect tranquillity, death takes place slowly from delay of blood in the ventricle, and pulmonary obstruction.

Sudden rupture of the cords of the mitral valve may cause death within an hour in a diseased heart; but does not appear to be suddenly fatal when occurring in a healthy one.

Sudden death from rupture of the vena azygos is rare; but cases have been recorded by Morgagni and Dr. J. Flügel.

Transverse rupture of all the coats of the aorta, or of an aneurism within the pericardium, is instantaneously fatal.

There are upon record several cases of rupture of the origin of the aorta, where hæmorrhage has eventually occurred into the pericardium, in which the patients survived for some hours (in case 13 an hour and a half) or days; but here it has always been found that a kind of dissecting aneurism has been formed, and that the outer tissue of the vessel must have given way later than the

inner, the fatal pericardial effusion being, of course, consequent upon the second rupture.

Vomiting is a rare occurrence in sudden death from disease of the heart or its appendages, and it, of course, greatly complicates the diagnosis of the case; but Dr. Francis mentions this symptom as appearing in one of his patients; and we have met with one or two instances. It seems to occur when the lesion involves the pericardium, or interferes with the phrenic or pneumogastric nerves.

Respiratory Apparatus.

Dr. Francis gives a case (8) of purulent infiltration and œdema of the glottis, in which death took place within five minutes.

This form of disease has also been known to occur in other instances, especially in patients under treatment for syphilis, who have been taking a great deal of mercury, and in whom the principal abdominal viscera, particularly the kidneys, have become much diseased.

Profuse arterial hæmorrhage from the lungs may cause death, either by suffocation or by collapse.

It is very remarkable that although, in some cases of hæmoptysis, immense quantities of blood are poured at once from the air-passages, the patient escapes suffocation, while in others, the effusion of a very small quantity of blood into the lungs causes death within half an hour. In cases of the latter kind the lungs are sometimes found greatly distended with air. It is probable that, in any given case, the time required to produce suffocation, whether as the result of pulmonary disease, drowning, the inhalation of noxious vapours, or other cause, depends rather upon the strength of the heart and the quantity of the circulating fluids, than upon the absolute amount of obstruction existing in the lungs; thus slight causes produce suffocation in persons who are plethoric, and whose hearts are weak, and *vice versa*.

The bursting of an aneurism into the trachea, bronchus, or substance of the lungs, is generally fatal at the first or second gush.

The sudden occurrence of a communication between an aneurism of the aorta and the pulmonary artery, auricles, superior cava, or other part of the cardiac apparatus, is liable to cause immediate collapse and distress, and death within a few hours; but sometimes dissolution occurs at a later period, and probably never instantaneously.

Rupture of an aneurism into the pleura is followed by instant death (16).

Where the sac opens into the œsophagus,

* Schmidt's Jahrbücher, No. 4, 1844, page 37. Referred to by Dr. Bennett, in British and Foreign Medical Review, July 1845, page 225.

the event is usually, but not always, immediately fatal.

Abdomen.

In rupture or ulceration of the splenic or coronary artery into the stomach, sudden death from hæmatemesis may occur; but the time of death has varied in several cases, according to the size of the aperture and amount of the hæmorrhage.

Rupture of an aneurism of the abdominal aorta or other large vessel, into the peritoneal cavity, is followed by death within five minutes.

But when, as is far more frequently the case, the extravasation occurs *behind* the peritoneum, life may be prolonged from three or four hours to a week. Communication between an aneurism of the abdominal aorta and the inferior cava may cause death within twelve hours, but one or two patients have survived longer. Rupture of the fallopian tube, at an early stage of tubal pregnancy, usually proves rapidly fatal by hæmorrhage; but the duration of life depends upon the extent and position of the fissure. In a case of this kind related by Dr. Meadows*, the woman lived for more than 54 hours after the symptoms of hæmorrhage commenced. Here it was found that the effusion of blood was principally subperitoneal.

Extravasation of feculent matter, bile, or other irritant, into the peritoneum, may produce death from collapse in from three to seven hours, or from inflammation in from eight hours to three days; but extravasations of this kind are not invariably fatal.

The researches of M. Devergie, the Medical Director of the Morgue, have done much to remove the common error, that the greater number of cases of sudden death result from apoplexy.

The following is a summary of forty cases of sudden death carefully examined by that gentleman* :—

Apoplexy, with a clot in the annular protuberance, 1; meningeal apoplexy, 3; serous apoplexy and pulmonary congestion, 2; congestion of the brain and spinal marrow, 3; pulmonary congestion, 12; pulmonary and cerebral congestion, 12; hæmatemesis, 2; syncope, 3; rupture of the heart, 1; rupture of the pulmonary artery, 1.

The following were the causes of death in the nineteen cases related by Dr. Francis :—

Rupture of arteries at the base of the brain, 2; venous congestion of the brain, with thoracic obstruction, 1; chronic disease of the arteries and substance of the brain, 1; in epileptics, 2; external ob-

structions at the origins of the great arteries, 3; effect of sudden cold in chronic pulmonary disease, 1; purulent infiltration of trachea, with oedema of the glottis, 1; hæmoptysis, 2; rupture of the left auricle, 1; weakening of the left ventricle in aneurism of the ascending aorta, 1; rupture of the aorta at its origin, 1; rupture of a thoracic aneurism, 1; doubtful, 1.

It is worthy of remark, that in four out of the nineteen cases recorded by Dr. Francis the patients died while in the act of relieving the bladder or intestines. A rather considerable proportion of the cases of sudden death, depending on cerebral, thoracic, or abdominal lesions, which have come under our own notice, have occurred under similar circumstances.

X

ON THE POWER OF THE INSANE TO ENDURE COLD.

OF the power which maniacs possess of resisting cold, the belief is general, and the histories which are on record are truly wonderful; it is not my wish to disbelieve, nor my intention to dispute them; it is proper, however, to state that the patients in Bethlem Hospital possess no such exemption from the effects of severe cold. They are particularly subject to mortifications of the feet; and this fact is so well established from former accidents, that there is an express order in the house, that every patient under strict confinement shall have his feet examined morning and evening in the cold weather by the keeper, and also have them constantly kept in flannel; and those who are permitted to go about are always to be found as near the fire as they can get during the winter season. From the great degree of insensibility which prevails in some states of madness, a degree of cold would scarcely be felt by such persons, which would create uneasiness in those of sound mind, but experience has shown that they suffer equally from severity of weather.—HASLAM.

[The fact is now, we believe, universally admitted, that while the sensation of cold may not be so readily perceptible to the insane, owing to blunted sensibility, the effects are not the less injurious to the system. They differ from the sane in wanting the warning power to guard them against these effects. We knew an instance, where a man had so far lost the sensibility in his fingers, that he was continually thrusting them close to the bars of the fire for warmth during the winter season. This did not prevent his fingers from being burnt, and they had become reduced to mere stumps by the practice.—ED. GAZ.]

* Médecine Légale, tom. i. p. 66. Registrar-General's Report for 1841, p. 94.

OF THE FREQUENCY OF CANCER IN THE TWO SEXES, AND AT DIFFERENT AGES:

AS A POINT BOTH OF DIAGNOSIS AND
PRACTICE.

By T. WILKINSON KING, F.R.C.S.E.

Of all females who die about 44 years of age, nearly one-half have cancers; of males, one-eighth. Cancers increase in frequency from youth up to the 44th year, and then decrease; but in males above 65, one-fifth of all who die are cancerous. Table of the organs chiefly affected.*

IN cases of serious chronic internal disease the obscurities are often sufficiently trying; and although the detection of cancer must be but a sad conclusion of our present science, it is not the less desirable for right guidance in practice.

The remarkably variable course of what are called chronic inflammations will pretty constantly furnish satisfactory indications, if duly observed. I have formerly dwelt on this fact. I propose in this place, if I may, simply to show, as I think determinately, some probabilities which statistics afford, with reference to age and sex, in cancerous affections; for these appear to me so satisfactory and essential that I almost wonder they have not been adduced long ago.

In Females.				In Males.			
Between 1 year and 9		None in 27		None in 40			
9	11	—	19	—	27		
12	14	—	12	—	9		
14	18	1	26 or $\frac{1}{28}$	3	34 or $\frac{1}{11}†$		
18	24	5	62 or $\frac{1}{12}$	2½	64 or $\frac{1}{23} (2)$		
24	30	7	68 or $\frac{1}{10}$	2	84 or $\frac{1}{12}$		
30	40	24	87 or $\frac{3}{11}$	5	108 or $\frac{1}{22}$		
40	45	13	30 or $\frac{1}{2}$	5	40 or $\frac{1}{8}$		
45	50	16	51 or $\frac{1}{3}$	13	98 or $1.7\frac{1}{2}$		
50	55	7	24 or $\frac{1}{8}$	4	32 or $\frac{1}{8}$		
55	65	11	36 or $\frac{1}{3}$	4	48 or $\frac{1}{12}$		
65	—	1	9 or $\frac{1}{9}$	3	14 or $\frac{1}{3}†$		
Totals		85	451	$\frac{1}{5}$	41	598	$\frac{1}{14}$
Adult		3	12	$\frac{1}{4}$	4	33	$\frac{1}{8}$
Middle Age		0	2		0	2	
Age Unnamed . . .		2	25	$\frac{1}{12}$	1	22	$\frac{1}{22}$
Total of these . .		5	39	$\frac{1}{8}$	5	57	$\frac{1}{11}$

* The deaths in this country *in toto* I make out to increase, in a very steady and even manner, from 15 up to about 73, and after this to decrease similarly to 95. I would grant a little decrease after 25, or sudden increase before.

† This result seems opposed by the absence of cancer in so many younger males; and again, I have found that of another series of males under 15, 32 give only *one doubtful* case of can-

An average drawn from above 1000 post-mortem examinations performed in Guy's Hospital gives the following results, to which I can discover no material objection as a constant basis for future inferences. Some may suppose the frequency of cancer here exaggerated, but I have to remark that cases of accidental injury, operations, &c. which my numbers include, rather tend to an opposite effect, especially where the proportions of cancers are low, and most of all in the males. It may be also objected that I do no supply definition of cancer, but this I must defer, hoping to do it more effectually a little later. I may state that such circumstances as the mere presence of small firm uterine tubers, or doubtful polypus, or ulcer, are not included in my calculations. I am not aware of any considerable peculiarities in the cases admitted into the hospital which may nullify or weaken the inferences from my numbers. It would have been only the cost of time and labour to double them, but the uniformity and consistency of the data obtained can hardly admit of distrust as to their sufficiency. Other sources of error as to accuracy, &c. are to be differently examined.

Cancerous diseases occurred amongst all who were examined in the following proportions:—

cer; and so, also, 29 other cases between 15 and 18 have but *one doubtful* case of cancer. The query (?) indicates also, I presume, an accidental exception.

‡ This inference, which seems eccentric, I have corroborated by an additional calculation, in which 29 males who died above 65 presented 7 cancerous, or one-quarter of the whole; as if they resembled females.

Now every museum may truly show that cancer, or fungus, can occasionally occur in any age of either sex; but the above table points distinctly to strong peculiarities in these respects. I am sensible of great deficiencies in this little labour, yet I deem it of essential use in the diagnosis of difficult and dangerous cases, and do not know that minor details are necessary to its utility. Even great precision in such a matter might be premature, if it did not have its mischiefs. One or two points I have tested by having recourse to other numbers, without finding any cause to distrust the foregoing. The following notes fortify the analyses at the head of this page.

Out of another series of cases (Miscellaneous Inspection Books, Vols. xiii. to xix. p. 347) cancer in females between 40 and 44 inclusive occurred 12 or 15 times out of 30; and in a set of females examined out of the above table, all aged 45 (Green Inspection-Books, Vols. 1 to 13), 9 or 12 out of 24 died cancerous.

I subjoin as a note one of my private papers, which will assist to show in a measure the relative frequency of cancer in different parts of the body. I refer to the greater or coarse results of hospital post-mortem histories.

Cancers of the	Cases.
Breast	21
Ovary (fungoid, ascitic, &c.	18
Uterus (the os chiefly)	15
Head or face—faux, œsophagus, &c.	16
Chest	5
Stomach	10
Abdomen generally	17
Liver (mainly)	5
Thigh	5
Kidney	2
Bladder	2
Penis	4
Testes	6
Labia	1
Scrotum	1

In conclusion, referring the reader to the heading of this chapter, I would admit that all the facts of my present case should be only offered as approximations to the truth. They were collected with an anticipation of less accordant results; and I would remark, that if the most striking particulars seem repugnant to current opinions, the general agreement of the several figures is not less surprising, supposing them to be honestly deduced.

36, Bedford Square, July 1843.

CASES OF THE
DELETERIOUS EFFECTS OF WATER
IMPREGNATED WITH CARBONIC ACID,
PASSING THROUGH LEAD PIPES.

By G. PEARL, M.R.C.S.
Windsor.

ON the 23d of last April, a labourer, residing at Ascot, and employed by Mr. Hibburt, clerk of the Race-course there, applied to me at the Dispensary, at Windsor, evidently suffering from the poisonous effects of lead: his complexion was sallow, and he was constantly suffering from severe pain in his bowels, attended with flatulence. He had the dark blue mark round the gums, so peculiar to those who are suffering from the deleterious effects of that metal. On inquiry I found that his children had been in bad health, since they had lived at Ascot, and that they had become weak and sallow, and had suffered from pains in their bowels, and indigestion, and that he had sent one of the most affected away, believing that the air of the Heath was prejudicial to their health. I immediately asked him if the water he drank, and used for cooking, passed through lead, and was answered in the affirmative; I procured a quantity of it, and on the addition of water impregnated with sulphuretted hydrogen, a large precipitate of sulphuret of lead was thrown down. By the use of other water, and of appropriate remedies, the principal of which was alum, he is slowly recovering.

In November 1842, one of the Whippers-in at the Royal kennel, at Ascot, applied to me suffering from lead palsy, after a severe attack of colic during the previous summer, which was believed to have been inflammation of the bowels. Having previously met with similar cases, I felt convinced that lead was dissolved in the water which he had used for cooking and drinking; and on inquiry, I found that disorders which could be attributed to the effects of lead had for a long time been prevalent in the establishment at the Royal Kennel, and that the dogs had for a long period suffered from a species of paralysis denominated kennel lameness.

The water was in consequence analysed by Dr. Ryan, at the Polytechnic Institution, the results of which were as follows—

Water at the spring head,
Specific gravity at 60°—1.018.

The contents of an imperial pint on evaporation to dryness, yielded 2.37 grains of solid matter. The solid contents of an imperial pint being

Chloride of Sodium ... 1.54 grains.

" " Magnesium 0.71 "

Sulphate of lime 0.128 "

A trace of Carbonic Acid

2.378 "

The water after it had passed through the leaden pipes was found to contain .164 grains of carbonate of lead in an imperial pint, or one and a third of carbonate of lead in an imperial gallon.

Dated, Feb. 13th, 1843.
Polytechnic Institution.

Soon after I had treated the case of the whipper-in, a young man, Richardson, from East-Hampstead, applied to me with the worst form of lead palsy I had ever seen; this came on him when in service as footman in the family of Sir Willoughby Rooke, then inhabiting a mansion in the immediate vicinity of Ascot, and was attributed to drinking water contained in a leaden cistern.

Recently I have seen other persons from the immediate vicinity of Ascot, suffering from various symptoms, which might be caused by lead, and on inquiry found that they were supplied by water which passed through the leaden pipes of pumps.

I think it may be fairly deduced from the above facts, that the spring water at Ascot contains a small portion of free carbonic acid, which dissolves portions of lead in passing over its surface, and it will readily account for the fact, that the leaden cisterns and pipes usually so innocuous should occasionally produce such deleterious effects.

The paralysis of the whipper-in was entirely removed by alum combined with guaiacum, and Richardson was very much relieved by the same remedy. From the almost specific effects of alum in painters' colic (a disease I have been frequently called on to treat,) I was induced to try whether it would be found serviceable in the paralysis produced by lead, and have on many instances found it of the greatest service, although in many more it has been useless.

Windsor, June 25th.

CASE OF DISLOCATION OF THE STERNAL END OF THE CLAVICLE BACKWARDS.

By WILLIAM BROWN, SURGEON,
Callington.

ALL affections and injuries that are reputed to be of particularly rare occurrence, are of some interest. The fact that Sir Astley Cooper saw only one case of dislocation of the sternal end of the clavicle backwards, and that that was not from external violence, speaks enough for the rarity of this affection. The case of Velpeau's, communicated by Mr. Morton to Mr. S. Cooper, and sketched in Mr. Cooper's "First Lines," might have been an instance of the kind in one *stage* of its occurrence. I propose, however, to add a case of a simple, but at the same time well-marked, character; produced by external violence, in wrestling. (Very extensive prize-wrestling has just taken place at this town.)

On the 2d inst. a well-known Cornish wrestler, commonly called the "Little Roper," was brought to us (Dr. Hender and myself,) with an injury sustained in the ring. He had been thrown to, or rather *upon*, the left shoulder, so that this was forced forwards. The great force of the fall was assisted by the weight of the other wrestler coming down upon him. Instead of the clavicle giving way in its outer curvature, as one would have expected, the sternal end of the bone was completely driven backwards. There was much pain, with some embarrassment of breathing. The case being clear, the plan of treatment adopted was the method of Desault, as modified and practised at University College Hospital, for fractured clavicles; that is, the reduction, and keeping of the parts in place, having to be effected *indirectly*. Hence the limb was put up with the wedge-shaped pad in the axilla; the elbow, in order to be made to act as the lever, being fastened to the side by means of a roller passing alternately round the body, and over the right shoulder. Thus the elbow was supported, and the fore-arm fixed upon the breast, whereby the shoulder was well kept back—in addition to the primary object being

obtained, of confining the elbow to the side, and so making the pad effective as the fulcrum.

The foregoing case is not the less interesting, perhaps, from the fact, that the next day a youngster applied, who had sustained much the same kind of fall in wrestling for amusement, and in whom I found the clavicle to be fractured in the outer curvature. The outer fragment was driven forwards, so as to be at an acute angle with the body of the bone. This person was a slim, weakly individual, with slight bones.

Perhaps one reason why the articulation instead of the bone gave way, in the case of the first man, was, that though wide in the chest, yet still he was very *flat* in that part.

EMPLOYMENT OF THE CATHETER.

At the Meeting of the Academy of Sciences, on Jan. 13th, 1845, a memoir was read by M. Maisonneuve, upon a method of practising catheterism in difficult cases.

M. Maisonneuve, after expressing the dissatisfaction which he had felt with the ordinary modes of practising catheterism in difficult cases, proceeds to explain the peculiarity of the operation which he recommends. The instruments required are an elastic sound, straight or curved, of a calibre proportioned to the presumed diameter of the canal, and open at both extremities; 2, a very fine bougie (No. 1, 2, or 3) capable of passing as a stylet in the interior of the sound; 3, a silk or metallic thread for the purpose of directing the sound upon the bougie.

The first part of the operation consists in the introduction of the bougie, for it is a fact known to all practitioners, that a very fine and pliable bougie will pass without serious difficulty, and especially without pain or danger, wherever a sound can be passed, and in many cases where this is impracticable.

After the introduction of the bougie, to its outer extremity is attached a silk or metallic thread, which has been previously passed through the canal of the sound. The second part of the operation, which has for its object the introduction of the sound into the bladder, then commences. To accomplish this, the surgeon causes the thread to be rendered tense by an assistant; he then passes the sound upon the bougie as a conductor. A slight amount of pressure suffices to ensure the easy passage of the sound, provided that its size has been proportioned to the calibre of the canal; when the sound

has reached the bladder, the bougie may be extracted from its interior, and the operation is finished. After evacuating the contents of the bladder, if it be wished to withdraw the sound, and leave in the urethra a bougie which may aid in the passage of a larger one, this is easily done by introducing within the sound a bougie armed with a metallic thread; then, as the former is removed, by supporting the thread of metal, the bougie will be prevented following it.

M. Maisonneuve does not hesitate to deduce the following conclusions from the results of his practice:—

1. Catheterism by the aid of a conducting bougie is of all modes the most easy and sure.
2. It succeeds perfectly in all cases where the other methods are applicable.
3. It succeeds also in most of the cases where the other methods fail.
4. It guards against the occurrence of all painful explorations, lacerations, ruptures of the canal, false passages, &c.
5. It requires no special skill, and may be practised by those who have had but little experience.
6. It renders useless the various instruments required to overcome special difficulties, and requires only the employment of those in common use. — *Comptes Rendus*, Jan. 13.

[We observe it stated in a contemporary that a very similar operation has been practised for some years by Dr. Hutton, of the Richmond Hospital, Dublin. His plan consists in passing into the bladder a fine catgut bougie, 18 or 20 inches long, and then employing this as the conductor for a gum-elastic catheter.

At the sitting of the Academy on Feb. 10th, a letter was read from M. Guillon, claiming the priority of the operation described by M. Maisonneuve. M. Guillon supports his claim by quotations from the *Revue Médicale* of 1839, and also from the *Gazette des Hôpitaux*, of Feb. 14, 1832. The procedure of M. Guillon appears to have been in principle entirely the same as that subsequently adopted by M. Maisonneuve. M. G. considers the employment of the conductors especially useful:—1, when there are large false passages in the urethra; 2, in retention of urine produced by chronic inflammation of the prostate, or by the presence of those obstructions or valves at the internal orifice of the urethra, of which Soemmering has given so good a description; 3, in cases of fungus of the neck of the bladder.—*Ed. Gaz.*]

MEDICAL GAZETTE.

FRIDAY, AUGUST 1, 1845.

WE have at length an announcement from the Home Minister of the alterations which he proposes to make in the fourth edition of the Physic and Surgery Bill. That the settlement of the question would be postponed until the next session, had been for a long time anticipated by those who had paid any attention to the subject; and thus we learn that the Bill has now gone through Committee *pro formâ*, merely in order that the proposed amendments may be printed. As the measure will not be proceeded with until the next session of Parliament, there will be ample time for the consideration and discussion of these amendments. There has been, throughout, this peculiarity about the Physic and Surgery Bill—that in each reprint it has presented a new aspect, and has come out like a new measure. The alterations now made are of a very extensive kind, and in some respects they are intended to meet the objections which have been so strenuously urged against the third Bill. The first change to which we shall allude refers to the objection contained in the recent Memorials of the Royal Colleges of Physicians* and Surgeons†;—i.e. that English candidates were compelled to undergo *two* examinations in order to enjoy the privileges which a Scotch or Irish candidate would derive from *one* examination. This grievance is removed, by rendering it necessary that every person, intending to qualify as a general practitioner, should undergo two examinations in each country,—in England the first examination before a College of General Practitioners, and the second before a joint Board of Phy-

sicians and Surgeons;—in Scotland and Ireland, there will be two distinct examinations, one before the College of Physicians, and the other before the College of Surgeons respectively. Thus, then, the examination before the joint Board of Physicians and Surgeons in England, is taken as an equivalent to the single examination by a board of Physicians or Surgeons in the other two countries. At first view it would appear that the English candidate has virtually to pass through three examinations, and the Scotch and Irish two;—but much of course must depend on the mode in which these examinations are conducted. We can imagine also that some candidates would prefer to be examined by the two *single* Boards of Scotland and Ireland, than by the two *joint* Boards of England; for with properly conducted examinations, the College of General Practitioners, which is to be incorporated under the new Bill, will be equivalent to a joint Board. The profession has a right to expect that no advantage should be given on this ground, and that by the appointment of assessors or other means, the examinations shall be conducted with equal rigour and fairness in the three kingdoms. More than this we cannot expect, but less than this ought not to be granted.

One of the most important changes is that which relates to the preliminary examination for English candidates. Under the third bill, this was to be conducted by the Physicians and Surgeons; under the fourth, it will be conducted by the College of General Practitioners, the final power of licensing being now left in the hands of the joint Board of Physicians and Surgeons. There will, of course, be some division of opinion about the propriety of this change, as well as about the propriety of the proposed increased fees payable by candidates to each College,

* Page 429.

† Page 299.

i. e. five guineas to the College of Surgeons, five guineas to the College of Physicians, and ten guineas for the maintenance of the Museum and Library.

On removing from one kingdom to another, practitioners are to be admitted members, without examination, of the corresponding College of that kingdom, but on payment of the same fees as if they had been originally examined and admitted members of that College. We do not understand why there should be this additional payment of fees, if all have undergone an equal education and examination. We can only look upon it as a tax to check the emigration of practitioners.

Army and Naval surgeons are not required to undergo an examination before the College of General Practitioners, but they cannot act as such within five years from the time of passing their examination before the joint Board of Physicians and Surgeons, as well as the Army or Navy Board, unless they submit to this additional examination.

Those who are now practising in England with Scotch or Irish diplomas, as general practitioners, may register as such without examination. The clauses regarding Universities are struck out, and no restriction will be imposed either as to the residence necessary for granting degrees, or the assumption of titles of graduation. With respect to the Council of Health, the number of members composing it is to be reduced to *thirteen*, including the Secretary of State. There will be no *ex officio* members: all will be nominated by the Government. Lastly, on the application of the College of Surgeons, there is every probability that a supplementary charter will be issued. Whatever difference of opinion may exist respecting these changes in the Physic and Surgery Bill, of which we have

here only given a brief sketch from the statement made by Sir James Graham, all will receive with satisfaction the announcement that a supplementary charter will be granted to the Royal College of Surgeons. This had become absolutely necessary in order to put an end to the hostile feeling which the conduct of the College had excited in the profession, and we have every reason to believe that the charter will be based upon fair and equitable principles.

Reviews.

The Physiological Anatomy and Physiology of Man. BY ROBERT BENTLEY TODD, M.D. and WILLIAM BOWMAN. Part II. (concluding the first volume). 8vo. pp. 248. London: Parker, 1845.

THE second part of Todd and Bowman's Physiology fully realizes the expectations which the first led us to form. The work promises to be one of sterling value, not only from the judicious manner in which the main facts of several new and important discoveries, by Continental and British physiologists, have been selected; but also from the novel observations and close reasonings which the authors have deduced from their own anatomical labours.

A large proportion of that which is valuable in the entirely new field of physiological and pathological information which has, of late years, been opened by microscopical investigation, has appeared in the elaborate and beautiful monographs of the German anatomists. Few students or practitioners have either the time or the opportunity of perusing the originals of these papers; and it is probably as well that they should not, generally, attempt to do so; for works of this kind are rather addressed to teachers than to learners; and, abundant as are the statements of new facts which they often contain, the wish of their authors to make them complete renders many of their details unnecessary; and they never became so practically useful

as when their most salient facts have been sifted and condensed by able commentators, and arranged in their proper order in the pages of systematic works like that before us.

This book appears to be written upon the plan of endeavouring to avoid the beaten track,—of giving as great a number of new and unhackneyed facts in structural anatomy and in physiology as possible, and linking them together with just so many elementary details as are necessary to give the whole the character of a system. The greater part of it, therefore, is made up of information of very recent date. The fasciculus before us is entirely devoted to the consideration of the structure and functions of the nervous system;—comprehending the minute anatomy and action of the nerves, brain, spinal cord, and some of the organs of the senses. We shall quote one or two interesting statements. In speaking of the presumed identity of the nervous and electrical forces, the authors say: “The results of experiment certainly afford no support to the advocates of the electrical theory; and indeed it will be seen that there are difficulties in the way of obtaining the necessary condition for a satisfactory result, which of themselves invalidate the experiments which have been reported to prove favourable to that theory.

Attempts have been made to affect the galvanometer by bringing the nerves of living animals into connexion with it. This is done by inserting wires into the exposed nerves, and attaching their opposite extremes to the galvanometer. When the nervous power is excited so as to cause muscular contraction, the needle, it is said, is deflected.* The experiment has failed in the hands of Prevost and Dumas, who are advocates of the electrical theory, as well as in those of Person, of Müller, and of Matteucci; and on several trials we have been unable to observe the slightest movement of the needle. Person connected the wires of a galvanometer with the surfaces of the spinal cord in kittens and rabbits, in which spasmodic action of the muscles had been excited by the influence of *nux vomica*, and could not discover any evidence of electrical action. It has also been affirmed that needles in-

troduced into the nerves of a living animal become magnetic, so as to attract iron filings. No such result could be obtained by Müller or by Matteucci, from their repetition of these experiments. The latter philosopher took the precaution of employing astatic needles for the purpose, but could discover no trace of magnetization. He also introduced the prepared limbs of a frog into the interior of a spiral covered on its inside with varnish; the extremities of this spiral were united to those of another smaller spiral, into which he introduced a wire of soft iron. The nerves of the frog were irritated to excite muscular action, and, at the same time, Matteucci sought to ascertain if an induced current would traverse the spirals and magnetize the wire. But, he adds, all his endeavours were useless.” The authors, however, argue very justly, that even were it certain that an electrical current passes along the nerve-fibres during nervous action, it does not seem likely that the required evidence could be obtained from any of the experiments above detailed. From a review of the arguments for and against the theory of the identity of the nervous force and electricity, they are led rather to reject than adopt it. They, however, appear to assume, very confidently, the opinion, that nervous action depends upon a temporary molecular change produced by the operation of stimuli upon the nerves, and rapidly propagated along their course from the point of application of the stimulus—in fact, a state of polarity in the particles of the nerves similar to that which is believed to take place in the molecules of a piece of soft iron when it is for a time rendered magnetic from being maintained in a certain relation to a galvanic current; but this view, ingenious and not improbable as it is, is of course quite hypothetical, and, as such, has perhaps been rather too confidently applied by the authors.

Should the following opinion prove correct, it will, in some measure, account for the difficulty which physicians have hitherto met with in tracing errors of sensation to changes occurring in the posterior columns of the spinal cord; and those of motion to disease of the anterior. “The hypothesis which we are most disposed to adopt is the following: that the antero-

* David, quoted by Müller, p. 685.

lateral columns of the spinal cord with the grey matter are, in connexion with the brain, the recipients of sensitive impressions and volitional impulses, and that they are the centres of the independent or physical nervous actions of the cord, and that the *posterior columns* propagate the influence of that part of the encephalon which combines with the nerves of volition to regulate the locomotive powers, and serve as commissures in harmonizing the actions of the several segments of the cord. As leading to this view, the authors mention that "in many cases where the principal symptom has been a gradually increasing difficulty of walking, the posterior columns have been the seat of disease."

"We may notice two kinds of paralysis of motion, distinguished respectively by impairment or loss of voluntary motion, and of the power of coordinating movements. In the latter form, while the voluntary powers are considerable, the patient walks with great difficulty, and a gait so tottering, that his centre of gravity is easily displaced. These cases are generally of the most chronic kind, and many of them go on from day to day without any increase of the disease or improvement in their condition. In two examples of this variety we (the authors) ventured to predict disease of the posterior columns of the cord; and this was found to exist on a post-mortem inspection. All cases on record which we have had the opportunity of examining, in which the posterior columns were the seat of disease, began by evincing more or less disturbance of the locomotive powers; and it seems to us that the degree to which sensibility may become affected will greatly depend upon the extent to which the *posterior roots* of the nerves are involved in the disease." p. 321.

We would especially direct the attention of our readers to the interesting abstract of Mattencei's *Electro-Physiological Researches*, p. 375, and the description of the *Pacinian corpuscles*, p. 895, which, in the human subject, are found in great numbers attached to the nerves of the hand and foot, and are very readily seen with the naked eye in the mesentery of the cat. They are small and nearly oval bodies, nearly transparent, and with a whitish line traversing their axis. They are especially numerous on the smaller twigs;

they lie imbedded in the areolar tissue, and are attached to the nerves by a stalk of fibrous tissue prolonged from the neurilemma, and occasionally $\frac{1}{10}$ th of an inch long. Their average length in the human subject is from $\frac{1}{20}$ th to $\frac{1}{10}$ th of an inch. The account of their remarkable internal structure is very interesting. Their use is unknown. The microscopical observations upon the structure of the nerve-vesicles (p. 212) are also interesting.

This work is not calculated to supersede any of its standard predecessors; it should rather be considered as a valuable sequel to them. The advanced student will profit much by its perusal, after he has made himself thoroughly acquainted with the contents of some elementary work on the subject.

POSSIBILITY OF THE OCCURRENCE OF INFLAMMATION IN COLD-BLOODED ANIMALS

M. LEREBoullet, of the Faculté des Sciences of Strasburg, examined the body of a female "spectacled crocodile" (*cūiman a lunettes*), which had died on the same day in a travelling menagerie. Upon opening the abdominal cavity, it was evident that this animal had died of peritonitis of a very high degree of intensity. The peritoneum, which was greatly thickened, was lined throughout its whole extent with a layer of pus covering false membranes which hung in threads, and were, in some places, nearly the 25th of an inch in thickness. The intestines were, in every part, of the redness of wine-lees, the colour being more or less deep in various places, but generally very intense. They were covered with a layer of yellowish pus, and adhered strongly to each other by false membranes. Upon separating, not without some difficulty, the different convolutions of the intestines, he found, at the lower part of the peritoneum, a square flat piece of cork, with irregular edges. It was discovered that this foreign body had made its way through an almost lineal opening more than half an inch in length, and not more than about the eighth of an inch wide, situated at the angle of the fourth convolution of the intestine.

Here, observes the author, we have all the characters of a true inflammation—intense reddening, exudation of plastic lymph, formation of false membranes, agglutination of the intestines, and purulent secretion; thus proving the possibility of the occurrence of inflammation in cold-blooded animals, and doing away with the opinion, which has been so strongly advanced, that such an occurrence is impossible.—*Gazette Médicale*.

Medical Statistics.

STATE OF THE PUBLIC HEALTH IN THE LAST QUARTER.

OWING to the space occupied by correspondence and discussions on the Physic and Surgery Bill, we have been obliged to delay the insertion of the subjoined interesting document—the Registrar General's return for the Quarter ending March 29th, 1845.

"The Quarterly Returns are obtained from 115 Districts, subdivided into 576 Sub-Districts. *Thirty-four* Districts are placed under the Metropolis, and the remaining 81 Districts comprise, with some agricultural Districts, the principal towns and cities of England. The population was 6,578,912 in 1841."

The season to which the Return refers was remarkable for its severity; the temperature fell lower than had ever before been observed and recorded in the neighbourhood of the Metropolis. The mortality was proportionably high; 49,874 deaths were registered; 43,958 had been registered in the last quarter of 1844; and 33,784 in the September quarter of that year. The increase of deaths was therefore upwards of 11,000.

In the unhealthy countries of the world *the mortality is highest in the hottest months*, and this was the case formerly in London; but *the greatest number of deaths now invariably happens in the coldest quarter of the year*. Thus the average number of deaths in the March quarters (45,484) of 1840-4 is 4,220 above the general quarterly average (41,264) of the same five years 1840-4; but the deaths in the first quarter of the present year, were 49,874, or 4390 above the average of the March quarter of the previous five years. It is true that the population increased in the interval; but the increase of population would not account for more than half the excess of deaths.

The mortality was below the average in the milder climate of the south-western parts of the island, and in the coal districts of the north; it was highest on the eastern coast, in the metropolis, and North Wales.

In the city of Norwich 708 persons perished in the three months out of a population of about 62,000. 57 deaths from small-pox were registered in East Wymer, 36 in Conisford, 40 in Mancroft. The Registrar of Coslany states that the average "is exceeded by about 100 deaths, principally from small-pox. *No deaths have occurred from small-pox after vaccination.*" Few of the victims of small-pox had been vaccinated; vaccination had not even been attempted in a great majority of cases; and thus, in one city, between 200 and 300 persons were suffered to perish in

three months—others were blinded, maimed, and deformed for life—through negligence of the parents in the application of the protection discovered by Jenner, and placed at the disposal of all by the legislature. Other examples of the consequences of neglecting vaccination will be found in the notes. Ashton-under-Lyne is the only parish in which it is mentioned that the "Churchwardens and Overseers have refused to carry out the Provisions of the Act of 3 and 4 Victoria,"—to extend the practice of vaccination, by contracting with medical officers for the gratuitous protection of the poor. Sixty-one funerals took place in Ashton town from small-pox. In Jenner's life an instance is mentioned of *the cost of coffins*, convincing the overseers of a certain parish of the advantage of vaccination, after all the higher arguments of humanity and justice had failed!

The high mortality was no doubt due in great part to the extreme coldness of the season; but, as is judiciously remarked by one of the Registrars of Stockport, "great as it is, there can be no question that the mortality would have been greater, in so severe a winter, had not the improved condition of the industrious classes enabled them to be better clothed and fed."

In the metropolis, small-pox, scarlatina, and measles, were epidemic; the deaths from diarrhoea and erysipelas were above, those from typhus below, the average. The deaths from all pulmonary diseases rose; and 632 persons died of bronchitis, 606 of asthma, 1296 of pneumonia. There was a marked excess of deaths from scrofula, tabes mesenterica, cancer, atrophy, malformation, apoplexy, delirium tremens, and intemperance. 12 persons, labouring under diabetes, died (the average is 6); and it is worthy of remark that cold weather is always very fatal to this class of patients.

Districts in which the mortality was ABOVE the average of five March quarters:—The five Metropolitan Districts, Portsea Island, Northampton, Norwich, Kidderminster, Dudley, Wolverhampton, Birmingham, Aston, Coventry, Nottingham, Stockport, West Derby, Blackburn, Chorlton, Manchester, Ashton, Braddford, Merthyr Tydfil, Holywell, and Anglesey.

Districts in which the mortality was BELOW the average of five March quarters:—Cambridge, Liverpool, Wigan, Prescott, Salford, Hull, and Pontypool.

The mean temperature of the 13 weeks at Greenwich was 35° 4. The temperature of the corresponding weeks, on an average of 25 years, was 38° 9, according to Mr. Henry's observations. The temperature of the first 4 weeks of January was from 1° to 6° above the average; from the close of January to the end of March the mean tem-

perature was 8° below the average; and in one week (March 9th to 15th) it was $29^{\circ} 1$, or 13° below the average. On Wednesday morning, February 12th, a thermometer on grass fell to 6° below Zero; the thermometer on flax, cleared of snow, was $12^{\circ} 5$ below Zero, probably a point lower than has ever been recorded in this climate before. At the same time a thermometer on long grass under snow was 26° ; showing, in a striking manner, the protection which snow affords to vegetation against sudden extremes of temperature. The temperature of the air fell in the night to $8^{\circ} 8$.

The meteorological returns from other parts of the kingdom, though not all made on a uniform plan, are highly interesting, and exhibit differences in the results which could scarcely have been anticipated in the absence of direct evidence.

A Table of the Mortality in the Metropolis, shewing the number of deaths from the principal causes, registered in the 13 weeks ending March 29th, 1845.

	Quarterly Average of Deaths in the 5 March Quarters, 1839-43.	Deaths in the Quarter ending March 29th, 1845.
ALL CAUSES	12600	14528
SPECIFIED CAUSES	12550	14491
The following selection has been made of the number of deaths from the most fatal diseases.		
1. Small Pox	263	481
Measles	239	381
Scarlatina	309	421
Hooping Cough	524	411
Croup	105	112
Typhus	406	362
2. Dropsy	483	413
Sudden Deaths	228	207
3. Hydrocephalus	444	460
Apoplexy	256	343
Paralysis	228	293
Convulsions	739	696
4. Bronchitis	232	632
Pneumonia	1125	1296
Hydrothorax		92
Asthma	555	606
Phthisis or Consumption	1822	1972
Disease of Lungs, &c.	233	249
5. Pericarditis	11	33
Aneurism	1	21
Disease of Heart, &c.	266	458
6. Teething	214	227
7. Childbirth	104	133
8. Old Age	110	1127
9. Violent Deaths	317	377

STATISTICS OF THE MEDICAL PROFESSION IN AUSTRIA.

ACCORDING to the last edition of the Austrian Pharmacopœia, the following may be taken as the number of persons practising as apothecaries in the empire for the year 1836. Hungary is excepted.

Provinces.	Average Population.	Apothecaries.	Ratio.
Austria below Ems	1,500,000	99	1:15,000
Austria above Ems	850,000	45	1:19,000
Tyrol . . .	850,000	79	1:10,700
Styria . . .	950,000	36	1:26,400
Illyria . . .	750,000	36	1:20,800
Dalmatia . .	390,000	30	1:13,000
Lombardy . .	2,500,000	782	1: 3,200
Venice . . .	2,000,000	751	1: 2,600 (!)
Bohemia . . .	4,250,000	193	1:22,000
Moravia and Silesia . . .	2,000,000	76	1:26,000 (!)
Galicia . . .	4,500,000	645	1: 6,000

—Casper's Wochenschrift, Mai 1845.

[REMARKS.—If our readers will turn to our last volume*, they will find an account of the statistics of the medical profession in Great Britain. The Austrian table, it is true, includes only the class denominated with us general practitioners; but nevertheless the differences in the results are very extraordinary. Thus, in Middlesex, the proportion is, at its maximum, 1 medical practitioner to 366 of the population; and in Buckinghamshire, at its minimum, 1:1498. For all England, the proportion is 1:856. In the Austrian table, the Duchy of Venice appears to have the largest number of medical men, the proportion being 1:2600; while in Styria we find the minimum, the proportion being 1:26,400. The comparison is so far fair, that the bulk of the English table is made up of the same class as that given in the Austrian table. Hence we learn, either that England is very much overstocked with medical practitioners, or that the population of Austria can dispense with physic to a very great extent. It would be only fair to our profession to compare the average rate of mortality in the two countries, before deciding the question.—ED. GAZ.]

EXPECTATION OF LIFE.

It has been elsewhere stated†, that the "mean age at death" can give us no information on the mean duration or expectation of life, and thus, as Mr. Milne has correctly

* Vol. xxxv. p. 497.

† Page 558.

remarked, tables of mortality constructed from the *numbers of deaths only* in the different intervals of age, without comparing them with the *numbers of living persons* in the same intervals in an increasing population, must lead to error; while, on the other

hand, the proportion of the number living to one death, does not differ very widely from the integer which expresses the mean life-time or the expectation of life,—as the following table, taken from the last report of the Registrar-General, will show.

	1. Mortality : one death.	2. Mean age at death.	3. Mean life time, or expectation of life.
England (1841)	in 46 living	29 years	41 years.
France	42 "	34 "	40 "
Sweden	41 "	31 "	39 "
Metropolis (1841)	41 "	29 "	37 "
Or as an average of five years 1838—42	39 "		
Liverpool (1841)	30 "	21 "	26 "
Surrey (extra metropolitan)	52 "	34 "	45 "

According to the first column, the order would be, Surrey, 52; England, 46; France, 42; Sweden, 41; Metropolis, 39 (average of five years); Liverpool, 30. This series will be found to approach much nearer to the numbers in column 3, than to those in column 2, which it will be seen are quite unfitted for determining the duration of life.

ON PLURALITY OF BIRTHS.

BY DR. J. G. RÜTTEL OF WEISSENBURG.

As a general rule, there is only one child at a birth; but it is well known that some females have a predisposition to the production of twins, or even triplets. Among 7,774 births, there were 74 cases of twins, or 1 : 105; and one woman, a peasant, bore twins five times. In 1840, out of 574,293 births in the kingdom of Prussia, there were of twins 6381 cases, or 1 : 90;—of triplets 72 cases or 1 : 7976; and of quadruplets 1 case. In the nine years from 1826 to 1834, there were 645 cases of triplets. From various sources of information, public and private. I have met with fifteen cases of quadruplets, and four cases of quintuplets. At Drogi, in Bessarabia, in December 1831, a peasant woman of ordinary strength bore six children at a birth! They were born alive, but died within twenty-four hours. It is a question whether, taking an equal number of cases, these plural births are not much more frequent among the poor, than among the upper classes of society.—*Zeitschrift der Staatsarzneikunde*, 1844.

A HINT TO MEDICAL WRITERS WHO AVOID THE USE OF PLAIN LANGUAGE.

GOLDSMITH cites an authority for the fact, that "the concatenation of self-existences proceeding in a reciprocal duplicate ratio, naturally produces a problematical dialogism."

Medical Intelligence.

ROYAL ACADEMY OF MEDICINE.

THE Royal Academy of Medicine in Paris has elected as Foreign Associates Sir Benjamin Brodie, Mr. Lawrence, Professor Liebig of Giessen, Herr Müller of Berlin, and Herr Burdach of Königsberg.

M. LALLEMAND has been elected member of the Académie des Sciences, in the room of M. Breschet, deceased.

At a meeting of the Manchester Medical Reform Committee on the 24th inst. the following resolution was passed: "That this committee having understood that some alterations in the Charter of the Royal College of Surgeons of England are contemplated, most earnestly entreat Sir J. Graham that he will not recommend her most gracious majesty, the Queen, to grant any supplemental charter to the said Royal College of Surgeons, until the provisions of such supplemental Charter shall have been published for the information of the members of the College."

OBITUARY.

THE Provincial Medical Journal announces the death of Dr. Male, which took place at Birmingham, on the 26th of July. He was for many years physician to the Birmingham General Hospital, and was well known as the author of a small work on "Juridical or Forensic Medicine," which evinced much practical knowledge of a science then as little understood as it was appreciated. This volume went through two editions, the last of which appeared in 1818.

Medical Trials and Inquests.

OXFORD CIRCUIT.

Worcester, July 16, 1845.

Before Lord Chief Justice DENMAN.

*Alleged Poisoning by Corrosive Sublimate applied externally.**

JOHN WELCH was charged with the manslaughter of Jane Genever, at the parish of Hagley, in this county, in the month of May last. Mr. Whitmore appeared for the prosecution; Mr. Yardley for the prisoner. The prisoner for some years past has carried on the business of a chemist, druggist, and seedsman at Stourbridge, in this county. The wife of the prosecutor, about a month before the 11th of last April, observed upon the head of the deceased child, Jane Genever, aged five years, and two younger children, a number of small rough places upon the skin; finding that they increased in number and became scabs, she took them all with her to the prisoner's shop. On that day he examined their heads, and gave her a box of ointment and some powders; the ointment was to be rubbed on the head night and morning, and the powders to be taken every other night. Prisoner's directions were followed, and at the end of the ensuing week the children were again taken to the prisoner; he declared they were all much better, but that it would be best to take a little more, and make all right. The applications were repeated, and on the 26th of April, by the direction of the prisoner, the prosecutrix took a small phial to his shop; he poured into it two clear liquids, and then ground up in a mortar a substance like saltpetre; this he shook up with the liquids in the bottle, and gave it to her, stating that it was poison, and she was to see that no one drank it; if she followed his directions, there was no danger. The directions were to divide the contents into three parts, and rub it into the scurf of the skin of the three heads until it was absorbed, and then comb the hair out, and take no further notice about it. She obeyed his order, and commenced upon the children; about three or four o'clock she tried it first upon the deceased, and then upon the other two the same evening. They cried during the operation, and about three hours after complained of pains in the head and bowels, they vomited, and were violently purged. This continued all the Saturday. The deceased grew gradually worse and worse. There were blisters on the forehead on the Sunday. She

sent then for the prisoner, and on the following day for Mr. Cooper, a surgeon, who gave her directions to give to the children every three or four hours a bottle of medicine, wash their heads with soap and water, and apply some cooling ointment afterwards. Mr. Cooper saw them every day, when a change was made in his treatment. A lotion was given for the mouth on the Wednesday following, in consequence of great swelling of the gums. The child gradually sank, and died on Saturday the 3d of May.

Mr. Cooper, the surgeon who was called in, deposed to the state the deceased was in upon his first visit. She was approaching a state of salivation. After death Dr. Fox and Mr. Cooper made an examination; the mouth contained livid patches of mortification; the gums were in a complete state of sloughing, and the head was covered with a scaly crust of purulent matter. The stomach and intestines presented signs of inflammation. The cause of death proceeded, in his opinion, immediately from exhaustion arising from a sloughing of the mouth, produced by mercury entering the system in some way, either externally or internally. The symptoms presented by the child might have been produced from rubbing into the head a strong preparation of mercury; so strong an application, to his mind, was most reprehensible. In the opinion of the witness the application consisted of corrosive sublimate. Upon cross-examination he admitted that in his practice he used mercury for children, and trusted the parents of the children to administer it. Children were less susceptible of mercury than adults. A very small dose indeed of mercury sometimes produced very bad effects, even when administered for the best purposes.—Another witness, Dr. Fox, of Hagley, who assisted in the post-mortem examination, and saw the deceased alive on the 1st of May, corroborated the statement of Mr. Cooper as to the condition she was in and the cause of death, and gave it as his opinion that it could never be safe to order such an application as would produce the appearances which he saw. This witness, upon cross-examination, admitted he had used in his own practice a preparation of mercury for the ringworm.—A third surgeon was called, and stated that the cause of death, in his opinion, proceeded from exhaustion, produced by mortification. It would be wrong to apply mercury for the purpose here mentioned.—This was the case for the prosecution.

Mr. Yardley then took an objection that the indictment was not sustained. It charged the administering of a certain poison to the jurors unknown, whereas the whole of the evidence went to shew that the poison administered was mercury.—Lord

* This article was in type, and would have been inserted last week, but for the press of other matter.

Denman overruled the objection. — Mr. Yardley then made an energetic appeal to the jury upon the prisoner's behalf; he referred to the law upon the subject of manslaughter, caused by persons attempting to practise medicine. Prisoner was no empiric; he had been *assistant* for many years to a surgeon of large practice; he exercised his skill *to the best of his ability*; he was not liable for the unfortunate result here produced; the death was not caused by gross ignorance or negligence.

Lord Denman summed up, after some witnesses had been called to speak to the prisoner's character as a *skilful* and *able practitioner*. His Lordship remarked, that it was most important it should be known to all persons, *that if there is a great want of skill in the administration of dangerous medicines, the party administering them may be called upon to answer for the result at the bar of criminal justice: it was clear, however, that if a party did not happen to be a licensed practitioner, that of itself ought not to render him liable for the consequences of a fatal administering of medicine*. His Lordship went through the evidence, and left it to the jury to say whether there was proper caution used by the prisoner in administering the medicine, and whether, in their judgment, he had made proper inquiries and watched carefully the effect of the medicine; if they thought he ought to have given more specific directions for the application of the medicine, and that gross want of care and negligence were exhibited by him, they would find him guilty; if they were not satisfied of this fact, they would acquit him.—The jury pronounced him *Not Guilty*.*

[REMARKS.—It is to be regretted that, in this case, a part of the lotion could not be procured for analysis. The quantity of corrosive sublimate (for it seems probable that this was the active ingredient) might have been such as to bring it within Lord Denman's rule for making licensed or unlicensed practitioners responsible—it might have been thereby shown, that there was a *great want of skill* in applying a very large dose of a dangerous medicine to a diseased and absorbing surface. The fact that there were violent pains in the head and bowels, with vomiting and purging, in *three hours* afterwards, followed by salivation and

sloughing of the gums, appears to show that the quantity of poison used must have been large; but it was not proved that mercury was contained in the lotion at all; the opinion appears to have been entirely inferential. The symptoms favoured this view; but from the report, we gather that not one of the three medical witnesses made the attempt to detect mercury in the scalp or viscera. The defence was not that the prisoner had a right to dabble in poisons; but that he had been *assistant* to a medical practitioner, and had exercised his skill to the *best of his ability*: we learn also, that he was a chemist and druggist and seedsman! The first plea shews how easily persons may, in this country, assume to themselves, without any guarantee for medical knowledge, the right of dealing with human life; the second would be equally available for any old woman who poisoned a child with syrup of poppies, or for a village grocer who prescribed arsenic for the itch! The justification of a free trade in physic thus appears to be, that a quack may poison you, provided he only acts to the *best of his ability*!

We cannot close these remarks without quoting the opinion of an eminent writer on Criminal Law. Mr. Alison, in reference to cases of this description, says, quoting the authority of Lords Coke and Hale—"If a physician or surgeon give a patient a potion or plaster, intending to do him good, but, contrary to expectation, it kill him, this will, in the general case, be considered as misadventure. But if the medicine were administered, or the operation performed, by a person *not a regular physician or surgeon*, the killing would be manslaughter. Nay, the same will hold if the pretended remedy be obviously and notoriously *perilous* and *unsuitable* for the particular case where it produced fatal consequences, an instance of which recently occurred in the conviction of Mr. St. John Long for manslaughter at the Old Bailey."—*Principles of the Criminal Law of Scotland*, 152. We certainly are at a loss to reconcile the acquittal of the prisoner in this case with the conviction of St. John Long. Both acted to the best of their ability, both employed a dangerous external application freely; but we must suppose, that while St. John Long showed great want of skill in the application, the chemist and druggist did no more than is safely recognized by the rules of a profession of which he is not a member!—ED. GAZ.]

* This trial furnishes a striking commentary upon the remarks which we made in our last number (p. 560). We have here the result of non-professional persons prescribing for "common and ordinary ailments," because it is cheaper for the poor to employ a chemist than a regular practitioner. Those who oppose the introduction of a prohibitory clause for restricting persons from acting as apothecaries, should at least suggest some method for protecting the lives of the poorer classes.—ED. GAZ.

HOOPING COUGH.

A CORRESPONDENT of the *Lancet* recommends in the treatment of this disease, as it affects children, fifteen or twenty drops of diluted sulphuric acid mixed with sugar or syrup three or four times a day.

Correspondence.

ON THE HYDROPATHIC SYSTEM.

To the Editor of the Medical Gazette.

SIR,—As the practice of hydropathy has been much brought forward of late years, I think it may prove interesting to many of your readers, if I draw their attention to the practice of it in the year 1788, at the pool of Grallibois, near Clones, in Ireland, a spot become celebrated through all the neighbourhood from the number of cures performed upon persons labouring under jaundice.

The account before me (which I have recently discovered), was published by Dr. Sims, in the second volume of the Memoirs of the Medical Society of London, and is briefly as follows:—

The patient was placed in the pool, composed apparently of water, derived from a neighbouring bog, and additional water was thrown over his head, until he was perfectly wet through, a shirt being his only garment; in this state he was placed in bed, where a profuse perspiration soon broke out, lasting many hours.

This operation was performed three times, and the patient was always cured. The relief is described as so sudden, that many patients had a strong craving for food, when they left the bed.

Dr. Sims made some experiments with soft water from other sources, and found the result to be the same, thus proving the effect to be in the method of cure, and not in any specific influence exercised by the water; yet I am not aware that the plan has been followed elsewhere.

Perhaps one of your correspondents will inform us whether the pool still performs its cures, or what use is now made of the knowledge thus afforded. It appears to me that the principle of curing jaundice by the induction of profuse perspirations, by any means most applicable, might very fairly be made use of in some of our large medical establishments, and with every probability of advantage to the patient.—I remain, sir, &c., &c.

T. W. J. MERRIMAN, M.D.

34, Brook Street, Grosvenor Square,
July 21st, 1845.

ON THE ALLEGED DISCOLOURATION OF THE NAILS BY THE INTERNAL USE OF NITRATE OF SILVER.

To the Editor of the Medical Gazette.

SIR,—I have perused with much pleasure, your admirable strictures, upon Dr. Heller's case of Epilepsy, treated with nitrate of silver, to which he had appended an analysis of the blood of the patient.

I should not trouble you with this com-

munication, were it not for one of your own remarks, (at page 129, No. May 16th.) You observe, "it is singular, that while the hair does not become discoloured, the nails have been observed to acquire a blueish tinge." Now, a case came under my observation, a few years ago, in which this blueish tinge of the nails was present. At first I thought that the albuminous substance was stained with the silver; but upon removing portions of the tips of the nails they were found quite colourless; I therefore concluded that the nails were sufficiently translucent to allow the discolouration of the matrix to be imperfectly seen through them. I was confirmed in this opinion by the colour becoming deeper in proportion as I thinned one of the nails by scraping it with a piece of glass.

"In publica commoda peccem
Si longo sermone morer tua tempora."

I therefore hasten to subscribe myself, Sir,
Your obedient servant,

JONAS MALDEN, M.D.

20, Foregate Street, Worcester,
July 1845.

[The statement to which our correspondent refers, was made on the authority of Dr. Biett. The fact observed by our correspondent renders his explanation of the cause of the blueness of the nails, in the highest degree probable.—ED. GAZ.]

Selections from Journals.

PHYSIOLOGY.

HÆMORRHAGE FROM AN ULCER ON THE ARM, CORRESPONDING WITH THE MENSTRUAL PERIOD. BY PROF. D'OUTREPONT.

A WOMAN of scrofulous diathesis, the mother of four children, was the subject of periodic hæmorrhage coinciding with the appearance of the catamenia. M. Outrepont, when in attendance on her in her fourth confinement, learnt that she had, three years previously, received a blow on the right arm; and that, on the accidental removal of the cicatrix which had formed over it, hæmorrhage ensued to a great extent for a whole day, but was at length arrested by a compress. This, however, in consequence of the extreme suffering of the woman, was removed; the hæmorrhage recurred, and the symptoms disappeared. The hæmorrhage continued till the catamenia, which were at that time present, ceased to flow. A scab of a deep brown colour, very hard, about an inch in diameter, and raised about half an inch above the surface, then covered the wound until the menstrual period returned, and the hæmorrhage was repeated. The patient was thus affected for two years and a half, when she

became pregnant: the hæmorrhage, with the catamenia, ceased, and did not reappear until three months after delivery, when the catamenia returned. The infant lived but three days.—*Gazette Médicale*, 1845.

ON THE RELATION OF THE QUANTITY OF CARBONIC ACID RESPIRED TO THE FREQUENCY OF THE RESPIRATION. BY DR. VIERORDT, OF CARLSRUHE.

THE author has arrived at the following results from his numerous researches and experiments.

1. The quantity of carbonic acid expired depends in an appreciable degree on the frequency of respiration.

2. The air expired, *ceteris paribus*, contains less carbonic acid as the respiration becomes more rapid, and vice versa. This confirms the physiological law, that secretions and excretions are richer in substance as they are smaller in quantity.

3. The influence of the frequency of the respiration upon the quantity of air expired can be computed with greater ease when the breathing is slow.

4. Each expiration, whatever may be its duration, corresponds to a constant amount of 2.5 per cent. of carbonic acid; to which is added a fresh quantity of the acid in exact proportion to the duration of the respirations.

5. The quantity of carbonic acid breathed in a given time by frequent respirations, is on the other hand much greater than that formed by slow respiration.

6. The number of inspirations is a better index of the excretion of carbonic acid,—the one generally increasing in the same ratio as the other.

7. The absolute quantity of carbonic acid produced during perfectly tranquil respiration, is to that produced during the most frequent expirations as 1 : 8.

8. The quantity of carbonic acid contained in the blood is very large; as by active respiration 1800 cubic centimetres (=707 cubic inches) of carbonic acid may be evolved in a minute.

9. During healthy respiration about 6 per cent. of the carbonic acid circulating in the lungs is excreted.

SURGERY.

DISLOCATION OF LARGE JOINTS REDUCED BY POWER DERIVED FROM TWISTED ROPE. BY D. GILBERT, M.D. PROFESSOR OF SURGERY IN THE PENNSYLVANIA COLLEGE.

EVERY practitioner knows that the reduction of luxations of the large joints cannot easily be accomplished without the steady, equable, and continued traction furnished by the careful and patient use of the pulleys.

These often cannot be obtained when needed, and the power resorted to then, is that which may be furnished by awkward and unskilful assistants. Under such circumstances, the efforts at reduction are protracted, unsteady, and, in most instances, unsuccessful: great force is applied by sudden starts and irregular jerks, which, with bleeding, warm baths, and sedative medicines, exhaust the vital energies of the patient, probably without reducing the luxation; and cases are not wanting in which serious additional injury has been inflicted upon the parts concerned, by such procedures.

The power furnished by *twisted rope* answers every indication, requiring extensive power, as perfectly as the pulleys, and is, indeed, preferable on account of its simplicity and availability in every possible situation, enabling the surgeon even to dispense with assistance, should that be necessary. The credit of first using this power is due to P. Fahnestock, M.D. of Pittsburgh, Pa. He was led to its trial by necessity, and the result was so satisfactory that he has resorted to it in every case which he has met with since.

The mode of application is as follows:—Place the patient and adjust the extending and counter-extending bands as for the pulleys: then procure an ordinary “bed cord” or “wash line,” tie the ends together, and again double it upon itself; then pass it through the extending tapes or towel, doubling the whole once more, and fasten the distal end, consisting of four loops of rope, to a window-sill, door-sill, or staple, so that the ropes are drawn moderately tight; finally, pass a stick through the centre of the doubled rope, dividing the strands equally by it: then, by revolving the stick as an axis or double lever, the power is produced, precisely as it should be in such cases, viz. slowly, steadily, and continuously, which, with the aid furnished by the surgeon to the immediate seat of lesion, and to the system in general, cannot fail to conduct the case to a happy issue.—*Amer. Journal of the Med. Sciences*, April 1845.

THE RADICAL TREATMENT OF TOOTHACHE.

IF the pain be violent, the practitioner will gently, and with extreme care, wipe out the cavity with soft cotton wool, or the more pulpy portion of lint: he will thus be enabled to detect the presence of any foreign matter, which he will cautiously remove; he will then insert some anodyne, camphor, and opium, the muriate or acetate of morphia, or simply a little wool saturated with the Tinct. Opii. This will allay present pain, but he will be anxious to do more, and in order to do this, he will, with a sharp cutting instrument, remove a layer of

carious bone, and at the same time, by a sharp and dexterous movement, will excise the exposed surface of the pulp. This may be effected with little pain, if done unhesitatingly and with decision; nay, in most cases without the knowledge of the patient. We have now a bleeding, instead of an inflamed and highly tense surface, and if we now apply* a few granules of the white oxide of arsenic, an eschar is formed in the course of a few hours, which will be totally insensible, and capable of sustaining pressure. The cavity, in this case, should be well guarded by being sealed up with wax, and it should be retained for not less than six hours. When thus treated but little pain will be experienced, in the majority of cases not amounting to more than uneasiness, and this of half an hour's duration. In less fortunate cases, however, the pain does not acquire the intensity of ordinary toothache, and is found to be entirely subdued by copious warm fomentations. When this previous excision is omitted, and the arsenic is applied directly to the already inflamed surface, much more acute suffering is induced, and in such cases it is usual to combine with the escharotic some anodyne effect. For this purpose morphia has been employed in various proportions; some practitioners, however, and I confess myself amongst the number, prefer to apply the arsenic on a pledget of wool or lint which has been previously dipped in creosote.—*Mr. Saunders, in the Forceps.*

PATHOLOGY.

UNNATURAL SLEEP.

CASE under Professor D'Outrepont.—C. X. a woman, 35 years of age, had been married six years, and was the mother of four children. Since her marriage, she had, at regular intervals of time, fallen into a deep sleep, occasionally lasting from two to seven days, but generally five days and a half; commencing indifferently either by night or day, and never preceded by any warning. Once in 24 hours she *half* awoke, with the mouth dry, and the tongue thrust through the lips. At these times some liquid nourishment was given, which she *unconsciously* took, and immediately fell asleep again. The intervals were from two to twenty days. Neither season nor temperature had any influence. Menstruation, pregnancy, and delivery, were not affected by the sleep, which, in such cases, was merely less refreshing, and the patient awoke fatigued. During the sleep she passed neither motions nor urine. She was insensible to all irritation, and always awoke spontaneously. On opening the eyelids, the eye was observed to be

directed upwards; and the pupils did not contract under the stimulus of light. The respiration, circulation, and temperature, were always natural.—*Gazette Médicale.*

CASE OF SUFFOCATION IN AN INFANT, BY RETRACTION OF THE BASE OF THE TONGUE, CONNECTED WITH DEFECT OF THE FRÆNUM.

At birth the child, which was the subject of this case, was large, and apparently healthy; it cried lustily. The face presented a peculiar conformation; the superior part projected forwards, and gave a sharp appearance to the countenance; while the lower part was much depressed, the chin presenting a small flattened surface, instead of the rounded and projecting natural form; the expression of the countenance was similar to that observed in individuals who have had the body of the lower jaw excised. On looking into the mouth, Dr. P. Fairbairn (who records the case) detected a fissure in the soft palate, which allowed the posterior nares and the vomer to be seen; the alveolar processes of the lower jaw were opposed to the back part of the hard palate above, and the tongue, which appeared short and thick at its root, lay posterior to the palate, the apex alone projecting. On the second day after birth an attempt was made to apply her to the breast, but it was found that she could not suck. Shortly after this the breathing became oppressed and irregular, with occasional heavy sighing; the face and extremities assumed a purplish tint; the heart beat regularly; the child lay in a state of profound sleep, from which it could not be roused, and died in the afternoon of that day. Upon examination after death, it was found that, besides great malformation of the lower jaw and posterior nares, the tongue, which was short and thick, was retracted into the cavity of the pharynx, its convex dorsal surface resting upon the posterior wall of that cavity, and its base pressed upon the epiglottis and arytenoid cartilages, so as completely to obstruct the entrance of air into the larynx. The frænum appeared to be wanting, or was so slightly developed, as not to bind down the lower surface of the tongue to the usual amount.

Dr. Fairbairn also relates the history of another child, which presented very similar malformation of the lower jaw, with deficiency of the palate. From this malformation, it was found that he could not suck; he was therefore nourished by dropping milk cautiously into the mouth. About the third month he began to suck the thumb of the left hand, the palmar surface being carefully applied to the deficiency of space in the soft palate, whilst the fore and middle fingers were applied to the left side of the nose.

* Of course no patient should ever venture to apply this escharotic himself.

This showed a very remarkable and striking provision of nature, by which the defect was remedied, and he was enabled to take in his nourishment, and swallow with perfect safety, without any feeling of irritation in the nostrils, or sense of choking. His food was given to him with a spoon, or, more frequently, with a bottle furnished with a teat, which was conveyed by the side of the thumb into the mouth, and allowed to be sucked in. When he felt hungry, he never failed to apply his thumb, and commence sucking. He continued in this way until he began to feed himself about his second year, when the use of the thumb was discontinued. —*Northern Journ. of Medicine.*

EXTIRPATION OF THE OS COCCYGIS FROM NEURALGIA. BY J. O'NOTT, M.D.

THE subject of this case, a lady about 25 years of age, had been suffering from derangement of her general health, and neuralgia, for ten months before she came under Dr. Nott's care, at which time her condition was deplorable. Suspecting that disease or displacement of the coccyx had become a source of irritation to one or more nerves in its vicinity, Dr. N. made an examination of the whole spine, and found no tenderness of any consequence until his finger touched the point of the coccyx, when the patient screamed with pain. Dr. N. then proposed extirpation of the bone, to which the patient consenting, it was performed by making an incision down to the bone, and extending it from the point upwards of two inches. The bone was then disarticulated at the second joint, the muscular and ligamentous attachments divided, and without much difficulty the two terminating bones were dissected out. The last one was found to be carious, and hollowed out to a mere shell; the nerves were exquisitely sensitive. The operation, though short, was attended with extreme suffering. For several hours after, the pains were extremely violent, coming on every ten or fifteen minutes, and accompanied by a sensation of bearing-down, like labour pains. Morphine in great doses, and other anodynes, afforded no relief, but the pains became gradually less frequent and less violent. The wound soon healed, and at the end of a month the local disease disappeared, and the general health was much improved.

About two months after the operation the patient was seized, a few days after her catamenial period, with violent pains in the back, uterus, vagina, neck of the bladder, &c. but none in the coccygeal region; the symptoms were scarcely at all relieved by treatment, but the attack passed off of its own accord. Similar attacks occurred after the two subsequent catamenial periods. Dr. N. put the patient on the use of citrate of

iron, 5 grains three times a day, and continued it steadily on through the month: the next expected attack did not come on, and he continued the iron twice a day through the second month, when she passed over the second time, and he then discontinued the medicine.

When Dr. N. saw her last, she had been three months without an attack; her health, which was always delicate, had become pretty good, and she was riding about, and taking her part in society as usual, after more than a year of seclusion.—*New Orleans Med. Journ.* May 1844; and *American Journ. of Med. Sciences*, October 1844.

FALLOPIAN PREGNANCY: DEATH FROM INTERNAL STRANGULATION OF THE SMALL INTESTINE.

AT the Birmingham Pathological Society, Mr. John Elkington brought forward a specimen of right fallopian pregnancy. The uterus and ovaries were normal. In the uterine extremity of the right fallopian tube was developed a tumor about the size of a seven months' foetal head, which pressed upon the colon and the ileum near to the ileo-cæcal valve, to which intestines it had formed adhesions. The tumor contained the bones of a three months' foetus, which were folded around what appeared to be a fibrinous clot about the size of a small orange.

CASE.—Mrs. Jones, aged 40, in the year 1840, believing herself to be about four months advanced in pregnancy, was seized with uterine hæmorrhage, and was supposed to have aborted. For several months the menses returned at intervals of from two to six weeks, after which they returned at the usual periods till her death. Soon after the attack of hæmorrhage, a tumor was discovered in the situation of the right ovary; at that time it is said to have been about the size of a large orange, rather soft, and moveable, and that during a space of six months it gradually subsided, until it became fixed in the position it occupied at her death. For five or six months after her recovery from the supposed abortion, she was frequently seized with sickness and fainting, accompanied with painful contractions of abdominal muscles. Near the end of 1840, after some increase of pain in the seat of the tumor, the bowels became obstinately constipated, with pain, distension of the belly, and vomiting of fecal matter, from which she was relieved on the ninth day after her medical attendant had pronounced the case hopeless, by a spontaneous evacuation; and she rapidly recovered, leaving for some time a sense of constriction in the seat of the tumor, which was very tender to the touch. The fainting, sickness, and painful contractions of the abdominal muscles never returned. In June 1844, she was suddenly seized with pain in

the bowels, and vomiting, with distension of the abdomen, which increased till her death. During the three last days the fluid vomited had the odour of fæces: no evacuation was obtained, and she died on the ninth day.

Post-mortem examination sixteen hours after death.—No traces of inflammation in the abdominal viscera; the uterus and left ovary were perfectly healthy; in the left iliac fossa was found the tumor which had been felt during life, about the size of the foetal head at seven months; it adhered firmly to the surrounding parts, the cæcum being attached to its outer border, and the termination of the ileum to its upper, in the front of which two bands of omentum connected themselves with the tumor, forming an aperture of about an inch in diameter, through which a fold of the ileum had passed twice, the bands of omentum constricting the bowel and obstructing the passage of the fæces.—*Provincial Med. and Sur. Journal.*

THERAPEUTICS.

TREATMENT OF ECZEMA.

PROFESSOR OTTO, of Copenhagen, has successfully used the tincture of cantharides in four cases of eczema, and in six of psoriasis. The dose on the first day was three drops, and on each succeeding day a drop was added, for the six or seven weeks during which the patients remained under treatment.—*Gazette Médicale.*

APHONIA FROM THE USE OF CINCHONA IN INTERMITTENT FEVER. BY DR. MILING, OF EMSDETTEN.

A BOY, twelve years old, was attacked with ague, and his father, a labouring man, gave him an ordinary dose of Peruvian bark in powder. The ague left him, but the boy suddenly lost his speech. When I saw him he appeared quite recovered; his pulse was regular, he had a good appetite, and slept well. He had, however, entirely lost his speech, and was unable to make the slightest sound. His hearing was good, and he played cheerfully with his companions. The tongue, larynx, and throat, were carefully examined, but without the discovery of anything abnormal. The dumbness continued for a year, during which period all kinds of remedies were employed, and even the aid of "homœopathy and sympathy" was called in, but in vain;—when suddenly the boy had another attack of intermittent fever, and he then regained his speech. A mixture of muriate and acetate of ammonia was ordered; the fever left him in a fortnight, and he perfectly recovered.

I knew another case, in which a woman, æt. 22, lost her voice but not her speech, after the use of Peruvian bark given for an attack of intermittent fever. The fever disappeared, and she suddenly became hoarse; she could speak in a whisper, but could produce no

sound. In this case, too, in spite of treatment, the aphonia lasted a whole year. She was then attacked with catarrhal fever and cough, and her voice gradually returned.—*Casper's Wochenschrift*, März 1845.

TOXICOLOGY.

ACETATE OF IRON AS AN ANTIDOTE IN POISONING WITH ARSENIC.

THE hydrated oxide of iron is considered to be an efficacious antidote in cases of arsenical poisoning, when either pure arsenious or arsenic acid has been taken. Duflos' experiments have, however, shewn that it has no effect when the acid of arsenic is combined with a base, as in the form of arsenite of potash (Fowler's solution).

In this case, as well as in all instances where the nature of the arsenical poison is unknown, the acetate of iron will be found to be a preferable antidote. This is made by mixing the hydrated oxide obtained from four parts of a strong solution of sesquichloride of iron with three parts of acetic acid (sp. gr. 1.06), and adding so much water as to make up the whole to sixteen parts. This compound, which is a solution of acetate of iron with excess of oxide, precipitates arsenious, or arsenic acid, either in the free or combined state, from all their soluble combinations. One part of this "Liquor ferri oxydati Acetici" will entirely decompose and precipitate four parts of Fowler's solution. The action of the antidote takes place more rapidly in proportion as it is diluted, and in this state the acetic acid can do no harm.—*Heller's Archiv. für Physiol. und Pathol. Chemie*, 1844.

[REMARKS.—It is to be regretted that those who report the efficacy of particular substances as antidotes in poisoning, do not, in the first instance, ascertain by experiment whether the chemical changes take place in the manner described. According to our observation, the acetate of the sesquioxide of iron, made by digesting pure acetic acid to saturation upon hydrated oxide of iron, either concentrated, or diluted to any degree, does not precipitate, or combine in any way, with arsenious acid. The acetate precipitates, but only partially, a solution of an arsenite, and there is no difference in the effect whether the acetate be concentrated or diluted. Arsenic acid and the arseniates give a dense white precipitate with the acetate; but unless this be added in large quantity, the liquid still retains sufficient arsenic to act injuriously. Admitting it to be a perfect precipitant of arsenic acid, this is not a substance for which an antidote is required. We never heard of a case of poisoning by arsenic acid; Dr. Christison does not even mention it as a poison in the last edition of his work, although he refers to two cases of poisoning by arseniate of potash.—*ED. GAZ.*]

Lectures.

CLINICAL LECTURES ON SURGERY.

By B. COOPER, Esq. F.R.S., &c.

Perforation of the Cæcum. Peritonitis. Death.

J— F—, a healthy-looking man, of florid complexion, æt 64, a tailor by trade, was admitted on the morning of Thursday, June 12th, 1845, into Cornelius No. 5, for tympanitis. He has been ruptured for the last five or six years, but cannot assign any exciting cause for it. The hernia is reducible, and he wears a truss. On the morning of June 7th (five days ago) his belly began to swell, for which he took various cordials and purgatives, but had no motion till Tuesday the 10th, since which his bowels have not been opened. Mr. Bossey, of Woolwich, sent this case to the hospital, and with it the following history; that he (Mr. Bossey) had been sent for by the patient three days ago, in consequence of his labouring under a constipated state of bowels, with sickness, tympanitis, considerable restlessness and uneasiness. Mr. Bossey discovered upon examination that he was the subject of an umbilical hernia, and also of a hernial protrusion in the right inguinal canal. Both of these herniæ were reducible, the umbilical readily so, but the inguinal requiring considerable manipulation to return it, but which was effected. Constipation still continuing, after the reduction of the herniæ the patient was sent to the hospital. When admitted his abdomen was tumid and tense, rendering respiration difficult; but emitted a clear sound upon percussion. Mr. Cooper saw him in the afternoon, and ordered a flexible tube to be passed for a considerable distance up the rectum, and an injection of castor oil to be administered. This was performed by Mr. Hilton, who discovered an obstruction caused by scirrhus of the rectum about five inches from the anus. He passed the tube through this, along his finger, for a distance of about two feet. Very little gas escaped. He then washed out the bowel with warm water, and brought away some hardened feces; and then injected the castor oil. This somewhat diminished the tympanitic state of the abdomen.

June 13th.—Bowels have been opened once since the enema; but the abdomen remaining as tumid as before. Pulse 116, rather hard, full and compressible; tongue loaded with a white fur. Mr. Cooper ordered the tube to be again introduced, and some warm house medicine to be injected.

To take three grains of calomel and half a grain of opium directly.

14th.—Continues much the same. Bowels have been opened several times, but the tympanitic state of the abdomen is undiminished.

Mr. Cooper made the following remarks upon this case:—Upon admission, or rather when I first saw this patient, I was struck with the absence of all the symptoms of strangulated hernia, and gave it as my opinion that he laboured under some obstruction in the large intestines: the little sickness, the comparative slight degree of constitutional disturbance, and the absence of what is termed stercoraceous vomiting, led me to this conclusion. And there may perhaps be a reason assigned for the symptoms being more urgent when the small intestines are obstructed; for in proportion as the obstruction is nearer to the stomach, so is the function of assimilation the more interfered with, giving rise of course to a corresponding degree of disturbance in all the other functions of the body. As the tympanitic state of the abdomen had again increased after the first introduction of the tube, I ordered it to be repeated. Upon passing my finger into the rectum to examine the disease of that bowel described by Mr. Hilton, I could not reach sufficiently high up satisfactorily to examine the nature of the malady, and only felt somewhat thickened folds of mucous membrane. I suspected, therefore, some disease in the large intestines higher up; but not interfering with the passage of the contents of the small into the larger bowels.

This patient, on the night of Saturday the 14th, was suddenly seized with violent pain in the abdomen: the dresser was called up, who found him writhing with agony; great increase of abdominal swelling, no sickness, great prostration, and every evidence of approaching dissolution, and about five o'clock on Sunday morning he died.

Section cadaveris, twenty-nine hours after death.—The abdomen was enormously distended, but the external appearance of the rest of the body was that of a healthy man. Whilst opening the abdomen a quantity of very foetid gas escaped, and the parietes collapsed. Fæces were found spread over the surface of the peritonæum. A small portion of the small intestines were glued together by recently deposited lymph, and they were minutely injected. The large intestines were enormously distended, and their coats thin. In the cæcum there was found a perforation about the size of a shilling, and its peritoneal surface was congested and of a dark colour. Upon laying it open there was exposed a large oblong whitish slough, at one end of which was situated the perforation. The ileo-cæcal

valve was healthy; nor was there any source of interruption to the passage of the contents of the small intestines through it. Upon removing and laying open the rectum, it was found contracted at its upper part for about two inches, with the coats thickened and indurated, and its mucous surface ulcerating and sloughy at that part. About three inches from the margin of the anus were one or two transverse folds of mucous membrane. The brain and thoracic viscera were not examined. There can be no doubt that the cœcum had been the contents of the inguinal hernia, and its nutrition deteriorated by its protrusion.

Strangulated Hernia. Operation.

J. C., a strong, healthy-looking man, of dark florid complexion, aged 47, was admitted on Saturday, June 14th, for strangulated inguinal hernia. Is employed as a lead-smelter. Has always enjoyed good health, and been accustomed to take three or four pints of porter daily. Several years ago he became ruptured on the right side, and wore a truss. After a time the left side became similarly affected, but he did not apply a truss, because, when the hernia came down, which seldom happened, he was able with ease to reduce it himself. For the last two years he has altogether left off wearing a truss. On Friday, the 13th, he was employed in taking down a furnace, and had occasion to lift a very heavy weight of lead, when he felt the hernia suddenly descend on the left side. He laid down and returned it, and felt no more of it till the evening, when it again descended, and he was unable to reduce it. He shortly after left off work, and went home to bed. The next morning he returned to his employment, the hernia being still down, but found himself incapable of doing anything, feeling sick, and having a sense of constriction around the abdomen, with slight pain in the hernia. He therefore went home to bed again, and being unable to return the hernia, after several efforts, he came into the hospital. He had slight motions during the day.

When admitted the taxis was applied, but unsuccessfully; he was therefore placed in a hot-bath, and the taxis again had recourse to, but without effect. Ice was then applied for the space of two hours, but as no diminution in the size of the tumor took place, and all the symptoms continued, Mr. Cooper was sent for, who, after ineffectually applying the taxis, recommended the operation, which was consented to by the patient, and accordingly forthwith performed. *Trie. Opii. ℞i.* were given after it was finished.

15th.—Mr. Cooper saw the patient at half-past six, A. M.: he had slept well; his pulse was 90, he was perfectly free from

pain, even upon pressure of the abdomen, had no sickness, passes his urine freely, but has had no motion.

At 4 P. M. remains much in the same state: still no alvine evacuation.

16th, 12½ P. M.—Pulse 92. Tongue white and rather dry; has passed a most comfortable night, no motion, no sickness. Urine quite natural, both in quantity and quality. Ordered beef-tea; has taken bread and butter and tea for breakfast.

17th.—Passed a small but healthy motion this morning at 4 A. M.,—no blood with it. Has no pain on pressure of the abdomen; no sickness. Seems in every respect going on well. Continue support, and ordered wine to be given if he became weaker.

18th.—This morning was ordered some wine; has not had any motion since yesterday morning, but appears in every respect to be going on well. The wound was dressed, and looking remarkably healthy.

19th.—Slept well. Pulse 76. Passes his water freely; no motion, no pain on pressure of abdomen, which is soft and free from tension. Tongue clean. Countenance perfectly free from anxiety. To take plenty of support and wine.

From the 19th up to the present day, the 24th of June, there has been no change for the worse, although he has not had a motion since the 17th inst., a period of eight days; still he is perfectly free from pain, tension of the abdomen, or inconvenience of any kind; and therefore I have refrained from giving him any purgative medicine, believing that the torpid state of the bowels is the best possible condition for the progress of restoration from the mechanical injury they had sustained.

Thus symptoms continued until the 28th, having, in fact, since his admission into the hospital, on the 14th inst., had no alvine evacuation, excepting a very inconsiderable motion on the 17th, and yet he remained perfectly free from every urgent symptom usually arising from so protracted a constipation, not even tension of the abdomen being present. I persisted, therefore, in not disturbing the bowels by the administration of purgatives, and only advised such a dietetic regimen as was likely to induce an easy passage through the bowels.

On the 28th of June he passed a large solid motion, without pain, or the slightest tinge of blood. The next morning I ordered him half an ounce of castor oil, which produced several evacuations, and he is now, the 20th of July, perfectly well in every respect.

REMARKS.—Upon examining the tumor on my arrival at Guy's, from the facility with which air was pressed out of the protruded intestine I had a sanguine ex-

pectation of being able to reduce the hernia, and was prompted to persist in the attempt for a considerable time, more particularly as I was able readily to pass the point of my fore-finger through both the external and internal rings. I could not, however, succeed, and although I considered the patient as labouring rather under the symptoms of an obstructed than a strangulated hernia, I still recommended him to submit to an operation. Before I operated I expressed the opinion, that I should find the internal ring so large as to render the use of the director quite unnecessary, or the division of the fascia, and that the cause of the insuperable difficulty of returning the intestine would be found to be the quantity of protruded intestine. I also prognosticated that I should be obliged to open the hernial sac from the same cause. I performed the operation in the usual manner, and divided the stricture external to the sac very freely, but still could not return the contents of the sac, as I had foretold. I therefore proceeded to open the peritoneal covering and exposed a large portion of intestine as big as a cocoa-nut, and looking very like the cæcum, all being of opinion that it was large intestine. I attempted to return it into the abdomen, but after several efforts was foiled. I therefore enlarged the opening, and ultimately succeeded; although perhaps there might justly have been some difference of opinion of the propriety of so doing, in consequence of the condition of the bowel, there being an abrasion on one part of the intestine, as if the peritoneal coat had given way, and ecchymosis surrounding and filling up the spot, and at another part there was a projection like the end of the finger of a glove, a kind of diverticulum, as if the two internal coats of the intestine had given way, and the peritoneal coat projected by some fluid or gas; both these conditions were probably the effects of the force employed by the taxis, or at any rate I thought the ecchymosis must have been so produced. I considered, however, that the intestine would stand a much better chance of restoration if replaced into its natural cavity, than if left in the scrotum, and therefore determined on doing so. I should mention that there was neither fluid or omentum in the sac, which rendered the intestine much more likely to be injured in the attempt to return it. Mr. Cock and Mr. Hilton, who were present at the operation, both agreed with me in the anomalous appearance of the contents of the sac. Cæcum, sigmoid flexure of the colon, and even bladder, were conjectured; but there can be no doubt that large intestine was the part protruded.

Original Communications.

ON THE COAGULATION OF THE BLOOD, AND OTHER FIBRINIFEROUS LIQUIDS.

By ANDREW BUCHANAN, M.D.

Professor of the Institutes of Medicine in the
University of Glasgow.*

DR. BUCHANAN showed some specimens of hydrocelic serum, the fibrin of which was coagulated by means of a few fragments of the *washed clot* of blood added to it some time before. The coagulated masses were transparent and tremulous, like calf-foot jelly, and so firm as to admit of being inverted on a plane surface without altering their shape. Dr. Buchanan made the following observations in explanation of the phenomenon.

The experiment exhibited to the Society, and the analogous experiments mentioned below, seem to me important, as serving to rectify some prevailing opinions as to the essential properties of fibrin, and the part which it plays in the coagulation of the blood, and certain other physiological processes. They are still farther interesting to me, as enabling me to correct some erroneous views of the constitution of the blood which I entertained, and which having been made public in the first volume of the "Proceedings of the Society," I feel it a duty to rectify.

The opinions commonly entertained by physiologists and chemists, to which allusion has just been made, are, that fibrin has a spontaneous tendency to coagulate: that this spontaneous coagulability is a characteristic property of fibrin, by which it is distinguished from albumen and casein: and that the coagulation of the blood, and of various other animal fluids, depends on the spontaneous coagulation of the fibrin which they contain. My experiments, on the other hand, show, that fibrin has not the least tendency to deposit itself spontaneously in the form of a coagulum: that, like albumen and casein, fibrin only coagulates under the influence of suitable reagents: and that

* Proceedings of Glasgow Phil. Soc. 19th Feb. 1845. Communicated by the author.

the blood, and most other liquids of the body which appear to coagulate spontaneously, only do so, in consequence of their containing at once fibrin and substances capable of reacting upon it, and so occasioning coagulation.

The liquid of hydrocele, and other dropsical liquids, are generally regarded by physiologists as identical with, or at least closely analogous to the "*liquor sanguinis*," or liquid part of the blood; which they suppose to be effused, both in health and in disease, from the capillary blood vessels into the serous cavities and cellular interstices of the body. I have elsewhere shown,* that of all these effused liquids that of hydrocele approaches most nearly in its qualities to the serum of healthy blood. In two cases in which the experiment was made, the specific gravity of hydroceleic serum and of the serum of blood drawn from the same individual on the same day, differed very little; and I have recently met with an instance of hydroceleic serum drawn from a very strong man having a specific gravity as high as 1.038, much higher therefore than the ordinary specific gravity of the serum of blood. I entertain no doubt, therefore, that the serum drawn off in cases of hydrocele, is, for the most part, identical with the liquid part of the blood. Such an opinion, however, can scarcely be held by those who believe the liquid part of the blood to be spontaneously coagulable; for, without controversy, the liquid of hydrocele possesses no such property, as I have ascertained by attentive observation in many hundred cases. If carefully drawn off, it may be kept till it putrefies without showing the slightest tendency to coagulate. If, again, as frequently happens, a little blood has been accidentally mingled with it, coagulation may ensue, not spontaneously, but from the re-action of certain elements of the blood upon the dissolved fibrin. This, if we leave out of sight the propensity to make facts bend to theory, is the only explanation that can be given of the assertion frequently made, but so inconsistent with observation, that the fluid of hydrocele is spontaneously coagulable.

What are the elements of the blood that have the power of causing fibrin

to coagulate? The washed clot of the blood is the most efficient. It is, perhaps, indeed, the only element of the blood that has the property of coagulating fibrine. The washed clot is the substance which is usually, but very erroneously, named the *fibrin of the blood*. It is best obtained* by mixing one part of liquid blood with from six to ten of water, and stirring them carefully for five minutes, so as to prevent the blood from falling to the bottom and coagulating unmixed. After the mixture has stood from twelve to twenty-four hours, it is to be filtered through a coarse linen cloth, and the product washed with water. The mass thus obtained consists, chiefly, of the insoluble portion of the red corpuscles; next of the colourless granules and globules; and least in quantity of the precipitated fibrin, by which these main constituents of the coagulum are agglutinated together.

Let a small quantity of this substance be mixed with the liquid of hydrocele, reducing it to minute shreds, and diffusing it equally through the liquid. Coagulation will ensue in many cases as rapidly as in the liquid blood itself. The coagulum is often quite distinct in from five to ten minutes. It becomes gradually firmer, and in the course of a few hours admits of being passed without breaking from one vessel to another, and very much resembles the transparent tremulous substance of calf-foot jelly. The power which the washed clot has of coagulating fibrin is not less remarkable than that of rennet in coagulating milk, to which, indeed, it may be aptly compared. This experiment is well adapted to the lecture-room—the reagent being added to the liquid serum at the commencement of the lecture, and the coagulated mass shown at the end of it. A very complete illustration of the process by which the blood coagulates may be exhibited by adding to the liquid along with the reagent, some pounded charcoal, the particles of which being diffused through the liquid, and getting entangled in the meshes of the nascent fibrin, there is formed a black clot, which, on the addition of a little water, swims in it, just as the blood-coagulum does in the liquid serum.

The washed coagulum retains its coagulating power for a long period—

* MED. GAZETTE, 1836.

* MED. GAZETTE, 1836.

even after its odour indicates the commencement of the process of putrefaction. In preserving it as a reagent, however, I think it advisable to add to it a small quantity of spirits, and to keep it in a stoppered phial. Thus kept, I have found it to retain for several months its power of coagulating fibrin. The serum of hydrocele is the more coagulable the fresher it is. It sometimes soon loses its coagulability on being kept, but more frequently retains it till putrefaction is far advanced. There is, therefore, no difficulty for any one repeating those experiments, and satisfying himself of their truth.

The experiment which I have described is very analogous to some experiments which I performed in the year 1831, and of which I afterwards published an account in the *LONDON MEDICAL GAZETTE*, (April 9, 1836). I then showed, that if the clot of blood reduced to the liquid state by kneading and expression through a linen cloth, be mixed with hydrocelic serum, the mixture recoagulates into a perfectly homogeneous solid mass, which, like the ordinary coagulum of blood, becomes florid on exposure to the air: and that if a portion of coagulum not so disintegrated be put into a vessel containing hydrocelic serum, a web of fibrin is gradually spun around the coagulum. I showed that these effects were not due to the colouring matter of the clot; but I did not try the effect of the washed clot, my attention having been called in a different direction, by finding that pure serum of blood and hydrocelic serum when mixed together underwent coagulation. On since discovering the efficacy of the washed clot in causing coagulation, I thought it probable that the minute solid particles, which the microscope never fails to detect in the serum of blood, were the agents to which the coagulation of the two kinds of serum when mixed together ought to be ascribed. This corresponded well with the observation which I had long before made, that the deeper the red tint of the blood-serum employed in the experiment, the better does it succeed. On the other hand, Dr. Anderson, in his paper "On the state in which fibrin exists in the blood,"* has shown that if the mixed liquids

be carefully filtered, so that no solid particles can any longer be detected by the microscope, coagulation nevertheless ensues; thus rendering it probable that the coagulating principle exists in the serum of blood not as a solid, but in a state of solution. It may, however, be objected to this experiment, that the blood-corpuscles pass through any filtering paper, however dense; and that it is impossible by filtration, to deprive turbid serum of the solid particles mechanically diffused through it.

In the summer of last year, after I had satisfied myself as to the power of the washed clot in causing coagulation, I tried the effect of the buffy coat of the blood, reduced to minute shreds, and diffused through the hydrocelic liquid, and found it, in numerous instances, to have a similar power. I even found, that the dried buffy coat from the blood of a horse, which I had kept for several months, on being pulverized and mixed with the liquid, induced coagulation. I found the effect of the colourless buffy coat to be much greater than that of the red clot. I also found the upper part of the red clot to have a stronger coagulating power than the lower part of it. These facts seemed to show that it was the colourless corpuscles of the blood in which the coagulant power was mainly seated. The colourless corpuscles rise to the surface on the blood being drawn, and, there exerting their coagulating power, render the upper part of the clot invariably much firmer than the lower part of it; and this is exactly what is seen in a more marked way, in inflamed blood, in which the colourless corpuscles are much more abundant, and rising by their levity to the surface, form a layer on the top of the red corpuscles; and thereafter, by their superior coagulating power, give rise to the firm crassamentum without redness which we name the buffy coat. As I knew the transparent coagulum, which we find on the surface of newly formed blisters, to consist chiefly of such colourless particles, I tried it as a coagulant, and found it to induce coagulation, although less powerfully than the washed clot of blood. The coagulum, formed artificially in hydrocelic serum by different reagents, seemed to have little coagulating power; as if the

* Proceedings of Glasgow Phil. Soc., vol. i. p. 201.

transparent granules of fibrin must not only be precipitated, but have acquired more or less of the organized vesicular shape which they have in the blood and in the blister-liquid, before they possess the power of coagulating. This power seemed, therefore, to be the result of organization, and analogous to the metabolic power which Schwann has ascribed to the elementary cellules. This view led me to think it probable, that all the tissues of the body might have a similar power of reacting upon the liquor sanguinis effused into their meshes, and thus contributing to their own development, by engendering there such vesicles as we meet with in the blister-liquid. My first trials made with the muscle and skin of beef well washed to free them of blood, did not succeed; but on trying the muscle of veal, I found it to produce coagulation. I afterwards recognized a similar coagulating power in the muscular substance of beef and veal, in white fish, skin, and cellular membrane: but the effect produced was less remarkable than that of the washed clot, and required a longer time, generally from one to three days. The tissue which answered best was the spinal marrow, probably in part from its great softness and diffusibility. On one occasion I found the spinal marrow of a bullock to cause coagulation in half an hour, the coagulum formed being very firm and beautiful. The substance of the brain seemed to have less power, although no rigorous comparison of them was made. Last of all, I found that the corpuscles of mucus from the Schneiderian membrane and throat possessed a coagulating power, though tardy: and that even the globules of purulent matter, which are just altered primary cellules, retained their coagulant power; for when put into hydrocelic serum, instead of continuing diffusible through the liquid, they agglutinated themselves together by the intermedium of fibrin, forming a white solid mass, such as we often see of smaller size on inflamed membranes.

These various experiments fully satisfied me that the tissues possess the property of coagulating fibrin: and I was farther disposed to think, that this power was most energetic in

the primary cells or vesicles; and less energetic as these cells passed into secondary forms, as in the red corpuscles of the blood, the pus globules, and the various tissues of the body. This corresponds well with the greater vigour of development in fœtal life and infancy, when the tissues have deviated little from their primary structure; and the gradual diminution of the activity of the function as life advances, and the tissues are more and more altered. The coagulation of the fibrin of the effused liquor sanguinis, under the influence of the primary cells and tissues, may probably, therefore, be regarded as the primary organizational act by which the assimilable matter dissolved in the nutritious liquid passes into the form of an organized solid.

It is scarcely necessary for me to add, that I am now satisfied, that the fibrin of the animal fluids exists in them in solution, previous to its appearing in a corpuscular form: and that the liquor sanguinis differs from the serum which separates from the blood-coagulum in this respect, that the former contains fibrin in solution, while the latter has been *defibrinized* by the action of the colourless blood-corpuscles upon it. I also think the theory of the production of cell-germs and cells by the reaction of the two kinds of serum upon each other, less probable than the theory of their formation stated above. The same theory may also be applied to explain the origin of the blood-corpuscles in the capillary lymphatics, and the production of the numerous less regular corpuscles which are formed in the capillary blood-vessels during inflammation, and which, after mingling with the circulating blood, rise to its surface when drawn, and reacting on the fibrin occasion the bulky coat of the blood. The opinion expressed by Dr. Anderson in his paper already quoted, that the blister-liquid contains fibrin which is precipitated during coagulation, I believe to be correct in many cases, as I have sometimes found that liquid, when acted upon by the washed clot, to deposit fibrin: in other cases again, I have found, on applying the same test to the blister-liquid, that it contained little or no fibrin; and in such cases, I believe the coagulum which forms in it, to result

from the simple aggregation of the organized corpuscles which it contains, as observation with the microscope first suggested to me.

[REMARKS.—We willingly give insertion to this interesting communication. The facts ascertained by Dr. Buchanan, with regard to the property of the clot, of cellular membrane, and other organic solids, in inducing the coagulation of fibrin in liquids containing it, are likely to throw great light upon the processes of nutrition and growth. We have thus a singular test for this principle in liquids which would hardly be expected to contain it, *e. g.* the serum of hydrocele. In 1840, Dr. Buchanan read a paper before the British Association, describing a method of separating fibrin, in a perfectly soluble form, from blood, by mixing gradually one part of liquid blood just drawn from the vein, with six or eight parts of pure serum, obtained from blood drawn the day before. The coagulation was in this case much retarded, and the fibrin separated in a translucent mass. This ingenious experiment clearly proved that the fibrin was actually dissolved in the blood, and that it was not a constituent of the red particles. From the fact stated in his communication, it would appear that a serous fluid (that of hydrocele) may hold fibrin dissolved, and this principle will not separate by spontaneous coagulation. It requires what might be perhaps called a catalytic action on the part of the washed clot, analogous to the action of rennet on casein, to induce it. If the serum of hydrocele exercise a solvent action over fibrin, it would be interesting to know whether the serum of blood might not also retain a portion. It is in the meantime obvious from these results, that spontaneous coagulability is no longer a sure test for fibrin in organic liquids; and that the old division of the blood into coagulable and uncoagulable lymph comes nearer to the truth, than physiologists have been of late years inclined to admit.—ED. GAZ.]

ACCORDING to Marc, the strength and vigour of the offspring depends more on the constitution of the mother than on that of the father. The eggs of very young hens are always small, however lusty the cock that has fecundated them. The same physiological fact is observed among horses and cows.

ON RUPTURES OF THE BLADDER, EXTERNAL TO THE PERITO- NEAL CAVITY.

With Two Illustrative Cases.

By THOMAS SPENCER WELLS, F.R.C.S.

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CASES of wounds of the bladder have frequently occurred in the practice of naval and military surgeons, and are found recorded in their writings. Others of rupture of the bladder from injury, though less common, may be also found in all standard works of surgical reference; but the danger of this lesion is generally referred to the results of peritoneal perforation. It is at once evident that the serious effects of this accident must be greatly modified by the state of the peritoneum, being almost inevitably fatal if the rupture have extended through this membrane; while a more favourable prognosis may be formed when it remains uninjured, and treatment inapplicable in the one case may probably be employed with saving effect in the other. These considerations have induced me to lay before the profession accounts of two cases which were treated in Malta Hospital in the year 1843.

CASE I.—*Rupture of Bladder by a fall—death in 122 hours. Dissection.*

Lawrence Dillon, age 30, one of the carpenter's crew of H.M.S. Queen, about 9 o'clock on the evening of Dec. 18th, 1843, being in a state of intoxication, fell out of his hammock, and supposes that he must have struck the edge of a stool. He applied to the medical officers of the ship at half-past ten, complaining of severe pain above the pubes, considerable distension between pubes and umbilicus, and great desire to void his urine, which he was unable to do. Stated that he had passed urine freely before getting into his hammock at 9 p.m. The pulse was quick, small, and intermittent, skin cold, great pain, and extreme tenderness on pressure above the pubes. A catheter was easily passed, and about two ounces of bloody urine drawn off, with some relief to the pain; which, however, quickly returned, accompanied with severe gastric irritation. A

hip bath, and a full opiate, were subsequently employed with benefit.

19th.—Early in the morning the catheter was again passed, and about six ounces of nearly pure blood evacuated with slight temporary relief. He had passed a very restless night, with great pain, urgent desire to void his urine, increasing distension, and tenderness of lower part of abdomen, much retching, and occasional vomiting. At 8 A.M. he voided about half a pint of urine, mixed with a large proportion of blood; this was followed by syncope and great prostration of strength. On admission into this hospital at 11½ A.M. his countenance was contracted, and expressive of great anxiety; surface cold, and covered by a clammy perspiration; he anxiously sought a position in which the abdominal muscles were relaxed to the utmost by flexion of the thighs and thorax. He appeared very restless and agitated, but the pulse, as soon as he had recovered the fatigue of his passage to the hospital, was not much weaker than natural. There was circumscribed distension about the size of a cricket-ball between the pubes and umbilicus, and such excessive tenderness that he shrunk from the slightest touch in this situation. A catheter was passed, when between nine and ten ounces of nearly pure blood flowed. On examination of the bladder by the rectum it gave the sensation of a hard solid body pressing towards the concavity of the sacrum. On rotating the catheter so as to cause motion of its beak, a sensation was felt as if it were pressing against some elastic substance. Fomentations were applied to the abdomen, and an enema administered. He was harassed throughout the day by continual retching and occasional vomiting, and complained of great thirst. In the evening these symptoms were unabated, and the enema not having operated, was repeated. He continued very restless, and a full opiate was therefore given, which procured him about two hours refreshing slumber.

20th.—Bowels still unopened, the last enema having returned without feculent matter; ten grains of calomel were therefore given. No change had taken place in the symptoms, and the vomiting continued extremely distressing. At 1 P.M. a turpentine enema was administered, and eighteen leeches ap-

plied above the pubes, followed by fomentations. At 4 P.M. the turpentine enema was repeated, and produced a scanty feculent evacuation. Twice during the day, with a great deal of straining, he passed about two ounces of urine, deeply tinged with blood, and the same quantity was withdrawn by the catheter. At 9 P.M. a full opiate was given, and as this was only followed by about two hours' sleep, it was repeated at midnight, and he slept until 3 A.M. of the 21st.

21st.—The swelling and tenderness still continue confined to the hypogastric region, but there is great flatulent distension of the whole abdomen. Vomiting still very troublesome. Pulse rapid, but tolerably strong. He has passed, three or four times, about an ounce of bloody urine with much straining. The leeches and fomentations were repeated, and ten grains of calomel given. At 1 P.M. he suddenly complained that the pain had extended over the abdomen, and the distension was much more generally diffused, although the same circumscribed hardness still remained above the pubes. Towards evening fluctuation appeared evident above the umbilicus, and the distension of the abdomen caused the ensiform cartilage to appear as though it were lying in a deep pit. Pulse much lower, 140, and often scarcely perceptible.

22d.—In a state of much greater depression. Fluctuation of abdomen not evident this morning, but a general doughy feeling in its place. Catheter passed with same results as before. Small quantities of wine were given at intervals, and opium in the evening.

23d.—Evidently sinking; pulse scarcely perceptible; no change in other symptoms. He continued sinking throughout the day, and died at forty-five minutes after 10, P.M., one hundred and twenty-two hours after the accident.

Autopsy, twelve hours after death.—On dividing the parietes of the abdomen, the whole of the tissues beneath the superficial fascia were found of a reddish black colour, softened, gangrenous, and exuding copiously, on pressure of the knife, a bloody serum, having a urinous odour. A catheter was passed through the urethra into the bladder, when its point immediately became visible in a large cavity, which

was bounded superiorly by the reflections of the peritoneum from the anterior surface of the rectum, and the posterior and superior surfaces of the bladder. The peritoneum being pushed upwards, had left a large cavity, filled with urine and coagulated blood, at the bottom of which was the bladder, quite contracted, with a rent in its anterior surface about an inch and a half in length. The edges of this opening were red, hard, and rounded. The whole of the cellular tissue surrounding the bladder, the muscles around the pelvic cavity, and the superficial abdominal muscles, were all softened and gangrenous, and permeated by a urinous fluid. The peritoneum exhibited the usual marks of intense inflammation, but was perfectly entire. Very little serum was effused into its cavity, but the intestines were adherent to each other by a recent effusion of coagulable lymph. The kidneys presented no sign of disease. No mark of any blow could be discovered upon the integuments of the abdomen.

REMARKS.—In this case I think the symptoms clearly shew that sixty-four hours elapsed from the period of the accident, until severe peritoneal complication occurred; and the uninjured state of the peritoneum found on dissection would render it extremely probable, that if a free exit were afforded to the urine extravasated into the pelvic cellular tissue, a similar case would not be a more unfavourable one than many of the cases of wounded bladder recorded in the works of Larrey, Hennen, &c. as having recovered.

Before speaking of the means of diagnosis between cases of rupture of the bladder with and without injury of the peritoneum, I beg to narrate the other case to which I have alluded.

CASE II.—*Injury from a fall—symptoms of supposed cystitis, with hæmorrhage into the bladder. Death in 195 hours.—Dissection.*

Edward Sanders, able seaman, aged 24, was admitted into Malta Hospital, Feb. 1st, 1843. It appeared that, on the evening of January 27th, he fell from his hammock, and hurt his loins across the chain-cable. Having been in a state bordering upon intoxication at the time, he was unable to state

upon what part he had first fallen. He immediately applied to the surgeon on board, but not having mentioned his fall, his case was considered to be one of cystitis, and treated by bleeding to twenty-six ounces, warm fomentations to the abdomen, castor oil, and opium.

On the morning of the 28th, he complained of extreme pain and tenderness in the region of the bladder; was again bled to twenty-five ounces, took castor oil, and had an enema, after which the symptoms were relieved, and he continued to pass small quantities of urine at short intervals; but no severe suffering was complained of until the morning of the 1st of February, when he was sent to hospital. On admission, he had a hectic, anxious, restless appearance; said he had not slept for three days; pulse rapid, with a hæmorrhagic thrill, but not depressed; tongue thickly coated with brown fur; great pain and tenderness above pubes. On examination, in this region a circumscribed tumor was felt exactly resembling the gravid uterus at about the seventh month. It was hard, and excessively tender on pressure. Under the supposition that the bladder was full of urine, a large catheter was immediately passed, and about half a pint of urine drawn off, so highly charged with blood, that a large coagulum formed in the bottom of the ntensil. The tumor above the pubes not being at all diminished, the catheter was withdrawn, and its eye cleared of firm coagulum: upon being reintroduced no more urine passed. On being then questioned, he spoke for the first time of his fall, and on examination, marks of contusion in the lumbar region were discovered. He also complained of pain on pressure in this situation. These circumstances seemed to indicate that blood had flowed from the kidneys and become coagulated in the bladder; and this opinion was still further strengthened by the sensation perceived on moving the catheter, so as to cause rotation of its point. It communicated exactly the sensation of breaking up coagula. On examination by the rectum the vesical tumor was felt distinct and circumscribed, and by alternate pressure of one hand on the abdomen, the other in the bladder, the exact sensation was given of a bladder distended by solid matter. The catheter was freely moved

about in the bladder, and warm water injected by an India-rubber bottle several times at short intervals; but the only result was the return of the water tinged with blood, and a few small shreds of dark fœtid coagula, not amounting to half an ounce. He was put into a hip-bath, and a cathartic enema administered, which operated freely, and he felt so much relieved that he fell into a refreshing sleep, and passed a tolerably comfortable night. On the 2d no change had taken place in the abdominal tumor; the pulse still continued moderately firm, but with a hæmorrhagic jerk; he complained of a disposition to vomit, and slight shivering; face less flushed than yesterday; considerable thirst. The bath and enema were repeated, and catheterism several times during the day, but never more than four or five ounces of urine passed, and this always so highly charged with blood that a coagulum speedily separated. He continued much in the same state until 1 P. M. of the 3d, when he suddenly complained of extension of the pain over the abdomen, which became universally distended, tender on pressure, and giving a doughy sensation to the fingers. The circumscribed tumor, however, still distinctly occupied its former situation. His pulse was much lower, at times scarcely perceptible, and a troublesome hiccough came on, followed by vomiting. Turpentine was applied, with hot flannels over the abdomen, and a full opiate given with temporary relief. The operation of opening the bladder was proposed, but not performed, as the peritoneal complication appeared too serious to admit a chance of recovery. On the 4th he was evidently sinking; did not complain of much pain except on pressure, but was much harassed by hiccough; pulse 140, scarcely perceptible, sometimes intermittent. No apparent change in the condition of the bladder, nor in the results of catheterism. He lingered throughout the day, with all the signs of approaching dissolution, until 9 P. M. when he suddenly became furiously delirious, and continued moaning, or talking incoherently, and restlessly throwing himself about in bed, until 1 A. M. of the 5th, when he died—195 hours after his fall.

Autopsy, twelve hours after death.—

Thoracic viscera healthy; also liver, spleen, and stomach, and the intestines, except their peritoneal coat. The right kidney presented no signs of inflammatory action, but appeared to have been the seat of hæmorrhage, as several small coagula projected from the calices and infundibula. The same state was observed in the left kidney, but in a less degree. The whole of the moveable intestines were displaced from the lower part of the abdomen, and pushed upwards to a level with the umbilicus. They were here united together, and to the walls of the abdomen, by lymph recently effused upon the surface of the peritoneum. The cavity formed by these peritoneal adhesions, and by the reflections of the membrane over the pelvic viscera, was distended by a clear bloody serum, not urinous in its odour. This fluid was removed by a sponge, when the bladder appeared much enlarged, and its postero-inferior surface was dark-coloured and gangrenous in appearance, the peritoneum being implicated in the gangrene. On injecting the bladder *in situ* through a catheter passed by the urethra, the fluid exuded through this dark gangrenous portion into the peritoneal cavity. The whole of the cellular tissue surrounding the bladder, and connecting it with the walls of the pelvis, was exceedingly thickened by urinary infiltration, and the results of inflammatory action. It had a fœtid ammoniacal odour, and was dark-brown in colour. The mucous membrane was excessively inflamed, raised into highly vascular rugæ, and a perforation upwards of an inch in length was found on the anterior surface, a little to the right side, and just below the reflection of the peritoneum. Its edges were red, hard, and turgid. The muscular coat was very distinct, and of a light slate colour.

REMARKS.—Every circumstance connected with this case naturally led to the supposition that it resembled one of those recorded by Larrey, in which blood acted upon by the urine had formed firm coagula in the bladder. A consultation was held as to the propriety of opening the bladder, and the operation was rejected by five medical men present, (three of them of large and varied experience) not because they entertained any doubt of

the presence of coagula in the bladder, but because the peritoneal complication appeared to render such a measure hopeless, and therefore cruel. On dissection the general opinion was, that ulceration of the bladder had followed severe cystitis, with extravasation of urine into the cellular tissue, and consequent gangrene of the peritoneum; but I think a comparison with the case of Dillon will show that this opinion was erroneous. The accident in both cases was a fall from a hammock, upon hard bodies; in both the urgent symptoms appeared *immediately* after the fall; in both the abdominal distension was at first circumscribed in the hypogastric region, and was suddenly followed by symptoms of peritoneal complication; the pulse in both, as soon as the immediate shock was recovered from, remained undepressed until the secondary symptoms set in; the sensation on catheterism, and on examination by the rectum, were precisely similar, and indeed, the whole succession of symptoms; the situation of the opening observed in the bladder after death was precisely the same, and the edges of the opening had a very similar appearance. These considerations, with the fact that in Sanders's case no marks of ulceration were observed in the mucous membrane of the bladder, are, I think, strong evidence that in both cases the bladder was ruptured external to the peritoneum.

With regard to the diagnosis of similar cases, although I would not generalize too confidently upon so small a basis as two observations, we may probably say that if immediately after any accident likely to injure the bladder, severe pain follows in the hypogastric region, with passage of blood or bloody urine by the catheter—if more than a very small quantity of blood is never voided at one time, nor drawn off by the catheter—if a peculiar sensation of pressure against the point of the catheter be felt, and if these symptoms be unaccompanied by the severe prostration of strength and depression of pulse which always follow peritoneal perforation, rupture of the bladder external to the peritoneum may fairly be inferred, and the treatment founded on the inference.

The most rational treatment would appear to be, to make a free opening through the perineum and deep pelvic

fascia, in order to allow a free exit to the urine infiltrated through the pelvic cellular tissue, and if necessary a counter opening above the pubes. The case would then be no worse than one of wound of the bladder with extravasation, and by keeping an elastic catheter constantly in the bladder, further infiltration might be to a great degree avoided. Under this treatment, with opium and the necessary means for combating peritonitis if it arise, I should not consider the case by any means so hopeless as one in which the peritoneal cavity was opened; and therefore trust that I shall not be deemed guilty of obtruding an unimportant subject upon the notice of practical surgeons.

Malta Hospital.

DEATH OF HARVEY.

"THE following circumstantial account of the death of this eminent man," says Hasted, in his History of Kent, "is, I believe, little known beyond the family, but is related on the authority of a clergyman of the county of Kent, who was assured of the fact by the late Eliab Harvey, Esq. Barrister-at-law, a descendant of the doctor's younger brother of that name.

"Dr. Harvey was ever afraid of becoming blind. Early one morning, for he always rose early, his house-keeper coming into his chamber to call him, opened the window shutters, told him the hour, and asked him if he would not rise. Upon which he asked if she had opened the shutters. She replied yes! Then shut them again. She did so. Now open them again; but still the effect was the same, for he had awakened stone blind. Upon this, he told her to fetch him a bottle, (which she herself had observed to stand in his chamber for a long time), out of which he drank a large draught, and it being a strong poison, which, it is supposed, he had long before procured, and set there for this purpose, he expired within three hours after."

Dr. Harvey is buried in the obscure village of Hempstead, in Essex. In the church is a monument erected to him, with a long Latin inscription. It appears, by the size of the coffin, now remaining in the vault under the church, that he was a man of very short stature. The portraits of him all agree in representing him as a man of a very sagacious and penetrating, but mournful countenance, and of a body much attenuated by mental labour and fatigue.

CONTRIBUTIONS TO THE PHYSIOLOGY OF THE HUMAN OVARY.

Second Series.

BY CHARLES RITCHIE, M.D. Glasgow.

[Continued from p. 512.]

VIII. *Evolution of Ova.*

ANOTHER mistake of De Graaf, not less prolific of error, concerning the true functions of the ovary, than were his views of the anatomy of the ovarian vesicles and of the seat of fecundation, and which, although rejected by many of his cotemporaries, has also received a more remarkable refutation in our own times, was his assertion, that the ova of quadrupeds, and of the human female, are separated from the ovary only by impregnation. This he supposed to be accomplished, as already stated, by the formation, a few days after conception, of a substance within the follicles [termed by him ova] of the ovary, which, from its structure, he called corpus glandulosum, and which, having gradually involved the ovum in a vesicle, eventually, by its contraction and weight, expelled that body through a minute opening or papilla in its walls.

Aristotle*, Galen†, Harvey‡, and every other writer on the generation of animals before De Graaf, had referred to the addle or sterile eggs discharged, as the independent act of the ovaries, by virgin birds, and by fishes and insects, as also, "seminis muliebris evacuationi sine maris congressu;" and, under the name of ova, to the discharge by women, but only after presumed impregnation, of vesicular or other molæ. Vesalius§, also, and perhaps others before De Graaf, had observed the corpora glandulosa of this writer in the human ovary, and may have supposed them to possess a sexual origin, but this does not appear; and the idea of an ovum being separated from the ovaries of women or quadrupeds by other causes than the approach of the male, does not seem to have been suggested by any one before Kerckringius, whose work was published while that of De Graaf was passing through the press.

In the account of this writer's opi-

nions given in the seventh volume of the Philosophical Transactions, which is only a compilation from the reports of French journalists, the fact of *fecundated* ova being aborted at the menstrual periods, and in consequence of paroxysms of anger, is stated, but it has been omitted to mention that Kerckringius, in his own memoir*, announces the additional fact of the *unimpregnated* ova of the human female being discharged often during the *flow of the menses*, or owing to sexual excitement. His words are:—"Tam conjugatæ autem, quàm *virgines* hæc ova sæpissimè excernunt, *insensibiliter quidem, quia non advertunt, nec quiequam de iis suspicantur* : sed, quod mihi ex relatione quarundam constat, sentiunt, dum reflectit; cum autem excreta sunt, paulò, quàm hic depinximus, sunt majora, nec, quia mollia sunt, et laxa rotunditatem suam servant, et sic manu tractentur ac diducantur, membrana manum sequitur : unde patet ea non semen, aut quid simile esse, sed ipsa hæc, de quibus loquimur, ova : *et hæc excretio potissimum instante purgatione menstruâ, aut alias stimulante libidine accidit.*"

It is obvious that the bodies which Kerckringius here describes were not ova, but, most probably, were portions of fibrin. His statement was received by cotemporary physiologists, notwithstanding, as the announcement of a possible fact, and one of these, M. Denys†, commenting on it, anticipates, in one remark, the whole principle recently brought out so laboriously by M. Pouchet‡, that "all other animal creatures, not to speak now of plants, are produced by means of eggs, as birds, insects of all sorts, fishes, and *why not quadrupeds, and females of mankind?*" and, in a succeeding observation, he attains to the same conclusion with the writer of these Contributions, that these ova are in general fecundated within the uterus, and not in the ovaries.

Such were the floating opinions, the *obiter dicta* in these matters, which prevailed at the time when De Graaf wrote, and it is one of the most curious particulars in this inquiry, not that De Graaf, with such analogies to guide him, should have discovered ova in the

* Hist. Anim. Lib. vi. cap. 2.

† De usu partium, Lib. xiv. cap. 4.

‡ Exercit. v. xlii.

§ De Corp. hum. fab. lib. v. cap. xv.

* Anthro Ichno. cap. i.

† Ph. Tran. Vol. 7.

‡ Théorie Positiv de la Fécondation des Mammif.

tubes of quadrupeds post coitum, but that it should not have been till nearly two centuries later that they were found in the same situation irrespective of the influence of the male.

The immediate cause of this arrest in the progress of discovery was the belief that the structure called corpus glandulosum was a mechanism essential to the separation of ova from the ovaries, and exclusively a product of impregnation,—a notion which, having received the sanction of De Graaf, and afterwards the strenuous advocacy of Haller, and the support of most succeeding German and British physiologists, although repudiated by others, has maintained its ground as a serious hindrance to the attainment of a correct theory of generation to the present day.

The first writer who formally disputed the hypothesis of the essentially fecund nature of the extrusion of ova, was Malpighi, but, unfortunately for science, he did this through the medium of another speculation, that of the secreting function of the corpora glandulosa. Having often met with this granular matter, termed by him, from its colour, corpus luteum, within the ovarian vesicles of new-born calves, and perforated by an opening in other animals in the time of rut, although secluded from the male; and, also, in pregnant cows and other animals, and in women at the seventh month,—in none of which any correspondence obtained between the size or number of the corpora glandulosa, or lutea, and the period of gravidity or the number of fetuses, and in none of which, also, was their any ground to suspect superfœtation; and having, besides, as he imagined, observed these cysts to contain within their centres ova of the size of millet-seeds, he broached the opinion, that they were glands—existing long antecedent to impregnation, and designed for the secretion, and, by means of the contractions of the fimbriæ, the separation of mature ova, which might either be fecundated within the tubes, should they come into contact with the semen of the male, or, in default of this, be discharged as sterile, precisely as in birds.

An immediately succeeding writer, who followed in the same direction, was Drelincourt*. He assumed the

pre-existence of fleshy and fibrous capsules (corpora lutea) in matured ovarian vesicles, which, by their pressure, aided in the venereal oestrus by the contractions on them of the fimbriæ of the tubes, caused the riper ova to be absorbed in a state of integrity into the latter, and thence into the uterus, where they were either impregnated or washed away.

Consecutively to Drelincourt were Newman*, and various Italian physiologists, terminating with Bertrandi, who wrote in 1758, all of whose writings, as well as those of Buffon, which appeared near the end of this period, contain on this subject little more than an exposition of the ovarian systems of Kerekringius and Malpighi, and, in what relates to the discovery of corpora lutea in the virgin female, at least, have become familiar to us by the references of modern writers.

Contemporaneously with these were Littre, who†, as has with equal truth been asserted of menstruation‡ in the present day, declared that the number of scars in the ovaries was the precise counterpart of the previous fecundations, and succeeding to them, was Roederer, who was the first, by a representation of the virgin ovary, to demonstrate that such cicatrices are often found in profusion indenting the ovaries of women who have never been pregnant‡; and who, also,§ records an example of a corpus luteum in a woman of whom it could not be supposed that she had borne a child. Following this judicious and accurate observer, was the illustrious Haller, who, denying the possibility of conception happening without a corpus luteum, and defying the universe|| to present an example of such a body in a virgin, homologated the whole principle contended for by De Graaf regarding the fecundative character of the emission of ova, and the essential connexion between this and the formation of corpora lutea;—urging his views with a vehemence and a pertinacity, which have latterly been seen to have been ill bestowed, but which went far at the time to secure for them

* De Exclusionem Ovulorum in Salacibus absque ullo progressu Coitu, 1717.

† Murat, in Dict. des. Sciences Méd. t. 39, p. 1.

‡ Mr. Girdwood, in Paget's Analysis, 1842.3.

Mr. William Jones, M. Negrier.

§ Icones, p. 38.

|| Ibid. p. 43.

¶ Op. Min. t. iii. p. 467.

* Perioch. vii. ad xxii.

a general reception, and, subsequently, to exert a most baleful disturbing influence on the investigations of succeeding anatomists.

On this principle is to be explained the attempt made in 1788, by Blumenbach*, to reconcile the existence of known facts with Haller's views, by resuscitating, on very erroneous data, an opinion which had been previously insisted on in a different manner by Kerckring, and under the same aspect by Drelincourt, that the Graafian vesicles might be ruptured not merely by fecundation, but also by the essential or independent force of the ovaries when in a state of orgasm. To him succeeded the Hunters and Denman, whose opinions on the points in question were substantially those of De Graaf; and in 1797 appeared Dr. Haighton's Inquiry†, in which the assumption of the generative origin of corpora lutea on which it proceeds, distorts the results deduced from every experiment; and in the same year‡, Mr. Cruikshanks, in a series of observations made under the auspices of Dr. William Hunter, for the express purpose of testing those of De Graaf, concludes the whole by asserting that the ovum is formed in the ovarium by conception, which also causes its discharge into the tube and uterus by means of the corpus luteum, literally after the manner first described by De Graaf.

The principal writers who have followed in the same direction to the present day are Burns§, Meckel||, Power¶, Blundell**, Seymour††, Montgomery‡‡, Barry§§, Carpenter|||, Lee¶¶, Ramsbotham***, all accepting unreservedly the theory of the evolution of ova from the ovaries by impregnation, but also admitting after Blumenbach that they are sometimes discharged under the influence on the ovary of other causes.

[To be continued.]

* Comment. Gottingen. Vol. ix. p. 109.

† Ph. Trans. Vol. 87. p. 159.

‡ Ibid.

§ The Anatomy of the Gravid Uterus, 1799, p. 80. Principles of Midwifery, 1840.

|| Meckel, Anatomie Descript. p. 735.

¶ Essai, 1821, p. 24.

** Researches Physiological, &c. 1824.

†† Illustrations of some of the principal diseases of the Ovaria, &c. 1830.

‡‡ Signs and symptoms of Pregnancy, 1837.

§§ Phil. Trans. Vols. 128, 12, 130.

||| Physiology, 1845.

¶¶ Cyclop. Pract. Med. Vol. iii. 1833. Lectures in MED. GAZETTE, 1842. Theory and Pract. of Midwifery, 1844.

*** Ramsbotham's Midwifery, 1844.

CASES OF POISONING BY PRUSSIC ACID.

WITH REMARKS.

Read before the South London Medical Society, May 1845.

By JAMES HICKS, Esq. Surgeon,
Newington, Southwark.

[Concluded from p. 592.]

Acts indicating volition and consciousness.—Cases.—Absence of convulsions in slow poisoning.—Detection of the poison in the dead body.—Action of the tests when no odour is present.—Relative power of the tests.—Treatment.

WE next pass to the consideration of one of the most difficult questions connected with poisoning by prussic acid; I allude to the period that elapses prior to the individual becoming insensible and losing all power of volition: and as some criminal trials have taken place in this country in which the life of a prisoner rested upon this very question, it demands our most careful attention. With respect to one of the trials, the following is an outline of the case, which is copied from Dr. Christison's work on Poisons*. An apothecary's maid-servant was found one morning dead in her bed; the body was lying in a composed manner, with the bed-clothes drawn smoothly up to the chin, while at her right hand lay a phial, corked and wrapped in paper. From these circumstances it was suspected that the apprentice, if not the murderer, was accessory to its administration, in consequence of which he was put on trial. Now, at this time—the prevailing opinion being that when death took place without convulsions the action of the poison must be very rapid—the principal question for the medical witnesses to decide was, whether the deceased could have had time to cork the bottle, wrap it in paper, and afterwards draw the clothes smoothly up to the chin, prior to the action of the poison; this condition of things indicating a succession of voluntary acts immediately preceding death. To ascertain this question, as no similar case had ever occurred in the human subject, numerous experiments were made on animals, from which they came to the same conclusion as that arrived at by Dr. Christison, i. e. that equal doses

* MED. GAZ. vol. viii. p. 759.

acted differently on different animals, some being killed instantly, whilst in others, with an equal dose, the period that elapsed prior to the action of the poison, amounted to twenty seconds. From these experiments, with the knowledge that where death takes place without convulsions it is generally rapid, while, on the contrary, where the poison acts so slowly as to allow of the several acts above mentioned being performed, convulsions occur to such an extent as would have caused disorder in the bed-clothes, the majority of the witnesses gave it as their opinion that, possible as the acts might be, their performance was highly improbable. One of the medical witnesses, Mr. Paget, thought otherwise, considering that all the acts could be gone through if performed with promptitude, and, in consequence of this opinion, the prisoner was acquitted.

Notwithstanding the acquittal of the prisoner, the prevailing opinion was in favour of the majority—that it was quite impossible, from the known rapidity of the action of this poison, for a person to perform such a series of acts as in the case related. Several cases, however, which have lately occurred, where there was no doubt of the act being that of suicide, and where, also, there was every reason to believe that the dose had been large, must tend considerably to modify our views on this subject. Of the cases I allude to, one was published by Mr. Crisp in the *Lancet*, where the body was found lying in a composed manner, without any indications of convulsions having preceded death, while the bottle, labelled prussic acid, was discovered in the chamber-vessel, pushed some distance under the bed. The next instance is that published by Mr. Taylor, in the *Guy's Hospital Reports*, April 1845, where the deceased was found lying in bed, with the clothes drawn smoothly up to the chin, the bottle at the same time which had contained the poison being on a chair by the side of the bed. The third is a case lately reported in the *Lancet* by Mr. Leithead, where it appears that the girl, after swallowing the prussic acid in a large dose, recorked the bottle, thrust it a full arm's length between the feather-bed and mattress, got into bed, and then drew the clothes over her,

yet there appeared to have been no convulsions. Besides these, however, there are two other cases, of which, being of so great interest, and, at the same time, bearing so strongly on the present subject, I shall relate the particulars a little more fully. The first is taken from the *Provincial Medical Journal*.* The deceased, who had been in a distressed state of mind for some time, having had a partial medical education, was enabled to obtain from a druggist half an ounce of prussic acid. On the fatal morning, one of his daughters accompanied him to his office, where he stayed some time; he then sent her away with a message, and, taking off his coat, proceeded to a room up stairs. After a short interval, he was seen to walk rather quickly out of the house towards a druggist's shop, which he entered in his usual manner, which was slow and easy. The druggist asked him how he did? He replied, in his usual tone of voice, *I want some more of that prussic acid*. The druggist, on walking round the end of the counter to speak to him, perceived that he was about to fall, and that his eyes were fixed on him with a stare. The druggist said to him, "You have taken the prussic acid." He could make no answer, but fell to the ground insensible. It is supposed he must have swallowed the poison before proceeding up stairs, for the bottle was found in the fireplace on the following morning, and the stopper on the table. It is presumed, also, that he must have taken the acid before placing the bottle in the fireplace, as no glass or similar utensil was found in the room. It appears, then, that after taking the poison he must have gone to the head of the staircase, a distance of ten average paces, descended the stairs, seventeen in number, and proceeded as described to the druggist's shop, forty-five paces, making a total of *fifty-five paces and seventeen stairs*, before the poison began to act; yet, notwithstanding its slow action, there were no convulsions nor apparent venous turgescence; neither was there any perceptible smell about the mouth.

The next case is published in the *Edinburgh Medical Journal*, Vol. 59, and is of interest in showing how long

* Related by Mr. Godfrey, of Bristol, Sept. 25, 1844.

a period may elapse between the taking of the poison and the development of the symptoms. A gentleman, aged 24, was found one morning in bed (the sister being attracted to his room by his groans), under the clothes, unable to speak, and with his eyes fixed. Medical assistance being obtained, it was ascertained, from several circumstances, that the symptoms were those of an overdose of prussic acid; when forthwith appropriate treatment was had recourse to, and fortunately, by the aid of cold affusion, ammonia, cataplasms to the feet and chest, and bleeding, he became sensible in an hour, and, on the following day, was quite well, with the exception of the effects of the remedies adopted. After his recovery, it was ascertained that he had taken a tea-spoonful of the acid for the purpose of composing himself, having passed a restless night; he took this large quantity, believing that the acid had lost its strength and was almost useless. Feeling chilly, he went to bed, intending, in a short time, to have arisen and walked: he believed, also, as well as he could judge, that fifteen minutes had elapsed between his taking the acid and going to bed. He wrote in the interval*. It is also worthy of remark that there was no shriek or scream noticed, either in this or the preceding case. It was at one time considered that when the poison was so slow in its action on the system as to allow such a series of acts being performed by the deceased that the above five instances, as those related, death must have been preceded by convulsions, in consequence of these being observed to take place in animals poisoned by this acid. That they were not present, however, in two of the instances related, is quite clear, the patients having been seen from the first, and the circumstances having been especially attended to.

This leads us to another question, whether *convulsions* are an invariable accompaniment in poisoning by prussic acid. If we were to decide by the results of experiments on animals, our answer must be in the affirmative, as it appears from the researches of most physiologists that death from this

poison is in most instances preceded by convulsions. This is in exact accordance with my own experiments, for whether the dose has been large or small, convulsions have invariably been present prior to death. If, however, we read over the different cases published, where the symptoms have been observed from the first, we shall find that while in some instances they were present, in others they were not noticed. That they were absent in the second case I related, it will be recollected I particularly mentioned, although the girl lived five minutes after taking the poison, and had sufficient time to conceal the bottle in the front of her dress prior to its action on the system; so also in Mr. Pooley's case*, where an individual, after having swallowed the poison, recorked the bottle (showing, at least, that its action was not immediate), yet there were no convulsions. From these several cases, then, where the individuals had sufficient time for the performance of many acts prior to the operation of the poison, notwithstanding the dose was large, we arrive at the following conclusions:—Firstly, that while, in animals poisoned by this acid, convulsions are an invariable attendant, in the human subject it is by no means so, many dying without any such symptom being observed; while, secondly, that notwithstanding, in some instances, the action on the system is immediate, in others an interval may elapse sufficiently long for the performance of many acts being gone through with promptitude and deliberation. This is shown in Mr. Godfrey's case, where the deceased, after having swallowed a large dose of the poison, was able to walk fifty-five paces, descend seventeen stairs, and then ask for some more prussic acid, prior to the commencement of the symptoms! as also in Mr. Garson's case, where an interval of fifteen minutes elapsed. It is quite evident that very many acts may be performed in some instances, not only with promptitude but even with ordinary deliberation. At the same time, the mere fact of a bottle (or any other utensil out of which the poison has been taken) being found at some distance from the deceased, unless accompanied with

* This case is related by Mr. Garson, of Stromness, Edinburgh Medical and Surgical Journal, Vol. lix. p. 72.

* MED. GAZ. vol. xxxv. p. 859.

other suspicious circumstances, can no longer be received as a proof of homicidal interference.

It may be objected to this reasoning, that these are very remarkable cases, and exceptions to the general rule; but still, as it is occasionally on these very singular instances that a medical jurist is called upon to give an opinion, it is highly requisite they should be borne in mind before coming to a conclusion on the subject: and as an illustration, none can be found bearing more on this point, than the Leicester case before alluded to.

From what has been said with reference to the symptoms, and morbid appearances, it is quite evident that they will not enable us to speak with certainty as to its administration. Our chief reliance, then, in this, as in all other cases of poisoning, must be on *chemical investigation*. The mode hitherto mostly had recourse to appears to have been that adopted in the first case related, *i. e.* in the first instance, to distil the contents of the stomach, and afterwards to apply the usual tests to the liquid distilled: these are, its odour, the iron and the silver tests. I believe, however valuable the above method may be, when the quantity present is required to be known, it is not to be compared for facility of application to the simple yet beautiful method lately introduced by Mr. Taylor, of Guy's Hospital, and for which the profession is under deep obligation to that gentleman*. The method I allude to is that of moistening two watch-glasses†,

one with a solution of nitrate of silver, and the other with caustic potash, and then inverting them over the suspected liquid, when, should it be present, it is denoted, in the former case, by the formation of a white film of cyanide of silver, and in the latter by the production of Prussian blue on the subsequent addition of a solution of the green sulphate of iron and muriatic acid.

As a proof of the delicacy of this method, I have found that one minim of Scheele's acid, mixed with two ounces of distilled water, gave clear evidence of its presence by both tests. A similar result was also obtained on diluting the acid with double that quantity of water (1 + 4 water), but on diluting it to one minim in eight ounces it was only to be recognised by the silver test. So, again, on repeating these experiments with the acid mixed with odoriferous liquids, such as porter, peppermint, and spearmint-water, in order to conceal the odour, a like result was obtained. Wishing, however, to ascertain the relative value of this method compared with the usual plan of adding the tests to the solution, and at the same time to discover at what extent of dilution the acid would become imperceptible by its odour, and yet capable of being recognised by chemical tests, I made the following experiments:—

Six solutions of the acid with distilled water were mixed in these proportions: one minim of Scheele's acid to 1, 2, 4, 8, 16, and 32 ounces of distilled water, and the results are given in the table below. By this table,

By adding the tests to the Solution.			By means of the watch-glasses applied to the Vapour.		
Extent of Dilution.	Iron.	Silver.	Iron.	Silver.	Odour.
P. A.					
1 + 5j.	Precipitate obtained.	Precipitate obtained.	Very evident.	Very evident.	Easily recognised.
1 + 5ij.	Ditto.	Ditto.	Ditto.	Ditto.	Perceptible.
1 + 5iv.	Green tinge.	Ditto.	Evident.	Evident.	Faint.
1 + 5vii.	Nil.	Milkiness.	Traces.	Film.	Doubtful.
1 + 5xvj.	Nil.	Ditto.	Nil.	Film.	Ditto.
1 + 5xxxii.	Nil.	Nil.	Nil.	Film.	Nil.

It is right to observe, that although the precipitates obtained were small, yet in consequence of their being unmixed with any organic matter, they were as clear and bright as if applied to an aqueous solution of the acid.

* MED. GAZ. vol. xxxvi. p. 328.

† What will answer equally well is a flat piece

of glass for the silver test, and any flat portion of white-ware for the iron test.

then, it will be seen that of the three tests the nitrate of silver is the most delicate, as shown by both methods, that the odour is not to be recognised after a dilution of one minim with sixteen ounces of water, and that the iron test is more delicate when applied by means of the watch-glass than when added to the solution containing the acid; while lastly, that notwithstanding the silver test is the most delicate, the iron test is the one most to be relied on, for the very obvious reason, that as no substance is capable of forming Prussian blue but prussic acid, it is unnecessary to collect and examine the precipitate, which would be requisite with the deposit obtained by the silver test, and which, from the smallness of the quantity, would be attended with difficulty.

Having, then, clearly proved its value when applied to liquids artificially mixed, I next proceeded to ascertain how far it might be useful in detecting this poison when present in organic tissues, or as would be likely to occur to the analyst when searching for its presence in the bodies of persons who have died from its administration. For this purpose, in the first place, the stomach of a dog was taken which had been killed by three drachms of prussic acid, and, after having well washed it, and allowed it to remain some time in water, it was placed in a wide-mouthed bottle; a watch-glass, moistened with nitrate of silver, was then placed over it; in ten minutes a white film of the cyanide of silver was seen deposited on the wetted parts of the glass, appearing first at the edges, and from thence radiating towards the centre*. In the next experiment, a cat was killed by twenty minims of Scheele's acid being poured into the mouth; eight hours after death I proceeded to examine it, and having found by previous experiments that the odour can be more strongly recognised in the chest than in any other part of the body, a small aperture was made in the parietes of that cavity, and a watch-glass accurately fitted over it: in half an hour a white margin was to be observed, but in the space of an hour, the whole portion wetted with the nitrate of silver was covered with a distinct film of the

cyanide, perfectly insoluble in cold nitric acid, the little particles floating about in the liquid, but soluble in the acid when boiled. No indication of the poison was obtained by the subsequent application of the glass moistened with potash over the aperture. The whole contents of the chest, the stomach, and the lower part of the mouth, were then placed in a bottle, and, on the glasses being applied accurately, the presence of the acid was indicated by both tests. But on submitting the same contents to distillation, I was unable to detect its presence in the liquid distilled, either by the odour, the iron, or the silver test.

In order to apply these results to the dead human body the following experiment was performed. The stomach of a man who had recently died was obtained, and after having poured into it half a pint of porter, mixed with half a drachm of Scheele's Acid (at four per cent.=1.12 grains of anhydrous acid) it was laid in a cool place for subsequent examination. Two days after, on opening the stomach, the liquid had a kind of *beery* smell; the odour of the acid was not perceptible. Several persons being present, I asked them to smell the liquid; they confirmed my opinion. I then put a portion of it in two bottles; pieces of glass moistened in the manner above described, with caustic potash, and nitrate of silver, were then placed over them: in less than ten minutes, most decided proofs were obtained of the presence of the acid by the formation of white cyanide of silver in one case, and Prussian blue in the other, on the subsequent addition of Ferri Sulph. and muriatic acid.

Thus, then, having clearly proved the value of this method in examining for the presence of prussic acid, whether in connection with organic tissues, in liquids artificially mixed, or in the liquids of the dead human subject, I think it is not asserting too much to say, that of all methods hitherto introduced for the detection of prussic acid, it is by far the most valuable, both from the facility of its application, the rapidity of its action, and also the decisiveness of its indications. To the general practitioner it must prove of the most essential service, as, in consequence of its simplicity, it may be applied by the merest tyro in che-

* The iron test was not applied in this instance, on account of my not being aware of its being used in this manner at the time.

mistry, even at the time of conducting the post-mortem examination, the only articles required being two pieces of glass, and four bottles, containing the nitrate of silver, solution of potash, ferri sulphas, and muriatic acid.

From the above experiment it is also clearly evident, that not only may prussic acid be detected, when it is not to be recognised by its odour, but that its odour may be concealed by many odoriferous liquids. When we require to know the quantity present in a liquid, the whole must necessarily be submitted to distillation; but, as has been suggested by Mr. Taylor, the objections to this process will be materially reduced by the application of this test before distillation*, entirely preventing as it does any dispute taking place as to the prussic acid being the result of such distillation. I fully believe also, that the poison may be detected in the blood and in organic tissues by this method, when it would not be possible to do so by distillation; and as somewhat corroborating this opinion, I might refer to the experiment on the body of the cat, where I was able to detect it by means of the glasses placed over the contents of the stomach and chest, but quite unable to do so on submitting them to distillation. Indeed, from the results of experiments, I verily believe, if the method adopted by me, of making an opening in the chest, and applying the glass moistened with nitrate of silver, be had recourse to, the number of cases will be considerably reduced, where the odour has been present, and the poison has not been indicated by chemical tests.

I will, lastly, say a few words with respect to the *treatment* recommended in such cases, in which I will be very brief, so much time having already been occupied in discussing the other matters connected with this subject. Of all remedies, chlorine, ammonia, and the cold affusion, appear to be those most generally relied on; and as ammonia is most readily to be obtained, this is resorted to in the greater number of instances. Should I, however, at any time be called to a case similar to the one related in the first part of this paper, I would on no account lose time by endeavouring to pour fluids into the stomach—certain as I am, from the

muscles of deglutition being so fully under the influence of the poison, that on that occasion not a particle passed into that organ—but would at once put in practice a suggestion, for which I have to thank Mr. Taylor (which, he states, is of much service in many cases of asphyxia, and as it is also extremely simple in its application, is well worthy of a trial). It is merely to saturate a handkerchief with the liquid ammonia, and then to wave it over the face of the patient, by which means the individual being as it were enveloped in an atmosphere of ammonia, there is every chance of its vapour passing into the lungs; and this has been found even of more service than where the ammonia has been given internally. There is, however, another remedy mentioned by authors, but which I think has been spoken of too lightly; I allude to venesection. When we look to the extreme congestion of the brain and lungs, indicated by the symptoms, as also by the post-mortem appearances, bearing so close an analogy as they do to asphyxia from hanging or drowning, and at the same time remember the great benefit derived from venesection in restoring animation in the latter states, it appears to me by no means irrational to expect a similar benefit in poisoning by prussic acid. Against this it may be argued, that notwithstanding there may be a similar state of brain, so far as congestion is concerned, the causes giving rise to such a condition are very different; as, for instance, in asphyxia, produced by hanging, the cause is merely mechanical, which, being removed, the system is left in a condition favourable to recovery, whereas in poisoning by prussic acid, the congestion of the brain being merely secondary, the primary cause arising from some impression made on the nervous system, it by no means follows that the same benefit should be derived by relieving such a state of brain in the latter instance as in asphyxia from hanging, until that impression, or whatever it may be, is in the first place removed. With this argument I to a certain extent agree, but still, on the other hand, fully believing as I do that it is quite incompatible with such an amount of congestion for the brain either to perform its functions, or even to recover itself, until

this congestion be removed, I would by no means neglect to adopt venesection in any future case, in combination with cold affusion, ammonia, and artificial respiration. I would, however, observe, that in advocating bleeding, I do not mean to say that it is to be performed indiscriminately, but merely in those cases where congestion of the brain and lungs is evident from the bloated and livid appearance of the face, as in the first case related. With respect to the treatment, I cannot do better than conclude with the words of Dr. Christison, who says, it is right to remember that on account of the dreadful rapidity of this poison, it will rarely be in the physician's power to resort to any treatment soon enough for success; and farther, that his chance of success must generally be feeble, even when the case is taken in time, because, when hydrocyanic acid is swallowed by man, the dose is generally so large as not to be counteracted by any remedies.

Having now brought this paper to a close, I should wish it to be particularly understood I do not take credit to myself for having advanced anything new, or more than is already known to many; I trust, however, I have been enabled, from the materials furnished me, in the shape of recent cases and experiments, to lay this very important subject a little more clearly before the profession, than others have yet had it in their power to do.

NEW ANTIDOTE FOR POISONING BY CORROSIVE SUBLIMATE.

M. POUJET has lately proposed the use of the protochloride of tin as a chemical antidote in cases of poisoning by corrosive sublimate. He states, that he has given to dogs a mixture consisting of two parts of the protochloride, dissolved in thirty parts of water, without causing mischief; and that this was sufficient to decompose entirely in the stomach one part of corrosive sublimate, and reduce it to the state of metallic mercury, thus rendering it inert. The results were favourable in sixteen experiments out of twenty-three; although large doses of poison had been given to the animals. The author is prosecuting his experiments, and we shall reserve our comments until they are completed.—*Annales D'Hygiène*, Juillet 1845.

OBSERVATIONS ON THE STRUCTURAL ANATOMY OF THE VEINS.

BY NORMAN CHEVERS, M.D.

THE statements of different anatomical authorities with regard to the arrangement of the structures of veins, are singularly conflicting, and prove that, even up to the present time, the examinations of these tissues have been made in an exceedingly partial and altogether imperfect manner. It is very extraordinary that no writer appears to have recognised the remarkable, and indeed entire difference in arrangement of structures which exists between the veins of the limbs and integuments, and those deeply seated within the great cavities and viscera of the body. To shew the total uncertainty that at present exists with regard to the real structure of these vessels, it may be as well to quote the statements of a few of our chief anatomical authorities upon the subject.

Meckel and Bichat described all the fibres of veins as longitudinal*. Quain considers that the greater number of the fibres of the proper tunic are longitudinal, some few only assuming a transverse direction†. Henlé describes the veins as made up of five tunics—(1), a lining of epithelium; (2), a striated or fenestrated coat of longitudinal fibres; (3), a longitudinally fibrous coat, in the large veins formed of several strata; (4), a layer occupying the place of the contractile circular-fibred coat of the arteries, but much thinner than it, and chiefly composed of fasciculi of cellular tissue, which, like that of the skin and dartos, may be regarded as contractile; and (5), the external cellular coat, with longitudinal fasciculi‡.

M. Cruveilhier remarks, that "the existence of a middle coat in the veins is admitted by authors, some of whom say it is composed of longitudinal fibres, whilst others think it consists of circular fibres, but such fibres do not really exist" (this is probably stated on Meckel's authority). "Vesalius relates that, wishing to show them at one of

* Meckel, *Manuel d'Anatomie*, t. i. p. 177.

† *Anatomy*, p. 81, 3d edition.

‡ *British and Foreign Medical Review*, No. xxvii. p. 285.

his lectures, he was obliged to confess that he had never seen them, and could not find them." It is, however, added, in a note, that "nevertheless the veins have an intermediate set of fibres, constituting a thin middle coat." A description of the structure of these vessels, nearly corresponding with that of Henlé, is then given.

Müller affirms that circular fibres do not exist in the veins*.

Gerber describes the fibres of the proper tunic as arranged in long spirals†.

Willis has given a very minute description of the anatomy of a vein, dividing it into four tunics, the *first* (or outer) of which has longitudinal fibres, which he considered as possibly muscular; the *second*, vascular and glandular; the *third*, an inner muscular coat, the fibres of which are circular; the *fourth*, and most internal, composed of fibres which are certainly muscular and annular in their course‡.

Borellus, in 1664, first described circular fibres at the junction of the vena cava with the auricle.

Conflicting and contradictory as these opinions of various observers of high authority appear to be, none of them are really, in any important particular, at all irreconcilable with a true description of the structure of particular veins,—if we except the obviously incorrect statement of Müller, that no circular fibres exist in these vessels, and that of Gerber, which is obscure, and appears to be inaccurate. The fact has evidently been, that each of these anatomists must have satisfied himself by the examination of the tissues of a single vein or set of veins, and have given his description of the arrangement of the venous structures generally from the distribution of parts which he found in that particular specimen; so that it becomes a matter of absolute certainty that Meckel, Bichat, Quain, and Henlé, must have confined their examinations entirely to the superficial and external veins of the body, while Willis could only have dissected the deep veins of the trunk and viscera.

But I think I shall be able to prove, that no greater error in anatomy can

be committed, than that of concluding that the arrangement of tissues found in a portion of any one vein, affords a type of the structure of the venous system generally; for this is demonstrably by no means the case. There are two classes of veins, which scarcely at all resemble each other in the disposition of their tissues; and there are also certain veins which present remarkable differences in the arrangement of their structures at different parts of their course.

Very moderate care in dissection will be sufficient to convince any anatomist that the arrangement of the fibres in the principal veins of the interior of the body is altogether different from that which prevails in the venous branches of the extremities and superficial parts.

Having carefully investigated the minute structure of most of the principal veins, I submit the following as a fairly correct description of the arrangement of the tissues in those vessels.

The whole interior of the venous system is protected by an extremely fine membrane, nearly similar in structure to the lining of arteries, but of rather closer texture; it is also more firmly connected to the subjacent tissue.

INTERNAL VEINS.

The proper tunic of the principal internal veins, as, for example, the inferior cava, the pulmonary, azygos, and portal veins, and the coronary veins of the heart, is composed entirely of several (at least four or five) layers of strong fibrous tissue, the fibrils of which lie parallel to each other without any interlacement. These fibres are exceedingly strong and elastic, and have a fine pearly lustre. The manner in which this fibrous tissue is arranged at a spot where a tributary vein enters the main trunk, is very remarkable. In tracing a set of fibres along the interior of large vein, to the point where a branch joins it, it will be usually found that they are not continued directly into the smaller vessel, but curve around its margin, some passing above it, others below, in such a manner as completely to encircle it (see fig. 1).

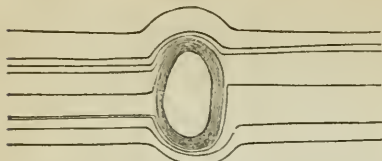
Did not this arrangement take place, it is evident that the fibres, which were transverse in the larger trunk, would, if prolonged into the branch, traverse it longitudinally; and this does occa-

* I do not find this remark in the second edition of Dr. Bayly's translation, where Schwann's description of the femoral vein of an ox appears to have been substituted.

† Elements of General and Minute Anatomy, translated by Gulliver, p. 296.

‡ Willis, De Med. Operat. Part ii. Sect. 1, page 137.

FIG. 1.



sionally occur:—I shall presently have to notice a few examples of secondary veins, which, although principally formed of circular fibres, have the tissue of their proper tunic arranged vertically where they join the main trunk. From the attached edge of the falciform process which separates the common iliacs at the furcation of the inferior cava, a number of strong fibres pass upwards, in a rather oblique direction, upon the wall of the main vein; this is the only part of the proper tunic of the ascending cava where the fibres at all incline to take a vertical course; this arrangement is evidently intended for the support of the falx which separates the iliac vessels.

At the entrance of the *renal veins*, some of the fibres from the cava at first take a longitudinal course; but after passing a little distance within the orifices, they curve round and become transverse. The remaining portions of the proper tunics of these veins are made up of circular fibres.

It will usually be found, in tracing the structure of the *spermatic veins* downwards, that to the distance of some inches below the points at which these vessels enter the cava and emulgent vein, the whole of their internal fibres take a longitudinal direction. To so great a distance does this arrangement sometimes extend, that anatomists might be led to believe, after dissecting only the upper portions of these vessels, that their fibrous tissue is arranged vertically throughout; but this is not the case, for, at a distance of from two to four inches below the orifices, some of the longitudinal fibres are found to curve at various angles, and to assume a transverse direction. This disposition becomes more general as we trace the structure downwards, until at length the whole of the proper tunic of each vessel is found to be composed of circular fibres; and this arrangement prevails throughout the remaining portion of their course*.

* Each of the orifices of the spermatic veins is defended by a pair of small valves. The utility

The superficial *veins of the organs of generation* (dorsalis penis, &c.) resemble the other veins of the integuments, being furnished with valves, and with an internal layer of vertical fibres.

The middle coat of the *pulmonary veins* is formed with circular fibres, precisely in a similar manner as the ascending cava, porta, and azygos, but its structure is rather more dense. At their entrance into the left auricle, the orifice of each of these vessels is surrounded, externally, with a complete ring of the muscular fibres of the auricle. It was in giving a description of these vessels that Willis demonstrated the circular arrangement of the fibres in the proper tunic of veins.

In the *superior cava*, at the point where it joins the auricle, the fibres take an oblique or vertical direction, but this arrangement does not usually extend far. The upper portion of the vessel and its branches are formed similarly to the inferior cava.

The *internal jugular veins* have a similar arrangement of middle tunic, the regularity of their circular fibres being broken only where they assist to form the curtains of the valves.

The *external jugulars* have their proper tunics less regularly arranged, but the prevailing direction of their fibres is transverse.

The structures of the *cerebral sinuses* (which are completely-formed veins) are rendered somewhat indistinct, and are very difficult to dissect, owing to the numerous processes of dura mater (*cordæ Willisii*) which everywhere make the canals of these vessels irregular;—it may, however, be clearly

of these valves in preventing the occurrence of sudden and dangerous engorgements and hæmorrhages in the parts from which the spermatic veins pass, must be very great. Were these slender and loosely-connected vessels perfectly open to the cava, not only would rupture of their coats and fatal effusion be liable to occur, whenever any of the frequent accidental causes of delay to the caval circulation threw an unusually large volume of blood into their canals, but various troublesome and dangerous congestions in the organs with which they communicate, uterine hæmorrhages, and perhaps fatal interference with the process of gestation, would be continually likely to happen. But we find that, to whatever extent pulmonary and cardiac obstruction may advance, the internal organs of generation very rarely indeed participate in the effusions and other similar derangements which then interfere so much with the other abdominal organs: the catamenial function often preserves its accustomed regularity, and menorrhagia is not looked for as an attendant of the thoracic disease. The other veins from the organs of generation are defended by terminating below the iliac valves.

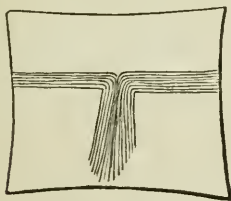
ascertained that the arrangement of the fibres of their proper tunic is similar to that of most of the other internal veins.

The external tunic of the cavæ and other large veins is furnished with a strong filamentary tissue, strengthened (in the main trunks) with bands of longitudinal fibres, which have been described as prolonged upon the superior cava from the fibrous pericardium, upon the inferior cava from the tendinous structure of the diaphragm, and along the portal branches from Glisson's capsule. The external tunic of all the other veins is formed, like that of the arteries, of filamentary and elastic tissue.

EXTERNAL VEINS.

In tracing the structure of the middle tunic of the common iliac veins downwards, it is not unusual to find that, at a short distance below the forcation of the cava, some of the fibres begin to take a longitudinal course, being arranged in such a manner that a narrow tract of vertical lines extends along one part of the vessel, the remainder of the fibrous structure being disposed horizontally.

FIG. 2.



But this is not always the case, and it frequently happens that, down to the first set of valves, the structure of these veins (or at all events, of one of them), precisely resembles that of the cava. But, below the valves, the direction of the fibres begins to change; this takes place especially at the margins of the orifices of the secondary veins, where strong longitudinal fibres appear, and descend in expanded layers. Still pursuing the dissection downwards, it will be found that the circular arrangement of the more internal layers of fibres gradually disappears, and that the whole of the interior of the vessels becomes lined with vertical fibres. If a part of the femoral vein, at about the middle of its course, or of a superficial branch, such as the median of the arm, be examined, it will be found that its

proper tunic consists of two distinct sets of layers, those internal being formed of longitudinal, those external consisting entirely of fasciculi of circular fibres. These two layers are perfectly separable and distinct from each other. My dissections of the parts have led me to believe, that this exterior layer of the proper tunic of the external veins is a continuation of the circularly arranged coat of the deep veins, somewhat altered by position and other circumstances, and that the vertical fibres are to be considered as a kind of super added (or rather intra-added) structure, which is proper to veins of this class.

In most of the external veins the outer (circular) layer of the proper tunic is denser than the inner (vertical); this is particularly the case in the femoral vein and its principal branches, which derive their remarkable strength chiefly from the great development of the former tissue. It is doubtless owing to the thickness of this structure that hæmorrhage from punctured wounds of the femoral vein usually proves so uncontrollable.

There is a very remarkable and beautiful fact connected with the structure of the *superficial epigastric veins*. The position of these little vessels places them among the number of the external veins, and yet, unlike any others of the vessels of this class, (with the exception of the external jugular), their structure is precisely similar to that of the inferior cava, and the other internal veins. The design of this arrangement is obvious, for, in cases where the canal of the ascending cava becomes obstructed, we find these vessels, with the branches forming the azygos, taking upon themselves, in part or wholly, the office of returning the blood from the lower half of the body; and thus, by a beautiful provision of nature, these apparently unimportant canals are rendered capable of taking on the functions of one of the largest vessels in the system. The *internal mammary veins* which communicate with the epigastric are similarly formed, and the *deep epigastric veins* have nearly the same arrangement of tissues.

I observed this adaptation of parts with great interest:—there is scarcely any other fact in anatomy that evidences so strongly as this does the

comprehensiveness and fore-thought of the divine plan, in the construction of the human body*.

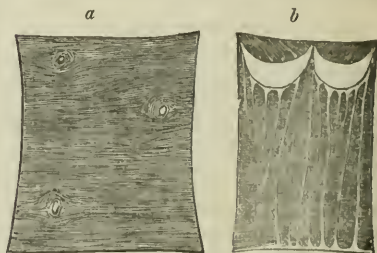
The epigastric veins are valveless. Under ordinary circumstances they empty their contents into the veins of the lower extremities; but, when obstruction to the caval circulation occurs, the absence of valves allows the direction of the current within them to be completely reversed. Observation of the direction of the flow of blood in the external epigastric veins, may doubtless be made an assistance to diagnosis in many cases of abdominal disease.

The above observations may be briefly summed up, by stating that the veins have three tunics:—the proper or middle tunic of the *deep veins* of the trunk is almost entirely composed of long parallel circular fibres, generally without any intermixture of longitudinal fasciculi, (except at one or two points where a few filaments take a vertical direction). The exceptions to this rule are few. The middle tunic of the *external*, and, with one or two exceptions, of the *superficial veins*, is formed within of a strong layer of fibres, the whole of which take a longitudinal course, in the intervals between each set of valves; and these fibres are immediately backed by a distinct layer of circular fasciculi which cross them at right angles, but without any interlacement. This outer layer forms distinctly a part of the proper tunic of the veins, and is perfectly separate from their external cellular investiture.

It will be perceived how admirably both sets of vessels are adapted, by this arrangement of their tissues, at once to fulfil their peculiar functions, and to resist the injurious influences to which their several positions frequently

expose them; the structure of the superficial veins, fitting them to undergo forcible and rapid distension and extension under sudden muscular efforts, and violent contortions of the limbs;—that of the deeper vessels enabling them to admit of far more considerable and protracted distension, during the frequent retardations to which the pulmonary circulation is liable, while the vessels of either class are so constructed as to have the power of regaining their natural dimensions, when the causes which produce their over-distension have ceased to operate.

FIG. 3.



The above figures represent the difference in structure between an external and an internal vein. In (a) the transversely fibrous structure of a portion of the splenic vein is shown; (b) exhibits the internal vertical, and the external circular arrangement of fibres in the proper tunic of one of the superficial veins of the arm. These figures correspond with preparations which the author placed some time ago in the museum of Guy's Hospital.

DIFFICULT MEDICO-LEGAL CASE!

THE following case relating to *paternity* is perhaps unique in the Annals of Forensic Medicine. It came before the Council of the Canton of Appenzell in 1835. It appears that two men had had intercourse with the same female within the period of *seven-teen days*. The woman bore an illegitimate child, and the Council was called upon to decide who was the father. They gravely postponed their decision until the features of the child had become so far developed as to enable them to form a judgment from *parental likeness*!—*Annalen der Staatsarzneikunde*. Schneider; 470.

[The equity of this difficult case would have been probably met by compelling each man to contribute to the support of the child.]

* A considerable number of cases are upon record in which, the inferior cava having become obstructed, the return of the blood from the lower part of the body was effected by the collateral venous circulation: but I saw an instance of this kind at Guy's Hospital, about a year since, which was very remarkable from the circumstance that, although nearly the whole tract of the inferior cava of an adult had become completely impervious, and had evidently not transmitted any blood for several months, there had never been more than slight oedema of the patient's lower extremities; and at the time of his death there was not any. So freely had the blood returned by the vessels which unite in the azygos, and by the superficial epigastric veins, all of which were dilated to an extraordinary degree.

CASE OF
DISEASED LIVER AND KIDNIES,
WITH PECULIARITY OF
SYMPTOMS.

By EDMUND SHARKEY, M.D.
Jersey.

A RETIRED medical officer, who had for thirty years resided at St. Helena, has had acute hepatitis, for which he was bled largely two years ago. Within two months had a formidable attack of intestinal obstruction, which reduced him to death's door. Has since been slowly recovering, but has been distressed by fits of vomiting recurring daily between 12 and 2 P.M.; also pains said to be rheumatic or gouty in legs particularly affecting the extensor muscles, with anorexia. He consulted me to-day (February 2d, 1845), and complained much of the pains in legs, also of a pain at epigastrium, nausea and tympanitic abdomen; tongue was moist, no febrile heat, pulse 74.

Feb. 23.—I was called at day-break, and found him suffering under an increase of pain in abdomen, with vomiting which had prevailed to a distressing amount all night. Bowels confined for three days; no fever. Prescribed fomentations, and threw up a fœtid enema.

R Aloes, gr. ii.; Ext. Hyosc. gr. i.; ft. Pil. sing. horis.

Enema returned alone. Threw up another, containing turpentine, with a like result. I repeated various enemata during the day, without any feculent evacuation: pulse 76. No thirst, great discharge of flatus by mouth, and accompanying the expulsion of enemata. Towards evening became very restless, and complained of increased pain; pulse 80.

Sum. Pil. ii.; ex. Ext. Coloc. c.; Pil. Hyd. c. gr. iiss.; Continuentur Fotus et enemata, et si. op. Hirud. xxiv. abdomini.

24th.—Leeches applied. Has taken two of the aloetic pills as above, and an Enema Cathartic ex. Decoct. Chamom. Some feculent matter was evacuated, and he slept for two hours. Abdomen reduced in size, and he seems much easier; pulse 104, soft and weak. During this day he became incoherent,

pulse rose to 120, very weak, and he had one or two very severe rigors on getting out of bed to stool. Has had two bilious-looking stools. Extremities inclined to cold. Dr. Schollefield was now called in to my assistance. The discharges being highly dark and offensive, and it being apparent that the liver was congested, Calom. gr. x.; Confect. Op. gr. i.; were ordered, and wine and beef-tea, which he had been taking, were discontinued.

25th.—Had a large motion before taking calomel, and two during the night. Some sleep, accompanied by wandering; toward morning some hiccup. Pulse weaker; tongue flaccid, and cool. Gave a glass of wine, made into negus, also some broth. Has passed much flatus.

To have broth, and brandy and water.

Suppression of urine stools highly bilious, fœtid, and containing a great deal of fluid. A mixture as follows was prescribed, with a view of restoring, if possible, the urinary secretion.

R Spt. Æth. Nitr. ʒi.; Ol. Myrist. ʒvi.; Ext. Sarzæ, fʒij.; Ol. Junip. ʒvi.; Aquæ Ment hæ, ʒvii.

It is needless to pursue this case to its fatal termination, which took place on the morning of the 1st of March. There had been total suppression of urine for four days.

Examination twenty-four hours after death.—The integuments presented a coat of fat fully an inch thick, and there was a greater general deposition of adeps on the internal organs than I had ever previously seen. Liver very much engorged, soft, and easily broken down; a little bile in gall bladder. Duodenum and stomach normal, but distended with gas; ileum contracted in some part of its length, but restored to its natural uniform calibre by inflation; tortuous veins seen ramifying on its external surface; numerous globules of fat seen deposited between the peritoneal and muscular coats. It contained bilious matter of same character as the evacuations during life. Kidnies each imbedded in a quantity of fat, weighing above half a pound; they were small and altered in structure; tubuli not distinct, and the pelvis completely occupied by fat: they presented no urinous smell; bladder quite empty, and found with difficulty

imbedded in a quantity of very fat peritoneum; mesentery completely interlarded.

It is very remarkable, that this patient had never laboured under any urinary affection, (by his own account at least) either as regards secretion or excretion, and yet there can be no doubt that the disease was of long standing. He had been long used to high living in a warm climate, where the skin performs so much of what would elsewhere be the work of the kidneys; and from these two circumstances arose, probably, the comparative atrophy and fatty degeneration of these organs. The same circumstances in all probability gave origin to the engorgement of the liver, and when he removed into a temperate climate, where the kidneys were called upon to do their own duty, the balance was lost, and the chain of morbid actions was set up which caused his death. It is quite certain, from the great quantity of fluid passed by the bowels, while the ischuria existed, though but a small quantity of drink was taken in, that the liver and intestines performed a vicarious office, and thus prolonged life for a little.

Now, viewing this not as an isolated case, but (as I believe we are warranted) as the type of a class, is there not some instruction of importance to be derived from it? It is too true that Europeans in general, who go to reside in tropical climates, take no precautions against the consequences which might be naturally expected to result to their constitutions from so great a change. Instead of adopting a diet similar to that upon which the natives maintain a sound state of health, they persevere in the use of the same quantity of stimulating food, which in a cold climate is (if not necessary) at least *managed* by the system. This, in a situation where the carbon is more apt to accumulate, soon leads to engorgement of the liver. Again, from the increased activity of the cutaneous exhalents, a comparative torpor of the kidneys ensues, and wherever there is a diminution of function it is a law of nature that there will be arrest of development, or even positive atrophy: hence, upon their return to their own climate, a new source of danger. The kidneys are called on suddenly to resume their

former functions, and instead of allowing them time and opportunity to recover themselves by a suitable regimen, they are too often put on extra duty by an increased allowance of stimulating drinks; and hence the twofold mischief which took place in the case under consideration. These are points which ought to be impressed upon the minds of those who are leaving or returning to their own homes, from the fervid regions of the tropics; and I most respectfully submit them to the notice of the profession with that view.

Winchester Place, Jersey,
June 26th, 1845.

RAPID SUCCESSION OF SENSATIONS—MEASUREMENT OF THEIR RAPIDITY.

DR. HASLAM, in his work on Madness, mentions an experiment performed by Herschel, in order to determine the number of sensations which might pass through the mind in a given period of time. For this purpose he constructed a clock which produced sounds succeeding each other with such rapidity, that the intervals between each of them were, so far as could be judged, the smallest possible. By careful experiment he ascertained that he could evidently distinguish one hundred and sixty of them to flow in a second of time. Now as each interval between the sounds must, in this case, be reckoned as a sensation likewise, because it might be filled up with a sound, thereby making it a continued one, it follows that the mind is capable of perceiving at least *three hundred and twenty audible sensations* in that period of time.

The succession of ideas may be even more rapid in the healthy subject than this ingenious experiment would indicate; but it is doubtful whether any sense be so well adapted as the ear for the measurement of their rapidity. In insanity, as Dr. Haslam remarks, the succession of ideas is too rapid to be examined; the mind becomes crowded with thoughts, and confusion ensues.

The effect of negative sensations, or of intervals of quiescence between sounds, in producing a positive impression on the mind, and acting as a direct stimulus, is strikingly seen in the fact, that if an individual fall asleep with a continued impression of sound upon the ear, as of a waterwheel, he immediately awakes upon the cessation of the sound; that is, when no positive impression is produced on his sense of hearing.

MEDICAL GAZETTE.

FRIDAY, AUGUST 8, 1845.

THE great subject of discussion at the present moment, is the "Supplementary Charter" which is about to be granted to the Royal College of Surgeons of England. From many communications which have reached us, there appears to be very great anxiety on the part of the members excluded from the Fellowship, to know the provisions upon which the new charter is to be based. It is very natural that such a feeling should exist, and we verily believe, that had a reasonable proposition of this kind been carried out with respect to the original charter, it would not now have been necessary to issue a supplementary one to amend it. If any proof were wanting of the correctness of this view, we would only refer to the effect of publicity on the various Physic and Surgery Bills, which have been laid before the House of Commons. Although the Home Minister has hitherto been unfortunate in propounding a measure satisfactory to the majority of the profession, much good has accrued from a discussion of the provisions of these bills. Discontent may have been pretty strongly manifested, at one time by the Colleges, and at another by their Members, yet one fact is certain,—injustice has not been done. The good and the evil of each successive measure have been well canvassed, and it is quite obvious that, had they not afforded time for a critical examination of the bills, our legislators would have been working in the dark, and the next session would have seen "an Act to amend and explain an Act" which ought never to have been passed.

It is for this reason, that we approve of the resolution passed at a meeting

of the Manchester Medical Reform Committee, and inserted in our last number,* to the effect, that no "Supplementary charter" should be granted to the College, until its provisions have been published for the information of the Members. With every disposition to believe that the Council of the College have discovered the mistake which they committed in their mode of selecting the Fellows, we really cannot perceive why there should be any difficulty in their acceding to this reasonable request. We do not presume that any objection can exist on the part of Sir James Graham, as it is a concession which cannot at all affect his position as a legislator; and he has already given good proof of his desire for discussion, by bringing forward four medical bills differing essentially in their provisions from each other. The Supplementary Charter will affect large masses of the profession, and must have an important influence on the final settlement of the Medical Reform question. Why, therefore, should publicity be courted in the one case, and shunned in the other? The very fact of requiring a new charter is an indication that the Council of the College are desirous of retrieving that influence with the profession which has been so seriously compromised. Let this conciliatory disposition be further manifested by an open and complete declaration of the changes which they propose to make. The Council need not dread discussion: they may be assured that no arrangement will be final or satisfactory which will not bear it. Hence we consider that a candid announcement of their views at the present time, would be not only an act of justice, but one of sound policy. The concealment of the changes which they propose to make, can be only temporary, and if dissatisfaction is to arise

* Page 607.

from them, this had better be met at once. It would be wiser on their parts to do nothing, than that, under the show of removing a grievance, they should only add to the discontent which already prevails.

Some very sensible remarks on this subject have appeared in a political cotemporary*. We agree with the writer in the opinion, that it will be better not to anticipate, in the memorials presented to the Home Minister, any questions of detail regarding the Fellowship. "Let the right to consider the Charter be firmly insisted on in the first instance, and the discussion of its clauses follows in a proper course." This is reasonable advice, and we think it would be well if the profession would act upon it. Each section of memorialists would probably differ respecting the number of years' Membership which should give a title to the Fellowship, and the conditions which should become grounds of disqualification for the honour. These differences might, therefore, constitute a reason for not acting upon the advice contained in any of the memorials, and lead to a refusal of that publicity which we believe to be desired by the large majority of the profession, until the charter has received the Royal sanction.

The Bristol Association of Surgeons have recently issued a Memorial, in which they express a hope, that all those who were admitted members of the College previous to September 1843, shall be admitted to the Fellowship under such restrictions as her Majesty's Government may consider necessary. The memorial is respectfully worded, and places in a strong light the injustice which has been already done. We do not see that any member of the College could object to sign it, except upon the ground that a very recent date is fixed for conferring a right to

the Fellowship on the members. This is an anticipation of details, and is therefore likely to create difficulty. While we are advocates for a very liberal distribution of the Fellowship, we cannot see why the right should be conferred on all who were members previous to the period at which an obnoxious charter was accidentally issued. Had a principle of seniority, modified by fair restrictions, been adopted by the College at that time,—*i. e.* had they originally selected men according to their standing of ten, fifteen, or twenty years in the profession, there would not have been that outcry against their proceedings which now renders a revision of them necessary. We think the Fellowship should be made a mark of a certain standing, and that all members should, where no disqualification exists, have a right to it by seniority. We believe that this is the view entertained by the greater number in the profession. The plan recommended in the Bristol Memorial, creates no distinction between the Membership and Fellowship, except with respect to those who happened to pass after the publication of the unpopular charter. These members might reasonably ask, why their title is to be defeated by an accident of this kind, and why all who became members prior to the issuing of the amended and legitimate charter, should not also have a claim to the Fellowship? Details of this kind must give rise to endless discussion, and we therefore think our Bristol brethren, good as we believe their intentions to be, would have acted wisely if they had omitted the last clause of their Memorial, and have simply insisted upon the equitable right of the members at large, to be made acquainted with the provisions of a document, which will materially affect their interests.

* Times, Aug. 4.

Reviews.

Seven Lectures on Somnambulism.

Translated from the German of Dr. ARNOLD WIENHOLT. With a Preface, Introduction, Notes, and an Appendix. By J. C. COLQUHOUN, Esq. Advocate. Sm. 8vo. pp. 219. A. and C. Black, Edinburgh; and Longman and Co., London. 1845.

WE have always felt unwilling to introduce notices of works on mesmerism into this journal,—not from an illiberal wish to keep down or conceal the development of any matters of fact relative to the constitution of man, however trifling and unimportant those facts might appear to be,—but from a determination not to render our pages the arena for intemperate and profitless discussions, or the vehicle for the exposition of the wild theories of imaginative dreamers, or the unprincipled assertions of men resolved to deceive. But the remarks of a very clever and— notwithstanding his strong devotion to a cause fraught with error—we believe, very faithful advocate of mesmerism, force, rather than lead us, to make a few observations upon this, otherwise, almost forbidden subject. While strongly urging the necessity of a cool, fair, and philosophical inquiry into the mesmeric question, the learned translator of Dr. Wienholt's lectures attacks the science of medicine and its faithful practitioners with a violence which would be formidable, did it not evidently emanate from an opponent very scantily acquainted with the ground of the positions which he assails, and actuated by a spirit infinitely less cool and less philosophical than that against which he so energetically inveighs.

Starting with a conviction that the great body of the medical profession are the chief opponents of mesmerism, the learned advocate, after freely enough imputing prejudice, bigotry, and narrowness of mind to the recusants of his doctrine, adopts the *tu quoque* style of argument, and endeavours to prove that, in various times and upon different subjects*, medical men have, when it suited their purposes or hit their fancies, shown a degree of credulity and superstition in

which the enthusiasts of the mesmeric school were completely outdone;—and he evidently conceives that he has succeeded in adducing an argument most discomfiting to his opponents when he declares that, if the practice of animal magnetism is considered to be dangerous, the practice of physic is infinitely more so:—in proof of which he gives an instance where “an ignorant and unskilful practitioner, in the course of an apparently trifling operation, divided an important artery, and left his patient to bleed to death;” and adds, as an *elenchus*, the opinion of “the celebrated Dr. Frank,” who (doubtless drawing his conclusion from his own clinical experience) affirmed that “in regard to ordinary medical practice, thousands are slaughtered in the quiet sick room.” We are surprised that a counsel learned in the law, and one accustomed to debate, should adopt this weakest of all kinds of argument—the recriminative—in a style of wordy attack less coarse, but not more rational, than that which, we doubt not, he may any day succeed in eliciting from every New Haven fish-wife he encounters in his morning's stroll. He no more succeeds in proving the rationality and safety of the mesmeric system by discovering the errors and faults of medical practice, than he would in demonstrating that he is a sound lawyer because such and such medical men are or were very incompetent physicians. We assure him that the ingenious but loose style of disputation which puts aside serious and rational arguments with a brisk sophism or a witty rejoinder, and which often tells so well upon the puzzled minds of a jury, has little weight when launched at the cool and dispassionate reason of men of science.

We will endeavour to give Mr. Colquhoun a few of the reasons which cause a large proportion of our class (men in reality quite free from bigoted and illiberal feeling) to refuse to engage personally in any examination of mesmerism, or in any controversy upon its merits,—although freely admitting that a certain proportion of truth is blended with the errors and deceits of the so-called science.

Mesmerism has, from its rise, been most unfortunate in its advocates. As certainly as the trade of horse-dealing attracts into a particular sphere a con-

* See a ridiculous instance at p. 20 of the Preface.

gregation of knaves and dupes, so certainly has animal magnetism always called together wilfully deceiving practitioners and mistaken and enthusiastic converts. Had the matter, in the first place, fallen into the hands of a few men of sure integrity, active perseverance, and strong common-sense, we doubt not that a certain number of interesting and possibly useful psychological and physiological facts would long ago have been received, upon their testimony, by philosophers of all denominations. But such a vast accumulation of deception and error has now been, for so many years, collecting over the always obscure truths, that very few reasonable men are willing to believe that the disinterment and sifting of the real facts, would repay the enormous labour and loss of time which the task would require. It is not surprising that men who value their characters, and who have justly gained reputation for their quickness of perception and acuteness of mind, should be unwilling to become the judges of experiments by mesmeric practitioners, nine-tenths of whom are either cunning impostors or the dupes of their own ill-regulated imaginations. To require that a set of respectable medical men shall consent to state their opinion upon any given mesmeric performance is as preposterous as to expect that the members of the Royal Society would be willing to submit—after viewing the slight-of-hand tricks of an ingenious conjuror—to have the alternative put to them of either detecting the precise manner in which the jugglery was performed, or of recording an acknowledgment that they believed it to be effected by some very extraordinary means, the nature of which was “not dreamt of in their philosophy.” No; the frauds and the follies of the practical and theoretical mesmerists and mesmerised, have thrown so complete a shade of doubt over the whole matter, that the task of developing any truth which belongs to it, must rest entirely with the more honest and more sensible of its present advocates. Men of real science recognise the characters of a sound fact as readily as a money-changer does the clink of a sterling coin; such men will not refuse to be convinced when really good evidence of any facts is fairly brought before them. But it will be necessary, for

the success of this endeavour, that those who undertake it, should prove that they have pursued their task without prejudice, passion, or credulity; and that they have educed their reasons *more philosophorum*, and not leaped at their conclusions in a hasty and enthusiastic manner.

Although admitting that we feel some respect for the talents of Mr. Colquhoun, we must say that he has, in the remarks appended to these lectures, shown so many instances of ready credulity, and so incorrect a style of arriving at conclusions, that we cannot consider him to be a fit person to engage in the investigation of this or any other question of recondite science. If it were not a waste of emotion to allow ourselves to be amazed at any thing, in an age so teeming with wonders as the present, we should feel greatly astonished to find that so clever a man as Mr. Colquhoun, and one long accustomed to weigh evidence, should stand forward as an unreserved advocate of Miss Martineau's delusions; but this is, we suppose, really in the natural course of things. There has never been placed broadly before the public a dream of lunacy so wild, or a theory of folly so preposterous, or an attempt at fraud so glaring, that during the interval of popular astonishment which has succeeded its announcement, some chord of sympathy has not been set vibrating in the minds of persons from whom greater wisdom might have been fairly expected, causing them to cast their reputation as men of sense, and often as men of character, upon the miserable task of supporting the delusion. When we know that the ravings of the unfortunate Brothers gathered crowds of admiring and believing proselytes of education and high rank, and even enlisted one of the most learned and ingenious of the senators of that day, as a defender of his hallucinations; when we know that, a very few years ago, a knavish fanatic named Matthews gained several of the principal merchants in New York to the belief that he was endued with powers to which it would be profane to do more than allude, and when the absurdities of the Southcottian mania are familiar to all, it appears less astonishing that the self-deceptions of so talented a person as Miss Martineau

should have found a champion in an ingenious Edinburgh advocate, who is even willing to declare that her case is (legally speaking) "*primâ facie* a good one." Now we shall, no doubt, be thought very presumptuous by Mr. Colquhoun, and be charged by him with touching upon matters which are not within our province (a charge to which that gentleman himself is particularly open,) when we state, with much deference, *our* firm conviction, that the lady's case, as related by herself, is "good" neither in law nor in physic. And for this reason: the evidence adduced on the side of the mesmerists is that of Miss Martineau herself—a person of course totally unacquainted with pathology, and with her physical sensations, and most probably her mental perceptions altered and deranged by long illness;—on the other side, we have the testimony of Miss Martineau's medical attendant, and of a host of other pathologists, who believe it to be utterly impossible that animal magnetism, or any other analogous process, could have the effect of removing the *organic lesion* from which that lady recovered during the time she submitted to the mesmeric treatment. Now we have little doubt, that any court of judicature in Europe would always receive a consistent medical declaration, upon an obscure case, even although it came from the humblest member of the profession, in preference to that of the patient himself, or that of any lawyer, however talented, who chose to hazard his crude opinion upon the subject. We do not wish to hurt Mr. Colquhoun's feelings, but we must assure him that he really appears to have no more conception of the true bearings of a question in medical science, than the generality of the licentiates of the Apothecaries' Company, would have of the most intricate point in criminal jurisprudence. We would seriously advise him, either to leave medicine fairly to the doctors, or to qualify himself for this kind of medico-legal argument, at least by the aid of a few course of lectures; and by the authority of an Erlangen degree.

At present he appears to have very singular notions with regard to physical laws, for he gravely tells us that, "in a collision of intellect and reasoning," he is "satisfied that Miss

Martineau's little finger could easily crush all her puny male opponents into powder!" Can this really be possible? We have certainly heard that, under the mesmeric condition, remarkable powers are conferred upon otherwise very weak individuals; but if Miss Martineau really can perform such a destructive feat, we must earnestly exclaim against the propriety of suggesting to the lady, this digital mode of crushing at once the frames and the arguments of her adversaries. As a legal practitioner, Mr. Colquhoun must be aware that, in case such an act of violence were committed, any "intelligent jury" in the country would consider that gentleman a direct *particeps criminis*, in bringing about the fate of the pulverized editors. Miss Martineau has been, for some time, employed in throwing dust into the eyes of a large number of her Majesty's lieges; it would be well to inquire whether she may not have been exercising this comminuting faculty in secret, and whether any of her medical neighbours—notorious for their incredulity—have lately disappeared. But possibly, Mr. Colquhoun stated this ironically, and is not in reality more in earnest than were "some of the profession" by whom, "upon the first introduction of the vaccine inoculation, tender and timid mothers were seriously warned to beware of adopting the new preventive of small-pox, lest their progeny should ultimately become metamorphosed into cattle!" (Preface, p. xx.)

Mr. Colquhoun's remarks almost conclude with the words, "our attention is called off to other matters:"—we trust that his attention will, in future, be wholly engrossed in the consideration of those, or of many other useful matters, to the exclusion of mesmerism. We are convinced that if he will but employ as much ingenuity and labour on those other, doubtless important, matters, as he has devoted to this unhappy cause, he will prove, if not to his own satisfaction, certainly to that of others, the broad principle—that talents were bestowed upon men to be employed in duties of practical usefulness, not to be wasted in vain dreamings and wild speculations; and that the estimation of the world and the consolation of self-approval, are most surely found in pursuing the

strict duties of our own appointed callings, not in meddling with the affairs of others, with which neither our education nor our frame of mind enables us to grapple.

We wish to part upon friendly terms with this clever stranger, whom we have met wandering far from his own allotted track, in the paths of science; and whom we have, with much good will, cautioned against trespassing upon dangerous ground:—we therefore advise all those of our readers who feel assured that their organs of wonder are in a perfectly quiescent state, to devote an hour or two to the perusal of this very ingenious and amusing little book.

Manual of Diseases of the Skin, from the French of MM. Cazenave and Schedel, with Notes and Additions.

By THOMAS H. BURGESS, M.D. Sm. 8vo. pp. 320. London: Renshaw.

OWING to accidental circumstances, this translation of the excellent treatise of MM. Cazenave and Schedel has for a long time escaped our notice. In its original form, the work embodies the large experience of M. Bielt, at St. Louis; and the well-executed translation before us has received some valuable additions from Dr. Burgess. The classification adopted is that of Willan, and the description of each form of cutaneous disease is almost always ample and correct. In the section on syphilitic eruptions, the observations, so far as they go, are good; but considering the great importance to the practitioner of a thorough acquaintance with those diseases, we think they should have been treated at greater length. With this exception, this little work is an efficient practical guide for the student in relation to diseases of the skin. Dr. Burgess's remarks are not very numerous, but are always judicious. He has introduced an interesting history of Glanders and Farey as they occur in the human subject; and we should have made rather full quotations from this part of his treatise, had we not previously marked the subject for future insertion in another department of the journal.

Medical Trials and Inquests.

POISONING BY SAVIN (JUNIPERUS SABINA)
—ABORTION. DEATH OF THE WOMAN
AND CHILD.

ON the 20th of May, 1845, an investigation was resumed, before Mr. Wakley, with respect to the circumstances involving the deaths of Caroline Hillman—a single woman aged 24 years, and her male infant.

—Matthews, brother-in-law to deceased, was the first witness called. He said deceased was a servant lately residing at Frome in Somersetshire. I last saw deceased alive on Thursday the 9th of May, when she left my house (where she had been staying until the preceding Thursday.) She was then going to lodge at Hampstead with a Mrs. Richardson—a nurse. I was informed that deceased was pregnant at that time, and was going to Hampstead to be confined. I saw her about an hour after she died on Thursday, the 16th of May. Deceased made no concealment of her pregnancy. My wife recommended Mrs. Richardson to deceased. Have known Mrs. Richardson about a year and a half; she attended my wife as a nurse.

Mrs. Allen. — I am landlady of the house at Hampstead where deceased lodged. Deceased expired at seven in the morning on Thursday, the 16th of May. She had been in my house about a week. I was informed of her pregnancy six months before she came; Mrs. Richardson partly engaged a lodging for her. Saw deceased on Thursday, and again in bed on the following Monday, about nine or ten o'clock, by the request of Mrs. Richardson. Deceased said nothing of her pregnancy. Mr. Gower was in attendance. A girl—a stranger—was brought by Mrs. Richardson to attend deceased. I saw her again on Wednesday, at seven o'clock; she was sensible, and made no complaint. She was ill from the time she arrived. Mr. Gower was there on Monday, and attended her with care all through; there were a great many strangers there; three females were there. Mr. Gower fetched them. Deceased was confined on the Wednesday. I saw the child alive. Mr. Gower was there twice or three times in the evening. Deceased became rapidly worse about six o'clock on the following morning. Mr. Gower arrived at half-past six—half an hour before her death. She had no flooding, and made no complaint of having had a severe labour. She was very sick on Sunday; seemed drowsy on Wednesday. Mr. Gower left her about eleven o'clock on that evening. Mr. Gower was there on Wednesday evening. Deceased said nothing about having taken medicine.

Mrs. E. Richardson examined.—I never knew the deceased until the day before I brought her to Hampstead. I was hired by another person to act as nurse. Mrs. Matthews was to pay me. I understood that deceased had two months to go before her confinement, but nothing was said about a medical man. She walked with me part of the way to Hampstead on Thursday; we came the remainder of the distance in an omnibus; she appeared pretty well. I was out for three hours on Friday morning, and went away on Friday night; the deceased was left by herself. I returned at mid-day on Monday, and brought a girl, about fifteen years of age, to attend upon her. I found deceased was then better.

By the Coroner—I mean that deceased appeared to have recovered from her fatigue in coming here. She said that she had been sick, and she was sick when I saw her at noon on Monday, when some tea was given to her. I made no inquiry about her illness: heard from my husband, that Mr. Gower was called in. I bought no medicine, nor was any bought in deceased's presence in coming to Hampstead.* I was with her for an hour on Monday; she was quite sensible. I then went away, and did not see her again alive. She made no remark then about her confinement. I left the girl with her. Preparations were made for the child by Mrs. Matthews. A man (a stranger) who lodged with me spoke to me about deceased.

The girl N——.—I am 15 years of age; my father is a labourer. I was hired by Mrs. Richardson: I remained about deceased from Monday: she made no complaint. I first saw Mr. Gower on Tuesday morning; he came of himself, but he had been attending her since Sunday. Mrs. Gower first appeared on Wednesday; Richardson the husband was there on her arrival; he was there the greater part of Monday. She was ordered by Mr. Gower to take a tablespoonful of some medicine every other hour.

By the Coroner.—The medicine was rather of a blue colour. The witness was desired to point out any object in the room which was of a similar colour to the medicine. She pointed to a glass of a deep green colour, and said that it was something like that, but did not appear confident of the resemblance.

The bottle containing the medicine held about a half quarter of a pint; it was brought by Mr. Gower. Deceased complained of a pain in her bowels. I gave her a dose of the medicine at four o'clock; there had not been much taken out of the bottle before. She was very sick on the Tuesday morning about seven o'clock. She was often sick on

that day. That which she vomited was of a green colour,—it was of a darker colour than the medicine;—after she had vomited two or three times it became whiter and less green. She afterwards had another medicine of a reddish colour—a teaspoonful every three hours. Richardson fetched Mr. Gower at half-past eight on Wednesday morning: deceased was then worse. The child was born at nine o'clock, while witness was away. Mr. Gower was with her alone. I knew nothing of the delivery. The child lived until eight o'clock at night. Mr. Gower saw deceased twice on Wednesday. There was baby linen ready in deceased's box: it was taken out by Mrs. Allen.

At the conclusion of this witness's evidence the coroner inquired of the medical men whether, from their examination of the body of the deceased, and from the evidence they had now heard, they were able to state positively that the deceased died from natural causes;—if they could do so, it would be unnecessary to summon any other witnesses. They replied that they were not able to declare that she died from natural causes.

The Coroner.—Then it will be necessary to adjourn the inquest, that we may obtain the evidence of all the persons who saw the deceased during her illness.

The inquiry was resumed on the 3rd of June.

H. Peine examined.—I am daughter to Mr. Richardson. I never new the deceased until Whit-Sunday last—the Sunday before her death—when I met her at her father's house; I attended upon her at her father's request. My father told me that she had jaundice, and had two months to go before her confinement. When I saw her she looked black (livid); she said she could keep nothing on her stomach during the previous night. Deceased said she had had no medical advice, that she was very ill, but her friends would not believe it. She said she expected two gentlemen friends to visit her. I gave her some gruel, but she could not keep it on her stomach; she told me that she had not taken any thing. Deceased came down stairs about four o'clock; she was then very ill; she took some tea, which she vomited. I then proposed that Mr. Gower should be sent for; deceased said she should be glad to see him if he were the person Mrs. Richardson recommended. Mr. Gower came in a short time; he asked her with regard to the jaundice, and the duration of her pregnancy, and said that she was in a very dangerous state. He sent her two pills, to be taken directly, with the fourth part of a dark medicine smelling of peppermint: the same to be taken every four hours. She vomited the dose immediately. I was in attendance upon her un-

* Some pills were found in the possession of this woman, which on examination turned out to be common aperient pills of compound extract of colocynth and calomel.

til a quarter past twelve on that night, when I left her, and never saw her alive again.

By the Coroner.—Mr. Gower said that labour would be very likely to come on; therefore she ought not to be left. I was in the room the whole of the time Mr. Gower was there: do not recollect that he made any examination of the deceased. Deceased told him she was in great pain, and that she had been jaundiced two months; he inquired whether she had not braced herself in to conceal her pregnancy; she replied yes; he said that accounted for her ill health. The matter vomited by deceased during the whole of Sunday, before Mr. Gower saw her, was of a very green, colour and frothy. Mr. Gower saw her first about six o'clock on Sunday evening. Before she saw Mr. Gower she had vomited every time she attempted to take any thing: this occurred about twelve times in the day. I found green matter in the wash-hand basin in which deceased had been vomiting during the night, and when I first shewed it to Mr. Gower the basin was half full. I threw the contents of the basin away myself—not by any one's direction: there was a sediment, which seemed of a slate colour, at the bottom of the basin. Deceased said she first began to vomit on the Saturday evening; said she could not account for the sickness; that she was not aware of having taken any thing to produce it. I heard nothing to lead me to believe that Mrs. Richardson had previously consulted Mr. Gower; there was nothing in his manner to lead to that belief. He asked deceased particularly whether she had taken any medicine, or had had any advice previously. Deceased did not attempt to conceal her pregnancy from me; she said nothing of an intention to produce miscarriage; she did not complain of any person. There was not the slightest secrecy in deceased's conference with Mr. Gower. There was no blood in the matter she vomited, or in the urine.

Mr. Samuel Gower.—I am a surgeon residing in Hampstead. I was sent for by Mr. Richardson, about five or six o'clock on Sunday evening. I am not aware whether I saw Richardson at my door. I found deceased sitting by the fire with a face of great anxiety, and a pulse of one hundred and fifty; her symptoms were such as might belong to the latter stages of typhus or gastro-enteritis. I thought her very ill. I gave four grains of the Chloride of Mercury with one-third of a grain of Acetate of Morphia. Throughout the case I had no reason to believe that she had taken any poisonous matter, or had attempted to produce abortion. I also sent her a saline medicine containing Nitrate of Potash, Camphor Mixture, Spearmint water, and Tragacanth powder, slightly coloured with Cochineal.

She could not keep the medicine on her stomach, and after two doses I discontinued it. I am rather doubtful whether I saw deceased twice or three times that evening; I was mistaken in saying that I gave her four grains of calomel at first, but I gave her some powders containing calomel at first. On Monday I first saw that the vomited matter contained a green deposit; I considered the green deposit to be precipitated bile. On Monday I ordered a blister to be applied over the cardia, but it was not applied until I put it on myself the next morning. I then sent her a saline effervescent medicine; its colour was slightly blue. On Wednesday morning I found her in labour, and the labour was accomplished rapidly and successfully. The fœtus, membranes, and placenta, were expelled together. There had been a slight rallying of power in the deceased at the time of her delivery, but she continued to sink from that time. I said I did not think the child would live, and advised that it should be christened; the child was christened in the room below. Deceased sent word to the clergyman that the father's name was James Ganes, and the mother's name Caroline Ganes. I then went into the city to look for Mr. Matthews. In my absence Mrs. Gower was persuaded to see deceased, and went to sit with her. Mrs. Gower saw deceased on Thursday, at 6 o'clock A. M. Mrs. Gower said that she and Mrs. Allen had looked over deceased's things, and put a seal on her box: the property was left at the house. Mrs. Gower brought away a memorandum-book found in deceased's box, containing a receipt for four weeks' rent paid in advance to Mrs. Allen, together with a few memoranda of disbursements, a wedding ring, and a box of pills; one of these I broke, and considered it to be blue pill. When called to attend deceased, I understood that she had had vomiting for a week previously. I considered that she was in the last stage of severe and neglected disease. I had no reason to expect labour until I found it had commenced.

By the Coroner.—I may possibly have suggested, on the Sunday, that abortion might occur, but I do not remember it. I was shown the vomited matter when I first saw deceased; it was very green; I gave her no medicine of that colour. I did not think of asking whether she had taken any thing to produce abortion. I was told by deceased for the first time, that she was pregnant, on Sunday evening, at my first visit. I had never heard of deceased before, and had had no conversation with Mrs. Richardson for six months previously. There was nothing peculiar in the labour.

Mr. Charles Lord.—I am a surgeon residing at Hampstead. I did not see the de-

ceased during her life. I opened the body on the Saturday morning following her death. The countenance was much discoloured. There was great lividity of the body externally,—its general appearance was that of a healthy person. The brain was healthy. There were about three ounces of serum in the right pleural cavity. The lungs were healthy, except that the mucous membrane of the air-tubes was of a dark red colour and had a great deal of sanguinolent mucous secretion. The heart was not diseased, but flabby. The blood was generally fluid. A great part of the lining membrane of the œsophagus was inflamed, being reddened and presenting spots of ecchymosis. One half of the mucous membrane, from the cardiac orifice upward, presented a dark red arborescent injection with slight patches of ecchymosis; there was no erosion or ulceration. In the stomach a large patch of redness, about three inches in length, extended from the greater curvature towards the pylorus. The vessels of the mucous membrane were considerably injected, forming infiltrated patches, especially about the lesser curvature, extending toward the cardiac end, but there was no appearance of ulceration or erosion. The stomach contained about eight ounces of greenish fluid, nearly of the appearance and consistency of green-pea soup, and of a bland odour. This fluid has been tested by Mr. Taylor, who assisted in the post-mortem examination. The external vessels of the stomach were much congested; the peritoneal coat was of a dark livid colour; especially toward the cardiac end. The duodenum contained three drachms of a greenish brown mucous fluid, almost of a gelatinous consistence; its interior was intensely inflamed, (especially towards the pylorus) and of a cinnabar red colour. Its mucous glands were enlarged, and there were several ecchymosed patches beneath its mucous membrane; towards the jejunum its interior was paler. The intestines were unusually empty. The jejunum was less inflamed. There were patches of inflammation in the ileum, the mucous membrane of which was tinged with minute points of blood. The lining of the transverse arch of the colon was deeply injected, and of a reddish fawn colour. Its mucous glands were considerably enlarged. The sigmoid flexure of the colon contained some brown liquid of fæcal odour: (this fluid was tested for metallic and mineral poisons, but nothing of that nature was discovered): here the mucous membrane was generally pale, with slight injections: the mucous glands were enlarged. The mucous membrane of the rectum was generally pale, with slight patches of injection; the glands much enlarged; externally, its peritoneal coat was of deep red colour, in a patch of an oval form

about two inches in its long diameter. There was a great deal of diffused inflammation about the abdominal organs generally; some points of lymph were effused under the peritoneal covering of all these viscera. There was some peritonitis, chiefly of the upper part of the intestines and omentum:—the latter was of a cinnabar red colour, the vessels highly injected and tortuous. The peritoneum lining the abdominal muscles was very much injected.

By the Coroner.—The peritoneal inflammation had evidently spread from above downwards, not from the pelvis upwards, which is usually the case in females who die of peritonitis consequent upon labour. The mesenteric glands were enlarged, and the folds of peritoneum inclosed some small granules, probably miliary tubercles, which may have been quiescent until the mucous irritation set in. The liver was rather soft, but did not appear diseased; there was no appearance of any kind of obstruction having existed in the gall ducts; the gall bladder contained no gall stones, and was well filled with healthy bile. The kidneys appeared inflamed; the cortical portions were of a dark red colour, and the mucous membrane of the pelvis and ureters were also inflamed. The bladder did not contain any urine, and was healthy. The uterus was but little inflamed, and well contracted; the peritoneal covering of its fundus was injected. I consider the uterus had kept its integrity better than most of the other organs. The right ovary appeared healthy, the left was reddened, turgid, and adherent by recent bridges of lymph to the sigmoid flexure of the colon. There existed sufficient inflammation in the stomach and bowels, and contents of the abdomen generally, to account for death.

The Coroner told Mr. Lord that he should call upon him to state his opinion with regard to the cause of the inflammation, after he had heard the deposition of Mr. Taylor.

Mr. Alfred S. Taylor.—I reside at Cambridge Place, Regent's Park: am lecturer on Medical Jurisprudence and on Chemistry at Guy's Hospital. I perfectly agree with Mr. Lord in his account of the appearances discovered in the body of the deceased. I assisted in the post-mortem examination. I will read the notes which I took of the examination of the fluids contained in the stomach of deceased, &c.

The Coroner.—Those notes were taken at the time you made the examination? they are not from memory?

Mr. Taylor. — They were made at the time.

The following is a copy of the notes referred to by Mr. Taylor.

1st. That in company with Mr. Lord I examined the œsophagus, stomach, and

large and small intestines of the deceased, (May 19th,) and found the appearances described in the notes.

2d. That I examined the contents of the stomach for arsenic, corrosive sublimate, the salts of lead, copper, and antimony, by various chemical processes, but without detecting any traces of metallic or mineral poison.

3d. That I subsequently examined the contents of the stomach for opium, nuxvomica, oxalic and sulphuric acids, but none of these substances were present.

4th. That I examined the contents of the large and small intestines separately, but without discovering any mineral or metallic poison.

5th. That feeling persuaded that some irritant substance must have been taken during life to produce the appearances found in the œsophagus and stomach, I collected some of the green substance found in the latter organ, dried it, placed it in mica, and, assisted by Mr. Johnson, submitted it to a good microscope with a magnifying power of 170 diameters.

6th. The result of this examination by several instruments, and with the aid of others accustomed to microscopical researches, was, that the green substance found in the stomach of the deceased, consisted of the powdered leaves or tops of savin—a substance frequently employed for the purpose of procuring abortion. The conclusion was confirmed by preparing powdered savin washed in water and submitting it to the same microscope: the botanical characters were identical.

There was no colouring matter of bile in the stomach.

7th. In a quantity of powder extracted from the stomach, Mr. Johnson and Dr. Gull detected, when dry, the peculiar odour of savin; thus confirming the previous inference.

8th. The exact quantity of powder contained in the stomach could not be determined, seeing that much of it was reduced to a very fine powder, and mixed up with eight ounces of liquid. From the examination of 3j. of liquid, I calculated that this quantity would contain at least from three to four grains; therefore the whole quantity found in the stomach of the deceased may have been from twenty-five to thirty grains.

9th. Savin would account for the appearances met with in the body of the deceased. It is an irritant poison, owing to its containing an acrid volatile oil. It seldom produces abortion without placing life in danger by its violent irritant action on the stomach and bowels. It has caused death at least in four cases under these circumstances. The medicinal dose of the

powder is from five to fifteen or twenty grains—in large doses it is poisonous.

10th. I subsequently examined the liver of the deceased; there was no appearance of disease about it,—perhaps a little enlarged. The gall bladder was distended, and contained healthy bile. I also examined one kidney; its substance appeared congested, but the organ was otherwise healthy.

11th. I examined also chemically sixteen ounces of blood, taken from the deceased, (the heart) but without finding in it any trace of poison of any description.

My opinion from this examination is, that considering the inflamed state of the œsophagus, stomach, and intestines, with marked peritonitis, not connected with the uterus—the presence of savin in the contents of the stomach, and the otherwise healthy condition of the body—that the deceased died from the effects of this vegetable irritant poison.

The Coroner.—When you tested the contents of the stomach for arsenic, &c. &c., did any of the chemical results lead you to suspect, even for a moment, that any of those poisons existed in the stomach?

Mr. Taylor.—My tests did not give me the slightest reason to suspect that any of those poisons were present. So far as I examined the body, I have not the slightest doubt that deceased died from the effects of poison,—that poison being savin.

By the Coroner.—The ordinary dose of the powdered savin is from five to twenty grains. It has not been precisely determined how much of this poison is required to destroy life, as in those cases where death has resulted from its administration it has been given secretly for the purpose of causing abortion. There was no bile in the fluid found in the stomach. We have several tests for the presence of bile in solutions, one is nitric acid, which produces slowly a green colour; this was used, and produced no change in the clear liquid. When the fluid found in the stomach was mixed with distilled water, and allowed to stand for some time, the green matter entirely subsided to the lower part of the vessel, and the supernatant liquid remained perfectly colourless; this would not have been the case had any bile been present, and the cause of the colour. Savin is often taken by ignorant persons to cause abortion: when it produces abortion it generally destroys the mother, and sometimes kills the woman without causing the expulsion of the child. There were slight traces of the poison in the jejunum, adhering to the valvulæ conniventes. The morbid appearances discovered in the body of deceased coincide with those found in others who have died from the effects of savin. I have no means of knowing how the patient took the poison. The Coroner then inquired of Mr. Taylor whether this

poison could have remained in the stomach since the preceding Saturday, or previously, without producing severe symptoms. Mr. Taylor thought it impossible that an irritant of this kind could remain so long in the stomach without exciting pain and vomiting.

Mr. Charles Johnson.—I reside in Denmark Road, Camberwell. I am lecturer on Botany at Guy's Hospital. I agree with Mr. Taylor with regard to the characters of the green powder procured from the fluid in the stomach of deceased. Upon examining a portion of the powder under the microscope, I was enabled to determine it to be part of the leaf of a plant of the pine genus. It might at first sight have been a portion of a liliaceous plant, to which class the onion, &c. belong. But an examination with a lens of higher power, which revealed the presence of the glandular apparatus of the leaf, proved it to be one of the pine kind. There are only some spicy tropical woods and leaves which have also these glands, but their arrangement is different from that in the juniper and fir tribe. I judge that the green matter was savin, from its strict identity with particles of the powder of savin with which I have compared it. Mr. Johnson handed to the coroner a delineation of two particles of the green matter found in the stomach, magnified, compared with a particle of powdered savin.

FIG. 1.

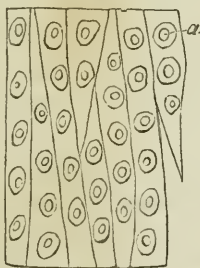


Fig. 1, Coniferous Wood, showing the glandular structure common to all the Coniferae; *a*, the glands.

FIG. 2.

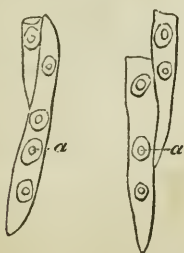


Fig. 2, Woody fibre from particles of savin powder magnified; *aa*, the glands.

FIG. 3.

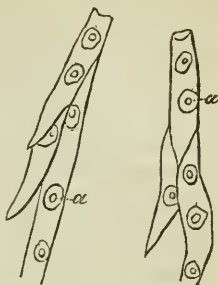


Fig. 3, Woody fibre from particles of savin powder separated from the stomach of the deceased; *aa*, the glands.

FIG. 4.



Fig. 4, Magnified extremity of the leaf of savin, showing the cause of its fibres.

FIG. 5.

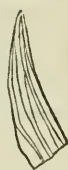


Fig. 5, Similar portion of leaf extracted from the mucous contents of the stomach of the deceased.

FIG. 6.



Fig. 6, Magnified extremity of the leaf of the yew (*Taxus Baccata*) another poisonous coniferous plant. Its fibres are straight, and it terminates in a lancet-shaped extremity, in which respect it differs from the leaf of savin.

The magnifying power here employed was about 200 diameters.

I dried a portion of the powder, and could then perceive that it had the characteristic odour of savin. The odour depends upon the volatile oil of the plant.

Charles Richardson.—I did not mix any medicine for the deceased; did not provide her with water to mix any medicine with. I am not aware that deceased took any medicine not prescribed by Mr. Gower. I do not know that she sent for any medicine while at my house.* Immediately after she came into my house, she took some tea, which she vomited; did not see any thing with the tea; did not see deceased put any thing into the tea. That was on the Thursday. I did not see her vomit again that evening. I understood that deceased intended to remain three months at my house.

* The Richardsons appear to have rented their dwelling of Mrs. Allen.

My wife left home on Friday evening; deceased and I were left in the house together, but in different rooms. I did not go to get any medicine for her. A young married woman was delivered in my house about a twelvemonth ago; she and her child are still well. Never heard the word *savin* mentioned in my house. Did not understand that deceased was taking any medicine when she came to my house. My wife told me that deceased could not keep any thing on her stomach on Friday.

Mrs. Richardson.—I was at Mrs. Matthews's about 20 minutes with the deceased. I did not see the colour of the matter she vomited on Thursday. On the Wednesday night the deceased had been to tea at King's Cross, and did not return until eleven o'clock. She ate a mutton chop at one o'clock on Friday, which remained on her stomach. I do not remember whether she vomited on Friday. Deceased did not speak of having any medicine for jaundice. I do not know any person of the name of Ganes. I was at home only for a short time on Monday: do not know that deceased vomited then.

Maria Matthews.—The deceased was my sister. The deceased came to my house on the 2d of May. She came from her father's house at Rhode, near Frome: she came to town to be confined. She remained at my house five days. Deceased expected to be confined in two months: am not aware of her having any prescription with her except one for the jaundice, (this prescription was afterwards produced; it was not a medical recipe, and merely ordered a decoction of saffron in wine.) She did not speak of taking any medicine for her pregnancy. I have her box; I am not aware that any thing has been removed from the box. I found no powder or medicine there. She was much the same in health when she left my house as when she came.

Some further evidence was adduced, but nothing that threw any additional light upon the medical facts of the case. The inquest was again adjourned until the 25th June, when the jury returned a verdict, "That the deceased, Caroline Hillman, died from the effects of a certain poison called *savin*, but whether taken for the purpose of destroying life or procuring abortion there is not sufficient evidence to show, and that her male infant died a natural death."

Medical Intelligence.

PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION.

THE thirteenth anniversary meeting of this Association took place at Sheffield on the

30th and 31st ult. The meeting was attended by a large number of physicians and general practitioners from the metropolis and all parts of England. We shall probably give an analysis of the proceedings in our next.

OBITUARY.

WE have to record the death of Mr. Thomas Everitt, formerly Lecturer on Chemistry at the Middlesex Hospital, and well known as the author of some able criticisms on the London Pharmacopœia, and by various contributions in chemistry to the scientific periodicals. He had for some time laboured under insanity complicated with paralysis, and died in a lunatic asylum from the effects of a severe scald received on the 26th July.

UNIVERSITY OF LONDON.

BACHELOR OF MEDICINE. FIRST EXAMINATION. PASS EXAMINATION.—1845.

Monday, August 4.—Morning, 10 to 1.

Anatomy and Physiology.

Examiners, Mr. KIERNAN and Professor SHARPEY.

1. The bones of the face and the ethmoid being removed, describe that portion of the basis of the Cranium included between the superciliary ridges of the frontal bone in front, a line extending between the mastoid processes, and in front of the condyles of the occipital bone, behind, and laterally between lines drawn from the external orbital processes of the frontal to the mastoid processes. First mention the bones, and those portions of them which enter into the formation of the part to be described; then commence the description at the superciliary ridges, and describe the surfaces, sutures, processes and foramina, in the order in which they are met with, mentioning the muscles when describing the parts to which they are attached. What is the mode of development of the frontal and occipital bones, and in what condition are these bones at birth?

2. Commencing at the integuments, give an account of the parts successively exposed in the dissection required to display the structures entering into the formation of the Inguinal and Femoral canals: the answer to include a description of the appearances seen on the inside after removing the peritoneum, with an account of the spermatic cord, and of any varieties in the origin and course of the obturator artery which relate to the subject of the question.

3. Describe the steps of the dissection required to display,—1st, the course of the radial artery, from its origin to the point at which it disappears between the metacarpal bones of the thumb and fore-finger, and of the branches given off in this part of its

course; 2d, the course of the posterior tibial artery, from its origin to its division into the plantar arteries, and of its branches, as far as they can be seen on the back of the leg. The parts are to be described in the order in which they are met with, and all the relations of the vessels are to be mentioned.

4. Give an account of the diaphragm and of its uses, mentioning the muscles which act in concert with it. Describe the origin, course and distribution of its vessels and nerves.

5. Describe the cartilages of the larynx, and their mode of connexion with each other.

Afternoon, 3 to 6.

1. Give an account of the joints formed by the radius and ulna with other bones, and with each other; the answer to include a description of the articular surfaces of the several bones, and of the cartilages, synovial membranes and ligaments. Describe the movements which take place in these joints, mentioning the muscles by which they are effected, and the classes of joints to which they belong. In what respects do the movements which take place in these joints differ from those which take place in the corresponding joints of the leg?

2. Describe the parts met with in dissecting a portion of the posterior region of the trunk, included within three lines corresponding to the borders of the latissimus dorsi muscle; the dissection to be carried down to the vertebrae and quadratus lumborum.

3. Give the dissection required to expose the subscapular artery and its branches, describing the parts met with in the dissection as far as they are necessarily brought into view.

4. Give the anatomy of the prostate gland, describing its form, size, situation, connexions and structure, with the part of the urethra which passes through it.

5. Describe the position and structure of the heart and pericardium. Give a brief account of the passage of the blood through the cavities of the heart, and of its entrance into the aorta and pulmonary artery; and of the contractions, impulse and sounds of the organ.

6. Give an account of the structure, physical properties and chemical composition of cartilage and fibro-cartilage, distinguishing their several varieties.

Tuesday, August 5.—Afternoon, 3 to 6.

Materia Medica and Pharmacy.

Examiner, Dr. PEREIRA.

1. Enumerate the most important officinal diuretics, and explain their respective pe-

culiarities of operation. State your opinion, and the reasons on which it is founded, of the propriety of administering diuretics in renal dropsy with albuminous urine. In the use of saline diuretics, what circumstance, appertaining to the density of their solutions, has Liebig suggested the practical importance of attending to?

2. Describe the process of the London Pharmacopœia for making *pulvis antimonii compositus*; and explain the chemical changes attending it. State what are the ordinary constituents of this substance, and how the presence of sesquioxide of antimony in it is to be detected.

3. Give a botanical description of *Valeriana officinalis*; and mention the active principle of, and the mode of extracting it from, the root of this plant.

4. How can the presence of chloride of potassium in chlorate of potash be detected? State how you would proceed to determine the presence of subacetate of lead in the sugar of lead of the shops?

5. Describe the effects, uses, mode of exhibition and dose of Senega root.

6. What are the effects of an overdose of opium, and what is the most appropriate method of treatment in poisoning by this substance?

BACHELOR OF MEDICINE. FIRST EXAMINATION.—1845.

Tuesday, August 5.—Morning, 10 to 1.

Chemistry.

Examiner, W. T. BRANDE, Esq.

1. State the theory of *latent heat*, and illustrate it by the details of BLACK'S experiments on the freezing of water and thawing of ice; and on the formation and condensation of steam. Explain the meaning of the term *specific heat*, and describe the modes of determining the "capacities of bodies for heat."

2. Describe the action of the common *electrical machine*, and the theory of the reception and retention of the charge by the respective conductors.

3. Explain the formation of a *simple* and of a *compound* VOLTAIC circuit—the theory of their action; and the phenomena of the electro-chemical decomposition of water, and of solutions of sulphate of soda and sulphate of copper.

4. What is meant by the terms "atomic weights," and "equivalents" of bodies? How are atomic weights determined? What are the arguments for and against the adoption of *whole numbers* as representing *chemical equivalents*; and what are the equivalents upon the *hydrogen scale*, and what the respective specific gravities (air=1) of the following gases and vapours:—oxygen, ni-

trogen, chlorine, iodine, carbonic oxide, carbonic acid, sulphurous acid, cyanogen, ammonia?

5. What is *ammonia*? What relations does it bear to the theory of *ammonium* and of *amidogen*? What are the accepted proofs of the two last-mentioned compounds? What are the ultimate elements of *sulphate of ammonia*, and how may its proximate constitution be represented in reference to the different theories?

6. Represent in symbols the ultimate and the proximate composition of *ferrocyanide of potassium*, and of the precipitates which it occasions in solutions of the oxides of silver and lead, and of peroxide of iron.

7. What are the principal elements of organic bodies? How may they be qualitatively and quantitatively determined?

8. What are the ultimate constituents of the common varieties of coal? What are the principal products of their destructive distillation as carried on for the production of *coal-gas*? and how are those products separated?

9. What is *protein*? What are the principal organic products which afford it; and with what elementary substance is it usually associated?

10. Draw a comparison between the chemical physiology of vegetables and that of animals.

The bottles marked A, B, and C, contain certain saline solutions—they are accompanied by appropriate *tests* by which the nature of their respective *bases* and *acids* may be recognised—you are requested to name these, and to write their respective symbols and equivalents.

Afternoon, 3 to 6.

Botany.

Examiner, Rev. Prof. HENSLOW.

1. Define, and name examples (where the case admits), illustrating the following terms:—*Capitulum*—*Tetradynamus*—*Petiolus*—*Lodicula*—*Stoma*—*Atropis*—*Serratus*.

2. Mention the chief characteristics of the following orders:—*Boraginæ*—*Leguminosæ*—*Aroideæ*.

3. Give the more important characters in the following genera:—*Valeriana*—*Samolus*—*Caucalis*—*Scirpus*.

N.B. In this question you are required to describe precisely the characters of the several floral whorls, those of the fruit and seed; and to state the peculiarities of *Æstivation*, *Vernation*, and *Foliation*.

Proceedings of Societies.

ACADEMY OF SCIENCES, PARIS.

June 9, 1845.

On a New Apparatus for Making Ice. Presented by M. VILLENEUVE.

A COMMITTEE, consisting of MM. Pouillet, Francœur, and Babinet, were ordered to make a report on M. Villeneuve's new freezing apparatus. It was alleged by the inventor that by means of this machine several pounds of pure and hard ice might be speedily produced at all seasons, and in any locality. The articles employed are cheap and easily procured: and while by this process ice is formed from water, artificial mixtures, such as cream or other ices, may be simultaneously procured.

The substances employed by M. Villeneuve are sulphate of soda and muriatic acid, not in a concentrated state. By a freezing mixture of this description, the inventor could produce in about an hour, at an expense of two francs, from six to eight pounds of ice. There is no novelty in the principle of producing cold by a mixture of the acid and salt; but the value of the apparatus depends on its infallibly succeeding, at all temperatures, in converting water into ice. The machine consists of a hollow cylinder, surrounded by another hollow cylinder, which holds the water to be frozen during the process. Another vessel, closed at the bottom, is placed in the centre of the freezing mixture, and is kept in a rapid circular motion by means of a winch. If this vessel be filled with water, the water is frozen as well as that which is contained in the outer case; and two cylinders of ice, one hollow and the other solid, are thus procured, the whole quantity weighing about eight pounds. In the making of cream ices, the mixture is placed in the inner vessel.

The apparatus was put in action several times before the Committee at temperatures varying from 60° to 68°, and always with success; the ice was hard, and in large quantity, and the cost of production was at the rate of about threepence or fourpence a pound. The price is lower when each charge of the freezing mixture is allowed to have its full effect. Each operation, as it was just now stated, yields from six to eight pounds, and requires about an hour for its completion. The acid and salt are to be had at a low rate, *i. e.* about 20 francs the 100 kilogrammes (about 10 francs for the 100 lbs.)

It is unnecessary to describe the therapeutic and hygienic uses of ice: in a scientific view, its production at any time and in any place will be attended with considerable benefit. The utility of such an apparatus

in localities where ice cannot be otherwise procured, must also be apparent. It supplies all that is wanted in this respect: the chemical compounds employed are not such as to render their sale and distribution among inexperienced persons dangerous (?). M. V. has brought forward his apparatus rather for economical or domestic use than for any scientific purpose. The Committee recommended that the Academy should bestow on it its approval, not merely for the freezing of water, but for the preparation of ices. The Committee adopted the Report.—*Comptes Rendus*, Juin 9, 1845.

[REMARKS.—An apparatus of this description which we have seen in operation has been for some time patented in London, and has excited some curiosity from the announcement that ice might be produced in a few minutes at a very small expense. As the Committee report, there is nothing new in M. Villeneuve's refrigerating materials. This cooling power possessed by a solution of sulphate of soda in hydrochloric acid (owing to the rapid liquefaction of the large quantity of combined water which it contains) has been long known, and applied to various experimental purposes. We doubt whether ice can be so cheaply made by this process as the inventor represents; and we must dissent from the opinion that hydrochloric acid can be sold and distributed among inexperienced persons without danger. On the contrary, we think this would be a powerful objection to its ordinary use. The English patentee, therefore, has abandoned these materials, and employs a mixture of rough ice and bay salt, closely packed between the two cylinders, but still so loosely as to allow the inner vessel to acquire a rapid rotatory motion. This, of course, is constantly bringing a fresh surface of the liquid to be frozen, in contact with the freezing mixture, which produces a cold nearly equal to zero. In this way, a hollow cylinder of ice of considerable size was produced in about ten minutes. The quantity of ice thus procured is somewhat less than that consumed in the process, but still sufficient for another charge. The ingenuity of the invention consists, therefore, in the employment of a well-constructed refrigerator, which reproduces a quantity of the material actually employed. Of its alleged cheapness we are unable to speak.—*Ed. Gaz.*]

Correspondence.

ON THE CONSTITUTION OF OZONE.

To the Editor of the Medical Gazette.

SIR,—In the last number of your journal I see a quotation from the Athenæum, in which

Ozone is considered as in all probability a *tritoxide* of hydrogen. A short time since I was in company with Professor Schönbein, when I questioned him particularly as to the correctness of this statement. He informed me that, in his opinion, Ozone was probably a *binoxide of hydrogen*, and isomeric with Thénard's oxygenated water.

Another error occurs in the Athenæum, in the description of Professor Graham's paper on the Diffusion and Effusion of Gases. His well-known law is, that the diffusive power is *inversely as the square root* of the densities of the gases, not directly as the square, as stated in the journal referred to.

Fearing you might overlook this in your report, I have taken the liberty of pointing it out.—Truly yours,

J. W. GRIFFITH, M.D.

July 31, 1845.

Selections from Journals.

AURAL SURGERY.

UPON POLYPUS OF THE EAR.

BY M. BONNAFONT.

As the subject of aural pathology is only beginning to attract that attention which its importance deserves, we present our readers with the following abstract of an interesting memoir upon polypus of the ear, communicated a short time since to the Academy of Medicine, Paris, by M. Bonnafont.

The author discusses, 1st. The seat and character of these morbid products. 2dly. The symptoms which accompany them, and the bad effects to which they may give rise. 3dly. The treatment which they require.

1st. Their characters vary; they may be hard, resisting, and irregular, or smooth, yielding, and elastic; painful or insensible. In considering this latter symptom, however, it is important to distinguish between the sensibility of the polypus itself and that occasioned by its pressure upon the surrounding parts.

Polypi may have their origin in any part of the auditory tube, or upon the membrana tympani; and, contrary to the opinion generally entertained, M. Bonnafont believes that they are met with more frequently upon, and in the neighbourhood of the membrana tympani than elsewhere. They assume a variety of shapes; they may be rounded or oval, flattened or elongated, and attached by a pedicle which may be long or short; but after the attainment of a certain size, their form becomes similar in all cases, owing to the pressure of the parietes of the tube, which compels the excrescence to extend either outwards or inwards upon the membrana tympani.

When the polypus springs from some

point in the outer two-thirds of the meatus, and its direction is outwards, the symptoms are simply those arising from more or less obstruction of the canal; such as a sense of fulness in that part of the ear, and some degree of deafness; a constantly purulent discharge, the nature and abundance of which will vary according to the state of the tube; pain is rarely felt except when the polypus is large, and then it is much increased by mastication.

If the polypus increase in the opposite direction, so soon as it comes in contact with the *membrana tympani* the patient begins to experience a vague pain, especially in the throat, about the orifice of the Eustachian tube. The excrescence continuing to extend inwards, very acute pain is commonly felt in the interior of the ear, and it is augmented by yawning, coughing, mastication, and especially by deglutition. Although it is not usual for the patient to complain much of pain in the head,—vertigo, a sense of dazzling, and sometimes vomiting, are not uncommon symptoms. During the period of acute suffering, the gait is staggering, like that of a person in an early stage of intoxication. All these symptoms suddenly disappear on a discharge of blood taking place from the polypus. It might be supposed, that as the cause is permanent, so the effects would be constant; but, whether from the gradual yielding of the parts upon which pressure is made, or the influence of habit, this is not always the case; and some degree of deafness may be the only symptom of the existence of a polypus. Its pressure may occasion adhesion between the *membrana tympani* and the inner wall of that cavity, anchylosis of the malleus and incus, &c. At other times, instead of yielding to the pressure which the polypus exerts upon it, the membrane bursts, and allows the entrance into the tympanum of a portion of the excrescence, which there increases in size so far as the capacity of the chambers will admit.

The existence of a polypus may be detected by a careful examination of the auditory tube. If it originate upon or near the *membrana tympani*, pressure upon it will occasion acute pain, sometimes vertigo, and lachrymation of the corresponding eye. On the other hand, in proportion to its distance from the tympanum, pressure will occasion but slight local pain.

Polypi arising from the *membrana tympani* have generally a larger base than others; they are also usually flattened, of a mushroom shape, and granulated upon the surface. This latter character, when they have not attained a large size, may render them difficult of detection, as they present considerable resemblance to the membrane in an ulcerated condition. The ability, however,

to impart a slight rotatory motion by means of a fine probe, will serve to decide their nature. The prognosis will depend upon the degree of change in the tissues on which the polypi grow; upon their point of insertion; their peculiar organization; the size of the pedicle; and the amount of disorder which they may have occasioned in the auditory apparatus.

1st. The polypus being a morbid product, developed in a tissue itself altered, it will be understood that the prognosis will vary with the cause of this alteration and the constitution of the individual.

3d. The case has a more unfavourable aspect when the polypus arises upon or near the *membrana tympani*.

3d. Considered separately, soft and spongy polypi are less serious than those of a firmer tissue; the first easily yielding to any resistance, whilst those of the second class, by their pressure, may occasion severe suffering. But viewed with reference to their cause, spongy and bleeding polypi have a more grave character, indicating, according to the observations of Sturd, a cachectic state of the constitution.

4th. The larger the base of a polypus, the more difficult is its removal, and the more probable its return. If a polypus with a large base originate upon the *membrana tympani*, it almost always occasions the destruction of the membrane, and sometimes the loss of the chain of bones.

5th. Still more serious results may be produced by the excrescences. If so large as to compress the walls of the tube, they may give rise to ulceration of the mucous and subjacent tissues, exposure and caries of the bone. If the discharge of the secretion be prevented, it will accumulate in the tympanum, and seek an exit by the Eustachian tube or the mastoid cells; thus producing inflammation and suppuration in the latter situation. The inflammation may extend to the parts in the neighbourhood of the ear; the parotid may be implicated, and by compressing the nerves which traverse it, occasion excruciating pain in the side of the face, paralysis of the facial nerve, &c. Conjoined with these painful symptoms, there may be vomiting so obstinate that even the simplest food is rejected.

In addition to these sufferings and dangers, the pent-up secretions may penetrate into the internal ear, and inflammation may be propagated from this part to the brain or its membranes. Under these circumstances, the disease may prove quickly fatal, if relief be not afforded by the extirpation of the polypus, or by dilatation and catheterism of the Eustachian tube.

Treatment.—As soon as the existence of the polypus has been ascertained, some operative procedure should be determined

upon. The surgeon may choose removal by avulsion, the ligature, cauterisation, or the knife.

When the polypus has a narrow pedicle, and is inserted into the walls of the tube, no matter at what depth, avulsion may be employed with advantage; but to avoid the inconveniences attending powerful traction, when the pedicle is resisting, it is advisable to combine traction and torsion. This method is less painful, and less likely to occasion hæmorrhage, than avulsion. If the polypus arise from the membrana tympani, this procedure will be obviously inapplicable in the majority of cases. After the removal of the polypus, the bleeding may be allowed to continue for ten or twelve minutes, and after syringing out the canal, the remains of the pedicle should be touched with the nitrate of silver;—this cauterisation may be repeated in a few days, if the first has not proved effectual.

The ligature is useful in the same class of cases as the preceding mode of treatment, but it has the advantage of being applicable to polypi arising from the membrana tympani. It is requisite, however, for its successful employment, that the polypus be small, or the canula containing the ligature cannot be introduced. The peculiarity of the instruments recommended by M. Bonnafont consists in their being exceedingly delicate.

Cauterisation is almost useless in bringing about the removal of large polypi, but it is very serviceable in destroying that portion of the pedicle which the other methods have failed to remove, and also in opposing the reproduction. The most useful caustic is the nitrate of silver.

M. Bonnafont resorts exclusively to excision, or the ligature, for all polypi springing from the membrana tympani, and, wherever it is possible, he prefers the former.—*Bulletin de l'Académie*, 1845.

PATHOLOGY.

FATAL CASE OF EPISTAXIS, VICARIOUS OF MENSTRUATION.

THE following fatal case of epistaxis is related by Dr. Fricker; it occurred in a servant girl, aged 19, of slight make, fair complexion, light hair, and blue eyes. Towards the period of puberty this girl suffered from great weakness, with palpitation, shortness of breath, and faintness after the slightest exertion, so that she was obliged to leave service. In place of the catamenial discharge, which never appeared, she became attacked with most profuse epistaxis, which was with difficulty arrested. On the subsidence of this attack she felt considerably better, the faintness, palpitations, and other unpleasant symptoms disappeared, and she

returned to service; but shortly afterwards all the above symptoms returned, and were succeeded by another attack of epistaxis as profuse as the first. All the signs of anæmia now manifested themselves, and she required constant stimulants to keep up her strength. The epistaxis returned four successive times, after intervals of about six weeks between each attack. The signs of dropsy now made their appearance, succeeded by paralysis of one side of the body, loss of voice, and difficulty of deglutition; this state of utter exhaustion was speedily followed by death.—*Schmidt's Jahrbücher*, Heft 1, 1845.

DEEP VIOLET COLOUR OF THE URINE FOLLOWING THE EMPLOYMENT OF LIME-WATER.

DR. VELSEU relates the case of an old man affected with chronic inflammation of the bladder, who made use of lime-water mixed with milk, upon which his urine became turbid, highly foetid, and of a deep violet colour, staining the utensil into which it was passed. Upon suspending the use of the lime-water for a single day, the urine lost its peculiar violet tint. The chemical analysis of the urine was not undertaken.—*Heller's Archiv*. Heft. 1, 1844.

MICROSCOPICAL PATHOLOGY.

CONTENTS OF A STRUMOUS CYST.

UPON opening the cyst there escaped from it a thin fluid of a reddish colour, resembling water in which raw meat has been washed. After standing for a few hours, a sediment formed in this fluid, which itself was thereby left of a clear deep yellow colour. Upon examining this sediment beneath the microscope, there were observed (a) numerous blood [?] corpuscles, which had a granulated appearance, and which dissolved, though not very readily, in water, each leaving behind from three to four separate, tolerably well developed nuclei; (b) several dark globules of larger size from $\frac{1}{80}$ to $\frac{1}{100}$ of a line in diameter, which were seemingly made up of from twenty to thirty granules agglutinated together; (c) also a few beautifully-formed crystals of cholesterine. Upon analysis, 1000 parts of these contents gave of

Water . . .	920·96
Solid matter . .	79·24

1000·00

The solid matters were composed of

Albumen, with blood . .	61·23
Extractive matter . . .	8·71
Fat (chiefly cholesterine) .	1·80
Salts	7·50

79·24

—*Scherer's Untersuchungen*.

MIDWIFERY.

ABORTION CONSEQUENT ON THE USE OF MERCURY.

DR. SALOMON relates two cases in which premature delivery resulted apparently from the employment of mercury. The first was that of a healthy married woman, who, during her first pregnancy, had been treated with the internal and external use of mercury, on account of some syphilitic affection, and who was in the sixth month delivered of an emaciated child. The placenta was very small and shrivelled, weighing about two ounces; the cord was very narrow, but of considerable length. On account of profuse hæmorrhage, the attendance of Dr. Salomon was required. The woman remained weak and poorly for a considerable time, but she entirely recovered, and about three years subsequently, was delivered of a fine healthy child.

In the second case, a healthy farmer's wife, mother of four children, and who was again pregnant, had brought on a profuse salivation by rubbing in for a considerable time the Ung. Hyd. Nitr. Oxyd. as a cure for the itch, which she had contracted. About the end of the fifth month of pregnancy she was delivered of a fœtus in a state of incipient putrefaction. Very profuse hæmorrhage attended the confinement, and the woman was greatly exhausted. The salivation defied all treatment, and it was more than ten weeks before it disappeared.—*Casper's Wochen-schrift*, 21 Juni, 1845.

DIAGNOSIS.

ABNORMAL MURMUR IN CASES OF PHTHISIS.

"I MUST here find a place for noting a certain auscultatory phenomenon, which, though it may not have struck the general observation, is frequent and familiar to my own, and has gained an importance in my eyes from the pathological conditions with which I have found it associated. To the ear it claims kindred with endocardial murmurs. But although the heart may be instrumental in producing it, it is not at all perceived within the præcordial region, but in a certain definite and circumscribed space beyond it.

Fancy a line drawn from the left side of the sternum along the upper edge of the second costal cartilage, and continued an inch along the second rib; and another line drawn from the sternum along the lower edge of the third costal cartilage, and continued an inch along the third rib. Between these two lines a space is included, in the whole or in part of which a murmur is often audible coincident with the systole of the heart, when no such murmur can be perceived either in the præcordial region, or in the course of the aorta, or in the carotids,

or in any part of the arterial system, but here, and here only. It is a gentle bellows-murmur, quite obvious to the ear, and unmistakable in its character. Of such a murmur, often audible in this situation exclusively, I am certain as a matter of fact, and certain too of its very remarkable accompaniments. I have witnessed it either in those who were undeniably consumptive, or in those who were too justly suspected of being so. I cannot say in what proportion of the phthisical it occurs, but I am continually meeting it."—*Dr. Latham's Clinical Medicine*.

[REMARKS.—Dr. Latham has gained no explanation of this sound by dissection; he has only a clinical experience of the matter. But where, from his direct examination of the lungs, he cannot get beyond a suspicion of tubercular disease, the murmur in the space indicated, always contributes to confirm it. Dr. Latham does not mention whether this sound continues while the patient's breathing is suspended; and from the account given it is uncertain whether it be cardiac or pulmonary.—ED. GAZ.]

ROYAL OBSERVATORY, GREENWICH.

METEOROLOGICAL SUMMARY

For the week ending Saturday, July 26.

	Max.	Min.	Mean.
Height of Barometer ^a	29.82	29.79	29.8
" " Thermometer ..	72.3	52.7	60.5
Self-registering do.	106.5 ^b	44	
" in the Thames water	64.8	63.5	

^a From 12 observations daily.

^b Sun.

RAIN, in inches, 0.52; sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was nearly 9° above that of the climate of London for the year, but 2.6° below the mean summer temperature. The extreme range in thermometer was 62.5°.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, July 26.

BIRTHS.	DEATHS.	Aver. of 5 yrs.
Males... 653	Males... 434	Males... 491
Females. 579	Females. 439	Females. 472
1232	873	963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129. Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	122
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	162
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	185
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	193
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	211
Total	873

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURES,

Delivered at University College Hospital,

By DR. C. J. B. WILLIAMS, F.R.S. &c.

[Taken in Short-Hand by our own Reporter, and revised by the Professor himself.]

LECTURE II.—May 15th, 1845.

Albuminuria, even with structural disease, not always fatal; case cured for five years, with relapse and subsequent relief.—Albuminuria during pleuro-pneumonia; recovery.—Albuminuria, with hysterical symptoms in a man; recovery.—Albuminuria, with supposed renal calculus.—Albuminuria, with dropsy; recovery.—Albuminuria, with morbus cordis.—Albuminuria, with diseased uterus.—Albuminuria, after scarlatina? connection of the two diseases; recovery.

IN my last clinical lecture I had to notice no less than five cases of albuminuria in which the event was fatal. This might lead you to imagine, what is a very prevalent supposition, that albuminuria is a very mortal disease. No doubt, it is a most serious affection;—serious not only as occurring as a separate disease, but also as becoming superadded to other structural diseases. This we found to be particularly the case with regard to the female Acors, whose history and general symptoms showed an aggravated form of heart disease, to which probably the disease of the kidneys became superadded.

There are, however, a great number of cases in which albuminuria is not necessarily fatal—on the contrary, it often does occur, either as a distinct disease, or as a concomitant of other affections, without leading to a fatal termination. Some of the cases to which I have to allude to-day illustrate this point.

If we come to inquire into the matter, and compare this with what occurs with regard to other diseases, we shall find that albuminuria shares a character in common with other very serious affections. It is a great mistake—a mistake very prevalent—to suppose that the diseases which are commonly described as fatal are universally so. It is the rule, for instance, for *phthisis* to prove fatal, but there are a vast number of exceptions to that rule. The great reason why *phthisis* proves fatal is, that the lesions which characterize it occur in so extensive a form, and as I have several times laid it down both in published writings and before you, that disease, and many other structural affections, prove fatal rather by their de-

gree than by their kind. It is exactly the same thing with albuminuria. There are degrees and forms of albuminuria which are far from being fatal, which are not inconsistent with a considerable amount of health, a considerable duration of life; and when I say albuminuria, I mean, not a temporary condition produced by congestion, but albuminuria connected with some amount of structural disease. So also you have heard me again and again say with regard to *heart disease*, that a slight degree of it is not incompatible with pretty good health and a long life; and that even where it tends to increase, it may attain to an enormous extent, without proving fatal, its great amount being due mainly to the slowness of its progress. Provided these diseases gain ground only slowly, they may attain a wonderful extent without destroying life. It is the sudden attacks, and those in which the progress is very rapid, that prove so specially detrimental to the functions.

A propos to the subject of *phthisis*, in illustration of this point:—A gentleman came to me this morning, who two years ago was to all appearance in the last stage; I did not think that he could live a month. There were signs of a considerable cavity in one lung, and of disease in the other. He had formerly had hæmoptysis, and latterly purulent expectoration, emaciation progressively advancing, and a cough of some twelve months' duration at that time. He had been under my eye during that period, and before he became worse there had been some considerable improvement: when two years ago, there was a sudden return of all bad symptoms, originating in inflammation excited by cold, and in a few weeks he was apparently brought into the last stage. He was anxious to go out of town; I could scarcely have urged such a measure, so little hope had I of his amendment, but I consented to it, and he was taken to the Undercliff of the Isle of Wight. He had not been there more than two or three weeks before he rapidly improved, and to all outward appearance he progressively recovered, never losing, however, the physical signs of disease in the chest. He is now in tolerable health, his breathing is very good, and he can walk a distance of five or six miles without difficulty. On examining the chest, I found a vast diminution of the physical signs of disease. The dulness on percussion which extended over the greater part of the right lung is much diminished, but there are the remains of a cavity, and some remnant of dulness on the other side. Such a case does occur every now and then, but one must look upon it as an exception to the rule.

I have likewise seen several strange cases which tell the same tale with regard to al-

uminuria; and the first to which I will draw your attention will somewhat exemplify this. It is that of a man named William Fuller, æt. 56, which occurred in the winter; he was admitted Nov. 6th; but as it is an illustration, I take the liberty of going back. Time will not allow me to read the case, but I will mention some of the particulars. He was under my care five years ago, for dropsy with albuminuria, having had an attack of dropsy, it was said, some years before, which had subsided; and he had been comparatively well up to the time when he was again attacked. When he first came under my care in the hospital, he laboured under dropsy in the most aggravated form; there was not only ascites and œdema of the scrotum to an excessive degree, but general anasarca, which had reached to such an extent in the legs as to cause inflammation threatening gangrene of the cellular texture of the leg. He was in a very extreme state; it did not appear at all probable at that time that he would have recovered; the urine was strongly albuminous, and continued to be so. However, under the treatment I shall presently mention, he did gradually recover, and after being in the hospital about three months, he left it free from dropsy, his strength and flesh in a great degree restored, and what is very important, the urine had lost its albuminous impregnation. I did not consider that the urine was healthy; it was of a lower specific gravity than usual, but for a person who had albuminuria to that extent, it might be considered very healthy urine. This man continued free from the disease for two years. He had a slight attack at the beginning of the second following winter, for which he showed himself once at the hospital, but he did not come into the house; he took some medicine, and soon got well again. But in November of the last year, 1844, he was admitted with general dropsy, the urine highly albuminous, and he continued under treatment from November 6th till March 12th. Many of you had the opportunity of seeing the character of the dropsy in that case; it was very obstinate, and long resisted the treatment by hydragogue purgatives, blisters to the loins, and diuretics, but at last yielded. As he was losing the dropsy, he had an attack of subacute pleuritis, which required a course of blistering on the right side, and for which he was under treatment for six weeks. While under treatment for this disease all the signs of dropsy disappeared, and although the urine never lost the albumen entirely, yet it became less albuminous, and more healthy in its character. The pleuritis was subdued though the effusion was not entirely removed: he became comparatively convalescent; and being tired of staying in the hospital, and as it did not

appear that he was deriving further advantage, he was dismissed relieved on the 12th of March.

This case exhibits the features of that sort of progress which such lesions present to us, when we have an opportunity of watching them for successive years. Of the first severe attack of albuminuria terminating with dropsy, he was apparently cured, and resumed his ordinary pursuits, and a tolerable share of health; but I do not believe that his kidneys were restored to a state of integrity, there was a little disease left in them, enough to lay the foundation for his future attacks. We had the opportunity of seeing him in these future attacks, and of observing how the disease had become aggravated. He had neglected to apply for treatment until some time after the symptoms recurred, and when we saw him upon his last admission he had been battling with the disease, treating himself, and trying to put off the necessity of giving up his work, for a considerable time before he was admitted, so that the second attack had not only the disadvantage of being a second attack, but the aggravation of it was increased by its prolongation. Here, again, more than I expected, we improved his condition, got rid of the dropsy, restored the function of the kidneys in a great degree, cured the subacute pleuritis from which he suffered, and which was a severe attack, and sent him out in a state of comparative convalescence, but more imperfect than before, inasmuch as his urine still remained albuminous, and he had not recovered the same amount of flesh and strength as he had after the former attack. Although, if very careful, he may get through the summer tolerably well, and may be able to do a little work, yet it will be only a little, and sooner or later he will fall a victim to the disease, increasing either gradually or by sudden fresh attacks. [This patient was readmitted for general dropsy with albuminuria, on the 19th of June.]

There are other cases which illustrate some other phases in which albuminuria may occur under a more transient form. Here is the case of Alfred Bignold, æt. 25, admitted for pneumonia on the 28th January, and discharged cured on the 14th of February. He had been exposed to the weather after he had been drinking to excess. This is a circumstance I have several times pointed out as peculiarly trying to the function of the kidneys — exposure to cold after the kidneys have been exhausted by the excitement of alcoholic drinks. He complained of pain in the right side, and had a regular attack of pleuro-pneumonia. But we find it recorded on the 29th, "urine scanty and turbid, specific gravity 1017, and contains a great deal of albumen." This gra-

dually diminished afterwards. On the 30th the report is, that he was better in many respects; the specific gravity of the urine was 1020; there was a considerable deposit of lithates; it contained much less albumen, only one-third as much as yesterday. This shows a return to more of the ordinary condition of the urine. On the 31st the specific gravity was 1021, increased therefore in proper urinous matter, and contained very little albumen. February 1st, it contained little albumen. February 4th, no albumen; specific gravity, 1022. Thus, as we watched the case from the first, there was a progressive diminution of the quantity of albumen, an increase in the specific gravity, and with it an augmentation of the lithic deposit usual after inflammation. He recovered after that without a check. This appears to be a case of quite temporary albuminuria, and to have occurred from the same cause as that which produced the inflammation in the chest, and such a cause as is known frequently to produce acute albuminuria.

The next case is that of Thomas Dewey, æt. 24. I take them in the order in which they have occurred. He was admitted March 5th, and discharged cured March 20th. This case presents some peculiar features, but I do not know that it is necessary to read it in full. He was a gentleman's servant, and was obviously a nervous subject. He had been subjected to rheumatism before, and was attacked by his present illness after a voyage from Scotland to the South of England. On the voyage he was exposed to a great deal of rough weather, and was, clearly, much frightened, though he was slow to admit it. He was likewise much exposed to cold, and for many days felt extremely chilly, as if he had taken cold. There was such a beating of the heart that one medical man supposed he was labouring under organic disease of that organ. He also spat blood, and he said that he had been pronounced to be in a consumption, though his frame did not indicate anything like a consumptive tendency. In addition to this he had a great number of nervous symptoms; he had been subject to fits of laughing, crying, and a choking feeling in the throat; indeed, all the symptoms that are commonly represented as descriptive of attacks of hysteria. He had been liable to a partial loss of consciousness, and no doubt laboured under the same condition of the nervous system as that commonly exhibited in the female sex, but not confined to them, and which is denominated hysteria. It was found on examination, however, that his urine contained a little albumen; thus amongst other effects which the chill had produced it had caused that disorder of the functions of the kidneys. I think this may be taken as a reason why he suffered for a

longer period than he would otherwise have done. If it had been a mere chill it would have passed off as a cold usually does, and he would have felt nothing more: but he continued ill some time, yet we could not find signs of any disease properly called inflammation. But there were some signs of internal congestion of the organs, and one of the kidneys had some tenderness in it. He was treated by purgatives, and a blister to the loins, and speedily recovered, the urine becoming quite natural.

Robert Whitley, æt. 29, admitted March 11th, dismissed cured March 26th. This case presented albuminuria under another form, and from another cause. He had been subject for eight or ten years to attacks of nephralgia, accompanied by hæmaturia, discharge of blood in the urine, and many other symptoms, for the particulars of which I refer you to the report. This led me to conclude that most probably there was either a calculus in the kidney, or some permanent structural disease leading to the obstruction of the circulation through the kidney, and occasioning a discharge of blood into the urinary passages. When he came under our observation he had lately had several severe attacks of nephralgia, but no blood in the urine; that secretion, however, was found to be albuminous, and remained so, I think, even when he was dismissed, although he was in apparent health.

The treatment in this case was calculated to remove the congestion of the kidney, and, under the supposition that there was a calculus, medicines which diminish lithic deposit, and which render the urine less irritating, were resorted to, together with cupping on the loins. Under that treatment he entirely recovered from all feelings of pain and tenderness of the abdomen; and though the urine continued albuminous, yet I should regard this case as more favourable than any other where albumen continued in the urine. and for this reason: the albuminuria appears to have arisen from a mere local cause—some obstruction in the kidney, from the impaction of a calculus, or the formation of a small growth or tumor, obviously something of a simple kind—for he had no appearance of cachectic disease. Inasmuch as it is connected with local disease, and does not arise from a disposition to a deterioration of the whole constitution, there is more chance of his being perfectly cured. If it is a calculus, it may be gradually dissolved away, or it may pass down the ureter, and bring a certain amount of danger from that circumstance; or it may become encysted; lymph being thrown out, the kidney may not suffer more from irritation afterwards: or there may be a tumor, that tumor being of a simple kind, and it may cease to grow. At any rate, his present appearance of good

health, and freedom from active symptoms, leads me to expect a favourable issue of the case. It is right to mention this as another mode in which the urine may become albuminous, and may continue so.

The next case is that of Martin Drummond, æt. 40, which is a common case of albuminuria; therefore I had better read it. He was admitted March 13, and dismissed cured on April 1st. "Of moderate stature; rather pale complexion; by occupation a fruit-seller. Has had enough food and clothing; admits that he gets tipsy once in three weeks or a month. In London fourteen years. Health generally good. No illness since childhood.

"Present illness began last Sunday week (2d March). After being in a very warm room, 'taking his tea,' he went out into the cold air, and was seized with a feeling of a load and hardness in the stomach, with oppression of the breathing. Says he was not out more than five minutes, and ran the whole time. The feeling of weight and chill continued the whole night. Next day he felt nausea and pain in the forehead, which symptoms increased, with great weakness, on Wednesday, when his legs, thighs, and face, began to swell, and he was too ill to go out. On Saturday he consulted a chemist, who gave him medicines which opened the bowels, and caused vomiting and a feeling of great heat, but no perspiration. The headache and nausea were relieved, but the dropsical swellings increased, and have continued until the day of admission, when that of the face was diminished after taking strong purgative medicine. Has had no pain in the loins or abdomen, and has not observed the state of the urine.

"On admission there were no rigors or increased heat. Surface pallid; legs, feet, and walls of abdomen, œdematous; face and neck not so. Has had no soreness of throat; appetite bad; no thirst or nausea; urine scanty and albuminous; pulse full and rather sharp, natural in frequency; breath easy; some tubular breath sound and dulness in left back; heart sounds natural; no tenderness of abdomen; kidneys cannot be felt, on account of the swelling of the walls." The report does not state the quantity of albumen at that time. There was a good deal at first, afterwards it was diminished in quantity.

This was a case of acute dropsy, the health having been apparently pretty good before. As to the stated mode of attack, you can never trust very accurately to the account given by these persons. He acknowledges that he gets intoxicated once in three or four weeks; it is very probable that this "last Sunday week" was one of those occasions. It is not likely that going out for five minutes after tea would lay the

foundation of such ailments; but if he had been drinking something stronger than tea, and lost his recollection as to the exact time he was out in the cold, it would be a natural occurrence. Exposure to cold after drinking is a frequent cause of albuminuria.

He was first cupped on the loins to ten ounces: an ounce dose of cream of tartar was exhibited every morning: after the fourth dose, it caused him to pass five or six pints of urine almost free from albumen, but it did not act enough on the bowels, and I therefore gave him a dose of calomel on two or three occasions. The bowels still refusing to act with that briskness which I desired, I gave him the compound jalap powder instead, which produced copious watery evacuations. The report on the 18th is, that he makes much more water than formerly; the urine contains no albumen, but is very light coloured. The specific gravity was 1030, which is remarkably high for pale urine; however there was no albumen in it, and the weight must be due to the quantity of urea. As the result of all this excessive discharge, you may suppose the dropsy was greatly relieved. The swelling was almost entirely gone; but there was still some swelling in the walls of the abdomen. The report on the 19th and 20th was, that he was improving, the urine still free from albumen, and very fair in quantity. On the 22d, there was a slight appearance of albumen in the urine, and I accordingly increased the dose of compound jalap powder. The report on the 25th is, "there is scarcely any albumen in the urine." On the 25th, "he feels sore about the legs and ankles, the swelling there is diminishing, but the skin has a tighter feel." This we frequently observe in cases of acute dropsy; as the swelling goes away it leaves a soreness behind it. Part of the serum is absorbed, leaving some fibrinous matter behind, rendering the swelling of a much more solid character, and this is the cause of the parts being both tighter and tender. "He passes four pints of urine in the twenty-four hours, which is pale, specific gravity 1015, slightly albuminous. He was now apparently convalescent, and only seemed to require strength to accomplish his cure. I accordingly put him on quinine and nitric acid. The urine continued slightly albuminous for two or three days more, and on the 27th there was a slight increase of it, but a decrease in the quantity of urine. After the 29th there was no albumen at all, and he appeared to be perfectly well in all other respects. The swelling had become entirely dissipated, the urine of a pale colour, of moderate specific gravity, and he was dismissed cured on the 1st of April, but I believe that he will be liable to attacks again. I think it likely that there has been laid the foundation of a disease which may

ultimately prove fatal sooner or later—sooner if he neglects precaution; sooner if he goes on in his habitual intoxication, even if it be only once in three weeks (to which he pleads guilty); sooner if his circumstances expose him to sudden transitions of temperature, or any other cause tending to an internal determination of blood, or continued congestion; sooner if his nutritive function should become impaired, so that there should be a tendency to increase the degenerative disease:—but later if these different causes are avoided, if he adopts regular diet, careful management, warm clothing, and other means of securing the proper regulation of the circulation, and a sufficient freedom in the functions of excretion.

There are two or three cases on the female side, and some of which are now in the house. The first on the list is the case of Emma Pratt, who was admitted on the 29th of March, with symptoms of morbus cordis, from which she had been suffering for some time previously, and likewise a considerable amount of anasarca. The morbus cordis seemed to be an old organic disease, comprising disease of the mitral valve, probable adhesion of the pericardium towards its apex, and some hypertrophy of the ventricles. But she appeared at that time to be labouring under a fresh inflammatory attack. The urine was found to be albuminous at that time, and has been so almost ever since. Therefore you should consider this unfavourable as to the ultimate termination of the case; there is a fear that disease of the kidney is advancing progressively: the albuminuria is not a thing occurring after paroxysms of palpitation, in the course of heart disease, but it has continued during her now six weeks stay in the hospital; therefore there is great fear that her case will progress unfavourably in various ways. We have seen in watching her progress during the time she has been in the hospital an illustration of this. She was put under treatment, and had there been no other disease she probably would have been convalescent before this, and been dismissed. It is a very common thing in cases of morbus cordis, where patients are sent to the hospital labouring under a fresh inflammatory attack, that a little antiphlogistic treatment, rest, and increasing the secretions, will set the functions right for that time, and the patient is sent out cured of the recent attack, but with the old disease about them. Hitherto there has not been amelioration enough in this case to dismiss the patient; in fact, there has been a recurrence of attacks again and again; certainly two since she has been in the hospital. She has got better to a certain point, and then the palpitation has become more violent than usual. We have found for the last fortnight a new friction-sound occurring at the base of the heart, and

signs of new valvular disease also. The signs of valvular disease when she came in were confined to the region of the mitral valve, as manifested by being loudest at the apex of the heart; but latterly a murmur is quite as obvious about the middle of the sternum, and this accompanied not only the first but the second sound also, constituting obstructive and regurgitant disease of the aortic valves. This occurrence of new valvular sounds is a sign that disease is going on in the heart, probably low endocarditis. I would say that the albuminuria is a good deal connected with this increase of the heart disease. When you recollect the pathology of albuminuria, and that it implies that not only is albumen present in the urine, but that there is an absence of a sufficient quantity of excrementitious matter in the urine, you can understand how the blood is injured in quality, and if there is any disease in the circulatory system which is exposed to the irritating influence of that blood, that disease is much more apt to be kept up and increased, and in the worst forms of disease to prove rapidly fatal. This I know has been the result in cases complicated with albuminuria in an intense form; I mean not where the latter affection has supervened on an advanced stage of disease, but where albuminuria and morbus cordis have been going on *pari passu*, keeping up each other's progress, and promoting each other's ravages. This I fear will be the consequence in this case, but we have succeeded even in this in gaining some advantage over the disease, not only rendering the palpitation less violent, and diminishing the signs in some degree, but we have improved the condition of the urine; the anasarca was reduced rapidly at first, and the urine rendered of higher specific gravity, but we have not been able to get rid of the albumen. If we do not succeed in removing it, I shall still retain my unfavourable prognosis of the case. (This patient was afterwards greatly relieved by a succession of blisters to the loins. There was scarcely any albumen in the urine when she left the hospital; the specific gravity was about natural.)

The other two cases of albuminuria resembled each other in some respects.

Ann Williams, æt. 39, was admitted on April 22d, and is still in the house. On admission, she had several diseases about her. She had been an out-patient, and was supposed to be suffering under emphysema and tubercles of the lungs. She had chronic cough, and I found signs of a small amount of disease of the lungs. She also had a great deal of pain in her back, pain in both sides, and over the whole abdomen; further, has some disease of the uterus, attended with frequent sanguineous discharge, which appears to be connected with a polypous growth. I have

not time to enter into the particulars of the whole case, but I shall advert to that part of it bearing on our present subject. The urine was albuminous (even in the absence of the discharge); and on exploring the regions of the kidneys, the right kidney was felt to be enlarged, and much more tender than the left. She already is much improved; the cough is much better, the urine has become very much less albuminous, the pain and tenderness of the abdomen have been relieved, and the uterine discharge has ceased. Two or three blisters have been applied to the loins, nitric acid and tincture of hops have been exhibited, partly to cure the cough, and partly to improve her general condition; and she has now begun other tonic medicines. I think we shall succeed so far that she will be dismissed relieved, but I do not expect, considering the complication of diseases that she presents, that she will be cured.

The case of Sarah Wray, æt. 31, presents other peculiarities. She was admitted April 24th. She has a ricketty distortion of the left leg. The habitual state of her health is weak. Until five years old she says she was strong and well formed; but she thinks that soon after she began to get weak. She had no serious illness till she was fifteen; at that time she attended a sister with scarlet fever, but does not think that she had it herself. On awaking, however, one morning, her body was swollen. I have found cases multiply upon me in the course of experience, in which dropsy like that which is the sequel of scarlatina has occurred in persons who have no knowledge of having had scarlatina itself. They are aware that they have had sore-throat, but there has been little or no rash. Knowing as we do that scarlatina in its essence may occur in persons and yet produce no rash at all, we have little hesitation in supposing that such persons have been affected with the poison of scarlatina; and knowing as we do that anasarca is a common sequel of scarlatina, we may very fairly infer, that when this disease has attacked some persons, and anasarca suddenly appears in others of the same family, the two effects have resulted from some influence exercised by the same febrile poison, although we cannot trace the disease in its ordinary form. I have not time to dwell on this subject, but I may observe that the dropsy after scarlatina has nothing to do with the amount of eruption: in cases where there has been the least eruption there may be the greatest swelling; therefore, it is absurd to suppose that scarlatina produces dropsy by affecting the structure of the skin; it operates, as is now pretty well established, by its influence on the functions of the kidneys. This patient had medical advice immediately, but she continued weak

for five years. There was mischief done to the whole system. At the time mentioned she had a dry cough. The menses did not occur till she was 20, and they have almost ceased since last July. Her breath has been short since the above-named illness; and in the last eight or ten days she has been subject to palpitation of the heart.

About a month ago she took cold, with shivering followed by fever; and has since suffered from cough with frothy expectoration, (once a little bloody), pain at the sternum increased by a deep breath, pain and tenderness of loins and abdomen. In the last week the legs have swelled much; the urine had been scanty and high coloured. For the last ten days she has been an outpatient, but not getting better, was admitted. On admission, besides the continuance of the symptoms just mentioned, we found the pulse rather frequent, but not hard; dulness on percussion, with mucocrepitation in the lower part of both posterior regions, chiefly on the right side; breathing tubular in right scapular region. Abdomen enlarged, chiefly from gaseous distension of the intestines. Liver does not extend below the usual limits; but the spleen is felt enlarged, reaching nearly to the umbilicus, and is tender on pressure. Both kidneys also are tender, especially the right, which can be felt enlarged. The urine is very scanty and albuminous. As soon as the disordered state of the kidneys and urine was ascertained, I looked upon this as a cause which had played a very powerful part in producing the other symptoms. In looking back to the history of the case it is probable that the foundation of albuminuria was laid at the age of fifteen, when dropsy occurred. It has been observed in other instances that granular degeneration of the kidneys is more apt to occur in persons who have had dropsy in early life after scarlatina than in any others. We can easily see the reason of it. I believe that in the present instance, although the disease may be in great part cured, yet it will not be wholly eradicated. The congestion of the kidney will be removed, and with it the albuminuria and dropsy; but it may leave eacoplastic deposit, weakening the function and impairing the structure of the kidneys; not enough to operate under favourable circumstances, but when the health becomes taxed and tried by various causes, the kidneys thus injured will again fail in discharging their office. The same remark is applicable not only to cases in which albuminuria may occur in connexion with scarlatina, but where it arises from exposure to cold after drinking. Where one attack has occurred, a second is likely to take place. It is not a necessary consequence that there should be a recurrence, but individuals are rendered increasingly liable to

it, and therefore need care in their subsequent management. The first attack may be cured to all appearance, but a proclivity to the disease is in most instances established.

The other symptoms which this patient presented have had a great deal to do with this affliction. The subacute inflammation affecting the lung, causing the continued cough and shortness of breath, the general prostration of strength, the pain in the head, the general lassitude, the loss of flesh and strength, can all of them be accounted for on the supposition of the urinary secretion having been defective. Just in proportion as serum is substituted for urine, the proper amount of urine ceases to be excreted.

We have seen a certain improvement in her symptoms. She was treated with a blister first between the shoulders, because, although she was in a dropsical state, it was quite clear that the effusion in the chest was the more important thing, and therefore required first to be attended to. Squill, digitalis, and iodide of potassium, were exhibited three times a day, and inasmuch as she was too weak to bear an active purgative plan, a day or two was allowed to elapse before an aperient was given. One was administered on the 26th of April, and operated pretty freely; this succeeded in entirely removing the swelling of the legs and the chest affection. She has since been given a mild bitter infusion—calumbo with a little tincture of digitalis, with a view to increase the urine. It has been found that as that has been increased the albumen has been diminished, but still albumen is present, and there is some complaint of pain in the loins on the right side, chiefly in the region of the right kidney.

The report with regard to the urine on the 13th is, that it is not albuminous, and that so far shows progressive improvement, but we are not always to look on the albuminous condition of the urine as the only index to the condition of the kidney. We may have congestion so as to be painful without serum passing into the urine; and inasmuch as she complains of pain, the condition of the urine has not prevented me from prescribing cupping to the loins to remove this state of the kidney. This was ordered at the last visit; there is no albumen to-day, and scarcely any pain. She is therefore in an improving state, and will soon to all appearance be cured. She will probably remain comfortable at least during the whole of the summer; but when the trying changes of nature approach, it is more than probable that she will again become a sufferer. (The urine remained free from albumen during the ten following days, after which she was discharged without apparent ailment.)

SURGICAL CASES TREATED IN GUY'S HOSPITAL.

REPORTED BY DR. G. BROWNE.

With Clinical Remarks

By C. ASTON KEY, Esq. Senior Surgeon.

Two Cases of Lithotomy, illustrating the cause of difficulty often experienced in seizing a calculus.

CASE I.—George Bennett, aged 6 years, a fine healthy-looking child, with dark hair and eyes, and rather fair complexion, was admitted into Dorcas Ward, April 1845, under Mr. Key, suffering under symptoms of calculus in the bladder. It is now about three years since his mother first discovered that he had difficulty in micturition; during this period has experienced great pain in passing his water, has voided it more frequently than natural, and always complained of a tingling sensation at the extremity of the urethra, which caused him to be continually pulling the prepuce. When passing his water he would frequently void his feces at the same time; the flow of urine is occasionally suddenly stopped, but upon changing his position it will again flow. His urine is generally clear, and has never been tinged with blood; he cannot run and jump about as other children, on account of the pain it induces; always throws one leg over the other, whether standing or sitting; since December has not been able to hold his water, and it is constantly dribbling away from him. General health good; appetite good, and sleeps pretty well. Has been sounded, and a calculus of rather a large size detected.

May 6.—Having been prepared, and the bowels freely opened, the lateral operation was performed, and a stone, of about the size of a pigeon's egg, or rather larger, but of an elongated form, was extracted. There was some difficulty in seizing the stone, owing to its being situated in the fundus of the bladder; and, upon attempting to grasp it with the forceps it immediately receded still further up into the fundus, nor could it be seized until considerable pressure was made externally upon the fundus of the bladder, when it was immediately forced down betwixt the blades of the forceps, and extracted. Little blood was lost during the operation, and, when visited the same evening, appeared quite comfortable.

7th.—Has passed a restless night, but appears to go on favourably.

12th.—Is going on well; no pain; the whole of the urine passes by the wound.

13th.—Has passed a small quantity of urine by the natural passage; the wound is healing rapidly; has no bad symptom.

To have two ounces of sherry wine daily, with a mutton chop.

16th.—Doing well. The quantity of urine passed by the urethra daily increases.

20th.—Passes the whole of his urine by the natural passage; wound is nearly healed.

30th.—The wound is quite closed, and he passes the whole of his urine through the urethra.

Case of Calculus in the Bladder—Lithotomy—Difficulty in the operation—Sloughing of the wound—Recovery.

CASE II.—Mark Carter, aged 39, was admitted into Cornelius Ward, April 11, 1845, under Mr. Key, with calculus in the bladder. Is a native of Blisworth, in Northamptonshire, rather stout and strong, but unhealthy-looking man, with dark hair and eyes, of intemperate habits; is a railroad labourer; married, and has six children. States that he has generally had good health until two years ago, when he had small-pox in its severest form, which much debilitated him. Upon resuming his usual employment, without any apparent cause, he experienced great pain in the perineum and testicles, particularly the left, which is slightly retracted; likewise had pains in the thighs and loins, increased during and after micturition, and also during defecation; had a frequent desire to micturate, sometimes passing bloody urine; occasionally the stream of urine would suddenly stop, but upon changing his position it would again flow. For these symptoms of stone in the bladder he was admitted into the Northampton Hospital, where he was sounded, and a calculus, supposed to be large, detected, for which, in consequence of his ill health, he was only treated medicinally.

When admitted into this hospital, the symptoms were as stated above, but more severe: has greater difficulty in passing his urine; great pain at the end of the penis; a constant irresistible desire to micturate; cannot retain his urine longer than half an hour; the urine contains a large quantity of mucus, with a very small quantity of pus, is slightly acid, the specific gravity is 1015, and contains a little albumen; during the night, or when in the horizontal posture, his urine dribbles away from him; he complains of great weakness in the back, with pain; is not able to lift heavy weights, or use any exertion beyond that of walking gently; pulse 94, feeble, but regular; tongue pale and moist; none of his family have been subject to gravel or stone. Ordered—

Pil. Saponis. Comp. c. Ext. Hyoseyam.
aa. gr. v., nocte inaneque sumend, and full diet.

24th.—General health improving; pulse

90, and fuller; obtains more rest at night, and his appetite is improving.

May 3d.—Still continues to improve; skin is moist and perspirable; tongue clean; pulse 90, soft and regular; can now retain his urine for an hour; a sound has been passed to-day, and the calculus, which feels hard, is situated high up in the fundus of the bladder.

12th.—Is slowly gaining strength; can retain his urine for rather a longer period. The urine has been examined by Dr. G. Bird, and no saline deposits could be detected.

20th.—The patient's health being much improved, he was prepared for the operation, which Mr. Key performed to-day in the usual way; the opening into the urethra, which was made exceedingly small, being dilated with the blunt gorget.

The calculus, as stated above, was situated high in the fundus, and it was found impossible to grasp it with the forceps until considerable pressure was made externally upon the fundus, when the calculus immediately fell betwixt the blades of the forceps, and was grasped and extracted with some little difficulty, the stone being rather a large one. The operation was quickly performed. A deep arterial branch was divided, which bled freely. The patient was put to bed, hæmorrhage still going on, and which continued for two hours, notwithstanding the constant pressure which was kept up by the introduction of the forefinger into the wound, and pressure upon the mouth of the bleeding vessel; cold was then applied, and he was ordered—

Mist. Amygdalæ, 6tis horis.

21st.—Has passed a restless night; complains of great pain in the loins and perineum; tongue moist; skin hot; pulse rather quick, 100; water passes freely through the wound; the hæmorrhage has entirely ceased. The bowels being confined, was ordered—

M. M. c. M. S. 3ij. statim.

22d.—Going on favourably; is not in so much pain; skin is cool and moist; pulse less frequent; tongue clean and moist; has passed a little urine by the natural passage. Ordered—

Tinct. Opii, ℥xx. c. Syr. Papaver. ʒj.
ex Aqua Menthe, hac nocte.

23d.—Much better; has passed a good night; is in less pain; skin cool and moist; tongue clean; pulse soft, 90; wound is healing slowly.

24th.—Has complained of pain in the bowels; has taken a dose of castor oil, which has acted freely, and relieved him; the wound is looking pallid; about half of his urine passes through the wound. Ordered—

Vin. Rub. ʒiv. quotidie.

26th.—Is doing well; complains of slight

pain in the bowels; pulse rather quick, 98; skin cool and moist; he now passes the greater part of his urine through the wound, which is looking more healthy, and is suppurating. Ordered—

A mutton-chop daily, and to continue the wine.

27th.—Is going on well; the bowels have acted freely, and there is less pain.

29th.—The wound is healing, but slowly; the greater part of the urine passes through the wound.

June 1st.—Going on favourably.

5th.—He now passes the whole of his urine by the urethra; the wound is slowly healing; complains of pain in the perineum, which he attributes to the use of the bed-pan.

7th.—Does not make much progress; the wound is suppurating. Chloride of lime lotion (composed of one grain of the chloride of lime to an ounce of distilled water) was ordered to be applied to the wound.

9th.—Has been in a great deal of pain since the application of the lotion, which appears to have acted as an escharotic; tongue is slightly furred; skin hot and dry; pulse rather frequent, 100; is very restless, and has no sleep; the bowels are constipated; has vomited a small quantity of bilious matter; has also had rigors. Ordered—

Pil. Colocyn. c. Calom. gr. v. statim.

M. M. c. M. S. 2nda hora post.

10th.—Complains of great pain in the perineum; the wound is looking very unhealthy, and is much inflamed. Ordered—

Cataplasmata Papaveris to the wound.

11th.—Has passed a restless night, and complains of great pain in the wound, which is looking rather better; no urine passes through the wound, and he can make his water in a full stream; skin is hot, but perspires freely; has had no rigors since the 9th; pulse 100, and small. Ordered—

Lotio Calcis c. Opio to the wound.

12th.—Is in much the same state. Ordered—

Acid. Nitrici Diluti, ℥x. ter die ex Mist.

Acaciæ et Vinum Rubrum, ℥viij. quotidie. Tinct. Opii, ℥xx. ex Jalep Am. om nocte.

Has passed a comfortable night; wound painful and inflamed; skin hot, but perspirable; tongue slightly furred.

14th.—The wound is not so much inflamed, but has a sloughy phagedenic appearance; a small quantity of urine was passed through the wound.

To continue Med.; and a pint of porter daily.

16th.—The whole of the urine passes

through the wound; he is not in so much pain; the bowels are in a relaxed state; and he complains of being excessively weak and languid; the wound is looking rather better. Ordered—

Mist. Cretæ, c. Tinct. Opii, ℥xv. ter die, et omite alia Med.; cont. Wine and Porter.

19th.—Wound is sloughing; pulse quick, 100, and weak.

A Carrot Poultice to be applied to the wound. Rep. Med. and Wine and Porter.

20th.—A large slough has come away, and the wound is looking more healthy, and has commenced to granulate.

21st.—Wound is improving; the whole of the urine passes through the wound.

23d.—Is improving slowly; wound granulating; bowels regular; appetite is improving; a portion only of the urine passes through the wound, which causes a good deal of pain.

26th.—Is going on favourably; urine passes both through the urethra and wound; complains of pain in the right leg, commencing at the ankle, and passing up each side of the leg, more particularly the inner side, to the inguinal region, where the glands are slightly enlarged.

28th.—Wound is looking healthy, and is healing rapidly; the pain in the right leg is nearly gone, but he complains now of the same kind of pain in the left, commencing at the ankle, which is rather painful, and passing up each side of leg, but more especially the inner, to the inguinal region, where the glands are also enlarged, and very painful.

30th.—Wound is going on well; the pain in the left thigh has increased, and the leg is become very tender, but there is no external sign of any inflammatory disease going on; skin is hot and dry; tongue slightly furred; pulse 98, and weak; bowels regular. Ordered—

Fomentations, and flannel roller to the limb.

July 1st.—Pains in thigh and leg are less; the inguinal glands are enlarged and painful; tongue cleaner and moist; pulse regular, but very feeble, 94; perspires freely, but has had no rigors; bowels are regular; wound is healing slowly, and looks exceedingly healthy. Ordered—

Quinæ Disulph. gr. ij., cum alia Medicin. Cont. Wine and Porter.

5th.—Pains in the left thigh and leg have nearly disappeared; wound is healing gradually; about half of his urine passes through the wound.

12th.—Is doing well; the pains in the leg have quite left him.

19th.—Is doing well in every respect; the wound is nearly healed, and but a very small quantity of urine passes through the wound.

24th.—Convalescent.

REMARKS.—Few cases of lithotomy present points of sufficient importance or interest to deserve a separate notice in a report. The dangers and difficulties of the operation lie in a small compass, and are pretty generally known to operating surgeons. The two cases above reported presented difficulties of a similar kind, the stone in each being lodged high up in the fundus of the bladder so as to elude the grasp of the forceps, until it was dislodged by pressure made on the lower part of the abdomen. The cases elicited from Mr. Key the following clinical remarks on the principle of obviating this not unfrequent occurrence in the operation of lithotomy.

A calculus usually lies free in the bladder as long as the mucous coat of the organ preserves its healthy condition. The oxalate, urate, and even the phosphatic stones, are found in the base of the bladder until the surface of the membrane becomes villous from inflammation, and its secretion becomes alkaline and viscous. The bladder, inflamed and irritated by the stone, contracts upon it with more force, and secretes an abundance of alkaline mucus, the phosphatic salts of which crystallize on the surface of the stone, and make it adhere often with considerable tenacity to the surface of the organ. This fixed state of a calculus is not only an evil in itself, adding much to the difficulty of an operation, but is met with in patients whose bladders have suffered much from the irritation of the stone, and who are generally least able to bear up against the effects of a difficult and protracted operation. The part of the bladder usually occupied by a calculus under these circumstances is the fundus, which retains the stone with tenacity, while the lower part of the organ receives the urine as it passes from the ureters; and in sounding such a bladder, the calculus is felt either on the concave surface of the instrument, or by withdrawing it towards the pubes—a circumstance that always portends some difficulty in seizing it after the bladder is opened.

It has happened more than once that a patient has been removed from the operating table with the stone remaining in the bladder after long and continued efforts made in vain to seize it; and the failure has arisen, not from the extraordinary size of the calculus, but from its peculiar position. The forceps, at first, though opened to their full extent, obtain but a slight hold of the stone, the extremity of it only is seized, and it soon escapes from the grasp of the operator.

Repeated attempts are made to gain a firmer hold of it, and at each attempt the stone is pushed further from the opening, until the forceps are obliged to be buried nearly to the handles before the stone can be felt. It is in the retreat of the stone before the forceps that the difficulty of seizing it lies. The stone, instead of retreating in a direct line from the opening into the bladder, ascends behind the pubes, where the forceps cannot, without assistance, reach it; much less grasp it. The cause of this difficulty is not easily ascertained in the adult; the parts lie too deep for the finger to learn with precision how the stone lies in the bladder, and what constitutes the difficulty in seizing it. In a child, however, the parts being on a small scale, the exact cause of any difficulty in the operation can be appreciated and met.

In children such a difficulty as that above alluded to occurs but seldom, and the fundus of the bladder is not so distant as to place the stone beyond the operator's reach, even when grasped by the coats of the bladder. But in the younger of the two patients on whom Mr. Key operated, this difficulty occurred in a degree which he had but once before met with in a young subject, and would have rendered the attempt to extract the stone abortive had not he directed pressure to be made above the pubes, so as to bring the calculus within the grasp of the forceps. The handles of the forceps, though depressed as much as the wound would allow, could not carry the blades high enough to reach the stone, and it required very firm pressure on the lower part of the abdomen to depress the stone sufficiently to enable the forceps to seize it. As soon as firm pressure was made, the stone could be felt to descend between the blades of the forceps.

It is more than probable that in many of the cases recorded of insuperable difficulty in extracting calculi of ordinary size by lithotomy, the operator has not sufficiently borne in mind the impossibility of directing the blades of the forceps to the altered position of the stone, which, from the pressure of the forceps in the unsuccessful attempts to seize it, retires, not backwards but upwards, so that it becomes placed in a line little less than perpendicular in relation to the external incision. In such a situation, even in very young children, it becomes difficult to seize it; and in the adult, especially when the prostate gland is enlarged, impossible to reach it. The advantage of pressure made above the pubes was forcibly shown in the cases reported above, and the cause of difficulty clearly illustrated.

Original Communications.

NOTES OF YET ANOTHER

TRIAL WITH THE MESMERISTS,
IN A THIRD SEARCH FOR CLAIRVOYANCE.

BY JOHN FORBES, M.D. F.R.S.

"These lies are like the father that begets them,
Gross as a mountain, open, palpable."
KING HENRY IV. PART I.

WHEN completing my notes of some recent mesmeric trials, published in the *MEDICAL GAZETTE* the 18th of last month, I had no intention of giving myself any more trouble on the subject, at least for some time to come. I was, indeed, so disgusted with the many successive impositions I had had to expose, that I was determined to let this new fraternity of mountebanks—the itinerant mesmerists—proceed on their course without further molestation on my part. If the public still chose to be gulled by such arrant cheats as I had had to deal with, in spite of the numerous warnings they had received, it was their own affair; and it seemed no one's special business to interfere between them and their enjoyments. At least, I felt that I had no particular call to do so. I had not, however, given up all intention of inquiring further into the phenomena and facts of mesmerism; and, therefore, on receiving from a most respectable quarter a pressing invitation to renew my inquiries in this field, I did not hesitate to accept it. The object of the present paper is to communicate the results obtained in this new trial with the mesmerists.

On the 29th of last month I received the following letter by post. The writer was at the time personally unknown to me, but I learned from a friend that he was a gentleman of high respectability; and my subsequent intercourse with him has only served to confirm the accuracy of the statement. In the present narrative I shall speak of this gentleman under the name of A. B., as the publication of his real name might be unpleasant to him; and his extreme civility and fairness, during the whole course of our proceedings, well entitle him to every courtesy at my hands. It is hardly necessary to add that, in the disgraceful imposition which it is my business to expose, he was no further blameable than in allowing his good-nature and honesty to be too easily imposed on. His extreme facility and credulity are hardly chargeable on himself individually, as these seem inherent attributes of the genus MESMERIST.

Letter from Mr. A. B. to Dr. Forbes.

"SIR,—Assuming that you, like myself, seek only to ascertain the very truth on the disputed question of clairvoyance, and that you will investigate it not as an advocate seeking to make out a plausible case on one side, but as a Judge looking for the right, and willing to decide according to the fair rules of evidence, I take the liberty of inviting you to make trial of a case of alleged clairvoyance which I can produce to you.

"I should state that I have no personal interest in the matter; I am merely actuated by an honest spirit of inquiry, and seek the truth and the truth only. I should be equally pleased could mesmerism and its phenomena be *proved* to be false as if they were shown to be true:—I only desire to learn what is true, and that the truth, when ascertained, should be proclaimed. I am no practitioner of it in any shape. My profession is that of a barrister.

"I have in my employ a boy who has, or appears to have, the faculty called clairvoyance; that is, he can, when mesmerised, perceive objects imperceptible to persons in the ordinary state. He has many times read to me and to others words wrapped in many folds of thick paper, and enclosed in a card-case.

"I ask you to see this boy, to test him yourself, fairly and thoroughly, and ascertain the fact by your own personal investigation. If you will name any morning before Friday of the present week, you shall see him at my chambers, and make the experiment.

"But to insure a fair trial, I must impose the following conditions:—

"1st. You shall bring with you two or three packets, each containing a word or figures, or a picture, wrapped in four folds of thick brown paper, sealed; and which I wish you to prepare at home, that you may be assured beyond question that the contents are known to nobody but yourself.

"2d. The words or figures shall be printed, not written, the boy being illiterate. The word shall be in capital letters, and not one that is likely in itself to puzzle an illiterate reader; the figures to be in type of a good size. The number of letters in the word not to exceed eight: the number of figures not to exceed four. The packet will be placed in a card-case of wood, which I will produce, and which you may seal also, to insure that it is not opened.

"3d. Inasmuch as the faculty is affected by states of health, or some circumstances not known, a formal judgment *against* him not to be pronounced until after trial on three several days. *He has never once failed yet*, but he *may* do so, for the reasons named above.

"4th. That if he succeeds you shall admit and attest the fact.

"5th. That one friend of mine and one friend of yours only shall be present, and that each shall take a note of the experiment, which shall be embodied into one, and signed by all of us (if we agree) before we leave the chambers; and that you shall publish such note in a medical journal, with any comments you may please.

"I impose these conditions, because I can only profess that he shall accomplish what I have seen him perform. I do not know that he might not read writing, or sentences; but as we are utterly ignorant of the conditions under which the faculty acts, it is safe to try that only which has been done successfully before.

"I shall afterwards be happy to assist you in trying any other experiments you may suggest.

"But this, if done, establishes the existence of a faculty of perception distinct from the organ of vision, and that is all we can yet affirm. A reply, naming the day and hour, will oblige, Sir,

"Your obedient servant,
* * * *

"Temple, 28th July, 1845."

I wrote in reply, that I would gladly avail myself of Mr. A. B.'s polite offer. Accordingly, I waited on him at his chambers on the following day, with the view of agreeing on the terms, and of arranging a meeting for the formal investigation of the case. I did not come prepared to enter on the inquiry then, but as the boy was, at this very time, in the chambers, and as Mr. A. B. expressed a desire that I should witness his powers at once, it was agreed that we should make the best extemporary arrangements we could, for fairly testing them. Of their immediate demonstration before me, Mr. A. B. seemed to entertain no doubt whatever, any more than of their previous exertion on numerous occasions in his presence, under circumstances where, he said, there could be no collusion, cheat, or mistake.

The following additional account of the boy is extracted from the journal called "*The Critic*," one of the organs of mesmerism; it expresses precisely the opinion stated to me by Mr. A. B., and I believe I may say that it was either written by himself, or certainly authorised by him. The reader is requested to notice the particular kind and positive nature of the statements here made; as a very singular contrast to them will be furnished, from the very same source, in the course of the present narrative. It is most provoking that all these positive and undoubted realities of marvels should at once vanish whenever the unlucky writer of this paper comes on the scene.

Surely he must be bewitched, or be bemesmerised the wrong way.

"The boy is extremely intelligent and communicative in the somnambulist state. He readily answers any inquiry, and he tells us that *if any test is applied which he cannot solve he says so at once. He never guesses at an answer if he does not really perceive the object*: hence it is, that, unlike any other patient we have seen, *he has never failed in a single instance.*

"He states further, that *it is easier for him to see through a solid body than through one composed of folds: each surface presents an obstacle and increases the difficulty of seeing.* Hence he can perceive objects within a wooden box more readily than within a couple of envelopes, and through brown paper more easily than through white paper."—*The Critic*, 26th July, 1845.

GEORGE GOBLE, the seer, was then introduced. He is a lad of about seventeen, rather small of his age, but intelligent-looking. I was a little disappointed to learn, on inquiry, that he is "an old hand" at these things, having formerly exhibited, in public, under both Mr. Vernon and Mr. Brookes. He had only been a few weeks in Mr. A. B.'s service (as a copying clerk); but during that time he seems to have been much engaged in his former vocation as a seer,—discharging the functions thereof to the boundless satisfaction of his master.

FIRST DAY.—July 29th, 1845.

First Experiment.—It was proposed by Mr. A. B. that the same plan for testing the boy's powers should be followed which had previously proved so extremely successful with him; and as this was fair and reasonable I immediately adopted it. Mr. A. B. produced some common coarse brown wrapping-paper, and requested me to place any word I chose within several folds of this,—he and the boy leaving the room while I did so. Out of a heap of loose journals and pamphlets, I clipped a common word from the title page of one, and folded it within the brown paper. Mr. A. B. then returned into the room, and proposed that I should seal the ends of the paper. I did so, turning the ends of the folded paper over (in the manner of a chemist's medicinal "powder"), and dropping the wax on them. Owing to the thickness and stiffness of the paper, the sealing was not very effectively done, the folded ends being partially tilted up, and drawing the wax along with them. The paper thus folded and sealed was then placed within a common leather or paste-board card-case, which was neither sealed nor tied.

The boy, being "mesmerised" by Mr.

A. B., after staring and winking, and twitching his limbs for a minute or so, lay down seemingly asleep; and after lying in this state for about the same period, he awoke up in the brisk, pert humour common to the so-called somnambulists. In this state he conversed readily with every body, and showed not the slightest mark discernible by me (or, I believe, by any body else) whereby he could be distinguished from a common waking mortal, except that he generally kept his eyelids partially closed. He took the card-case, and went through a great variety of manœuvres which occupied a long time—I should think half an hour or more—and which it would be tedious and useless minutely to describe. The greater part of the time he sat or lay upon a sofa, having a pillow at one end. The most common of his proceedings were:—to place the card-case on his forehead, and press it first with his hand, then against the pillow;—to breathe repeatedly and forcibly on the case, and again place it on the forehead, and again press it on the pillow;—then to place it *under* the pillow, and press his face and head on this;—then to place it on his hand, place the pillow on this, and again press his forehead on it, &c. &c. He also frequently, while lying on his face, put his head over the pillow, as if looking under it, and I observed that for a long time together he kept both his hands under the pillow with the card-case. I watched him as closely as I could, and although it was obvious from the position of the arms and their movement, that the hands were at work, I could not discover that at any time he opened the card-case, much less opened the paper enclosed in it; yet it was not only perfectly possible, but quite easy for him to do so without being seen. After these various manœuvres had been continued to a very tedious length of time, George got up from the sofa, placed the case under my foot on the floor, and placed his forehead on my foot; then, after a short time, started up, and, in a sort of furor of excitement, and with a degree of rapidity which rendered it impossible to see accurately the condition of things, or to check his proceedings, he pulled open the case, whisked out the paper, and, calling out the word “COUNTRY,” was proceeding to tear it open, when Mr. A. B. and myself tried to stop him, and to get the paper into our possession; and I believe we did get it for a moment; but before any examination could take place he snatched the paper from us, in real or affected rage, and tore it in pieces. All this took place so rapidly, amid such excitement, and with so much surprise on my part, that it was utterly impossible to have any certainty as to the precise condition of the paper when withdrawn. When the top of the case was

snatched off, the seal on the projecting end of the paper certainly *seemed* still there, and probably was so;—but, as I have said, I cannot speak with any certainty of this, much less of the condition of the seal at the other end.

Having, at that time, no special reason for deeming George an impostor, and being somewhat influenced by the most confident belief of his honesty and of his marvellous powers entertained and expressed by Mr. A. B., I own I was at first somewhat confounded by the bold announcement of my “sealed word,” which seemed to come a good deal nearer the marvel of clairvoyance than anything previously witnessed by me. But I soon recovered my tranquillity and my scepticism, and felt that there was yet a good deal more to be done before I could be justified in changing my opinions.

The complete uncertainty as to the integrity of the seals, of course, vitiates entirely this experiment, and renders it perfectly valueless as a proof of clairvoyance: while a consideration of the previous and subsequent proceedings of George, throws more than mere suspicion on the case, and renders the explanation that immediately suggests itself to a sceptic hardly questionable; viz. that the lad had, amid his secret manipulations under the pillow, actually unfolded the paper, and read the word; and that the sybilline fury of the *denouement* was cunningly assumed to prevent discovery of the broken seals.

Second experiment.—Unseen by any person I wrote at the top of a slip of white paper (about the length and half the width of common note-paper) a single word, in large print-capitals, and folding the paper several times on itself, placed it within the same card-case. I am certain that I *folded* the paper into a flattened parallelogram, somewhat less than an inch in breadth,—as it was natural so to shape a paper to be placed within a thin card-case. And I have a positive proof of my having done so, in the paper itself, still in my possession, on which I find the same word imperfectly printed, *in reverse*, nearly an inch below the word written by me,—the impression being produced unquestionably by the *flat folding* of the paper before the word was quite dry.

George Goble took the card-case in high glee at his former success, and expressing aloud his confidence of speedily reading what was enclosed. He proceeded to execute all his former manœuvres, of which the most prominent was, still, that of keeping the card-case under the pillow, peeping occasionally over and under it, then bringing it forth, breathing vehemently on it, and pressing it to his forehead. After a considerable time thus consumed, he started up, placed the card-case on the floor, placed my foot

upon it, and then his head on my foot, precisely as on the former occasion. He then triumphantly announced the word, spelling it—"F-o-u-l-d." I said this was not exactly the word, but was sufficiently near it to satisfy me that he had seen what the box contained. But Mr. A. B. wished him to be perfectly accurate, and he very soon pronounced the word to be as I had written it, "*Fold*." George then proceeded to open the box and withdraw the paper, which he half-unfolded, or rather unrolled, before I could take it out of his hands. I saw, however, that when the top of the case was withdrawn, *the paper was very different in form from the paper I had placed there*:—instead of being *flat* and broad as described, it was perfectly *round*, rolled on itself like a common paper-match. I immediately got possession of the paper, and, the boy being sent out of the room, expressed my conviction that the box had been opened, and the word read by ordinary vision. The gentleman present admitted that the paper when withdrawn from the case, was rolled on itself, as I have described it.

As this singular change of form could not possibly have occurred spontaneously, and as the secret manipulations beneath the pillow afforded the greatest facility for George's opening the case without being seen, there can hardly remain, in any mind, the shadow of a doubt that he did so, and thus obtained his knowledge of the word.

Third experiment.—It being now no longer doubtful that our seer, George, would not hesitate to see all that he could in the humble human fashion, it was necessary to take some precautions to prevent his being tempted from his high calling of clairvoyance. Accordingly, in repeating the last experiment, I made this little difference, viz. that the card-case was carefully bound round with twine, and sealed, so that it could not be opened without detection. A long trial was made with this in the same manner as before, over the pillow and under the pillow, but no announcement of the enclosed word was made. George admitted that he could not see into the box.

Fourth experiment.—George accounted for his failure in the last experiment, by a change having been made in the *colour* of the paper enclosing the word. In the present experiment, therefore, paper of the desiderated hue was adopted; but the case being as carefully corded and sealed as before, a similar result ensued: no reading of the enclosed word took place.

SECOND DAY.—THURSDAY, 31ST JULY.

On this occasion Professors Sharpey and Graham, of University College, accompanied

me; and we all took with us small boxes of wood, and all *sealed*, but not otherwise secured. It was laid down as a positive condition, that the breach of a seal, however effected, should be understood to vitiate that particular experiment wherein it took place.

First experiment.—George first selected a little round box, fixing with a spiral screw; one of the small boxes commonly used by seal-engravers to contain impressions of seals in wax. It was sealed on the edge, and was otherwise difficultly unscrewed. It proved too difficult for George; as, after a considerable trial, he gave in, stating at the same time, somewhat carelessly, that he had "*seen*" in it some of the letters, but not with accuracy;—he thought they were "*har*" or "*hart*." On examining the box, the seal was found perfect; the contained word was "*insane*,"—having, it will be observed, only one of the three or four letters announced by George.

Second experiment.—George then selected another box—a small square box, of very slender materials, (the slightest of the lot) with a sliding lid which was not at all tied, but merely kept in its place by a single seal on its outer end, and a small drop of wax at one corner. He proceeded through the same routine of manipulations as before, retaining the box for a long time under the pillow, and, as was obvious from the motion of the arms, evidently using both his hands there for some purpose, while the peepings over and under the pillow were frequent. At one time, a sound as of a crack, or click, or snap, was distinctly heard from under the pillow. After a considerable time, he got up and placed the box on the floor and my foot upon it, and then his head upon this, as on the preceding day. He then shouted out the word "*Royal*," sprang up from the floor with the box in his hand, and was laid hold of while in the act of proceeding apparently to draw the lid, and the box wrenched finally from his hand. On examination, it was found, that the seal, and also the drop of wax, were broken across, precisely in the line of opening, by a smooth crack, very fine, yet sufficiently perceptible. As the conditions of the experiment were here manifestly broken through, the result was declared to be simply *null*, as, whatever suspicions we entertained, we had so positive proof that George had broken the seal, and read the word by ordinary vision. Although Mr. Graham, whose box this was, thought it the fairest course that the box should not at that time be opened at all, yet I may now state that the word was correctly named by the boy.

All the circumstances of the case being considered, no rational doubt can be entertained that George came by the knowledge of this word by opening the box beneath his screen of pillow, and reading it with his natural human eyes. On more closely examining the box, it was found that the crack or fracture in the seal remained as minute and fine, and as little conspicuous, after withdrawing and returning to its place the lid, as when it was examined when snatched from George's hand. I mention this, because it was doubted at the time by some of George's friends whether the seal was really so much fractured as must have been the case had the lid been completely withdrawn and again shut.

Third experiment.—It being now sufficiently evident that the security of a mere seal was insufficient, some boxes were tied firmly with tape, and sealed in such a manner as could leave no doubt in any mind that, if opened, they were intentionally opened. George selected one of the best secured, and, as if to astonish us at once by his honesty and bold confidence, he proceeded to a desk standing in the room, placed the box within it, locked it, and gave me the key! He then laid his face and head upon the desk, and remained motionless in this posture for some time. He then took a pen and paper, and made, first, six marks, which his friends gravely interpreted as indicating six letters in the imprisoned box; and then wrote the letters "cas" twice over,—without, however, stating, or otherwise indicating (though we all inferred that such was his meaning), that these were the letters contained in the box. After a little longer silence and inaction, George opened his eyes, stretched himself, and was declared by his mesmeriser to be awake! And this spontaneous waking-up of George was declared to be a thing unexampled, and unaccountable and wonderful. To us unlearned sceptics, it seemed a very natural and easy mode of getting out of the difficulties of his position, without owing further defeat. The box when opened was found to contain the figures 1787, and no letters.

We, the experimenters, were so perfectly satisfied with the results of this day's trial, taken in conjunction with those of the former, that we did not propose any immediate repetition of the experiments. George had invariably failed where it was impossible to see by ordinary vision; and all his apparent successes were either palpable deceptions, or, at most, successes where ordinary vision was not merely possible, but very probable and very practicable. We accordingly took our departure, without arranging any further meetings, George's friends admitting that the results were at least inconclusive;

and Mr. A. B. expressing great surprise at the unaccountable and most unusual failure of his protégé.

In the course of the same evening I received from this gentleman another polite note, part of which I print, chiefly because it exhibits the faith he still had in George's honesty, and his unbroken confidence in his powers.

"Thursday Evening.

"My dear Sir,—As I see you are proceeding with the inquiry fairly, I am very anxious that you should have the fullest opportunity for investigation, and as I go out of town for a week on Saturday morning, I should really be obliged if you could see the boy again to-morrow, either morning or evening, at your convenience; and if you could get your two friends to be present I should be so much the better pleased. . . .

"I know, from repeated success in the presence of others, that the boy *can* do what he *appears* to do, and that all is *bona fide*: but I admit that what you have seen is open to question from one who had not seen him at other times; and therefore I am very anxious that you should satisfy yourself fully. Appoint any time to-morrow, (Friday) any place, and I will meet you.

"Yours faithfully."

I wrote in reply to this that I would wait on Mr. A. B. at a quarter past one, with my friends, and added, that I expected this investigation would produce one of two results—either that we should admit that there was more in clairvoyance than we now believed, or that he should confess that he had to deal with an impostor in George Goble.

Taught by the experience of the previous trials, we prepared ourselves better for this. We had proved the insufficiency of mere wax to obstruct George's irresistible vision, or to prevent cavil as to the mode of its exertion; we resolved, therefore, to carry with us boxes which could not possibly be opened without absolute fracture, and into which, in their complete state, the ordinary sight of mere mortal man could not penetrate. Reading the words inclosed in these, would, therefore at once establish, what is called clairvoyance; while the failure to do so, would, at least, confirm our doubts and suspicions as to the powers and honesty of the seer. But we were desirous to go further than this; and to establish, if possible, not merely George's failure—the negative of non-success, but the positive fact of his rognery (for such we deemed it) and the mode of its operation. And the ingenuity of Dr. Sharpey enabled us to do so very effectively. He formed his trap as follows: selecting George's favourite subject, a card-

case—which, according to Mr. A. B.'s report, had been, in his hands, almost invariably the medium of triumphant success,—Dr. Sharpey prepared it in the following manner. He took a blank card fitting the case, pasted on one side of it the word to be read, and then affixed along the end of the other side a small shelf or ledge exactly filling up the space left between the card and the opposite side of the case. Placing the card, thus armed, within the case, he piled upon the ledge at the bottom, a series of long and narrow slips of cork, neatly cut and accurately yet loosely fitting the space unoccupied by the card. The effect of this arrangement was, that any withdrawal of the card would inevitably draw out and let fall the loose slips of cork supported on the ledge attached to it. The reposition of these slips in their original arrangement was next to impossible; and as their exact number was taken, we had the means of discovering the loss, if any of them should have been made away with, after falling from the case.

First experiment.—George, being mesmerised as before, and declared to be in the proper somnambule condition, one of the same boxes was given to him which he had attempted on the preceding day. This box was composed of very thin deal, 4 inches by 2 in extent, and three-quarters of an inch in depth: it contained a single word in large print, pasted on the bottom, and not covered by any thing. The lid was secured by a single screw, the head of which was let into the wood; this was concealed by a small wax-seal, partly for the purpose of preventing any attempt at unscrewing, and partly to conceal from George the impracticable character of the task set him. We had seen, on the previous day, that he got out of a difficulty which he felt to be insuperable, by waking up into mere human potency, to the wonderment and dismay of his patrons. On the present occasion, the box, bearing no more outward semblance of impracticability than the one he had *seen into* on the previous day, was taken at once, and subjected to all the usual manœuvres and manipulations, and with more apparent energy and vigour than ever. We looked on, with the utmost patience and tranquillity, for the space of one whole hour! From the obvious action of the muscles of the arms while George's hands were under the pillow with the box, from the sounds occasionally issuing from the hiding-place, from the uniform increase of the physical efforts to pluck out the heart of our mystery on the occasion of a noisy carriage passing the window, &c.—not a shadow of a doubt remained on the mind of any one present (not even on that of our good friend Mr. A. B.) that George Goble was trying hard

to see into my box, and that George Goble could not succeed. He was, at length, entreated to give up, and try something else. He did so; but in resigning the task he declared that he had seen three of the letters in the box—viz. *O. U. S.* On being questioned by Mr. A. B. whether he had had a mere uncertain glimpse of these letters, or a good positive vision, he repeatedly declared that he had positively seen them, and that they were in the box. Before the sitting broke up, this box was unscrewed, and the word, "EXHIBITION," exposed. It is a rather curious chance that among the ten letters composing this word there should be only *one* of the three seen by George!

Second experiment.—We were all now very anxious that the card-case should be put into George's hands, but were fearful of exciting suspicion by proposing it to him. Very fortunately he himself asked for a card-case, and Dr. Sharpey's was handed to him, with the injunction that he must not open it, and the request of a promise that he would not do so. He gave the promise, but himself proposed that, to do away with all possible suspicion of unfair play, the card-case should be *tyed up*. Nothing was said about sealing it. Accordingly, George himself tied the card-case, in the common cross-fashion, with red tape, assisted by one of our party, who carefully noticed how it was done, the place of the knot, &c. George immediately proceeded to his sofa, and went through all his wonted manœuvres, pressing the case to his forehead, and breathing on it with marvellous energy and unction. He was evidently in better spirits than during the last experiment, and openly expressed his conviction that he should "do it" this time. The *sub-pulvinary* manipulations were, of course, not forgotten, and were closely watched. After a considerable time, and often-repeated strong action of the hands, perceptible through the muscles of the arms, some of our party had a glimpse of the card-case, under the edge of the pillow, *without its ligature*, and of the ligature *without its box*! Soon after, we were struck by the sudden and unusual stillness and tranquillity of George, still prone on his field of action; his hands remained motionless in their hiding-place, his head and face buried in his pillow, and we began to think he had gone to sleep—when lo! we observed him hurriedly and repeatedly putting his fingers to his mouth, as if placing something therein, and, almost at the same moment, we observed some small fragments falling on the floor beneath the sofa, and exactly below the place of the pillow! These proved to be fragments of *cork*—mostly comminuted, but some still bearing the characteristic form and dimensions of those

so ingeniously concealed by Dr. Sharpey in his card-case. Searching under the pillow, we found some more of them, and also detected the *hiatus valde defendus* in the sofa, through which they had found their way to the carpet! The case was now clear; although George made one more effort to deceive us by exposing the card-case above the pillow *still tied by the tape*, and finally by placing it on the floor beneath his master's foot. But our patience was at last exhausted; we laid hold of the card-case, and announcing George's roguery and its detection, we forced still more of the unlucky cork-slips from his hands and from his mouth! Poor George was now fairly beaten—and he knew it; all his cunning and impudence, and all his magnetism, deserted him at once; he woke up in the most natural manner imaginable, without any mesmerising process, and with none of that gentle, progressive unlocking of the senses, exhibited on previous occasions; and throwing himself on his knees on the ground, in an agony of shame and terror, confessed his roguery, and implored forgiveness! In doing so, however, the meek and penitent George, like all other habitual culprits when detected, of course strenuously asserted that this was his *first offence*. It would have been very strange if he had not said so, and it would have been still more strange if any body had believed him. On examining the card-case, we found evident signs of the removal and re-adjustment of the ligature: the tape was all rumpled, and the knot was removed from the end to the middle of the case. The changes in the interior were still more characteristic. Many of the corklets were wanting, some were thrust in irregularly into their original place, and several pieces were wedged in on the opposite side of the card. It was clear that when George began to shake the forbidden tree, he became suddenly aware, by the falling of the apples, that he had got into a confounded scrape, and tried to repair it—partly by returning the tell-tale to their place, and partly by concealing them in his mouth, or swallowing them. But it would not do. It was fated that George Goble's fame as a Great Seer was here to terminate; he had fought his last fight, he had seen his last sight, among honest men; and although I shall not be at all surprised to find him again on the boards with his old itinerant masters, (for he is really a clever though a somewhat clumsy rogue) it is improbable—and doubtless he felt this—that he can ever be again countenanced by any respectable mesmerist, however credulous.

Old Burlington Street,
August 2d, 1843.

P.S. Since the foregoing narrative was written, I have received a communication

from Mr. A. B., inviting me to carry my investigation of George Goble's powers of clairvoyance yet further,—he (Mr. A. B.) still believing, notwithstanding the boy's detected and avowed roguery, that he really does possess those powers. I am quite willing to admit, that although George is a cheat and a liar, it does not necessarily follow that he has never told the truth; and I now profess myself as ready as ever to admit his power of clairvoyance, when this is shown to me under circumstances where deception is impossible. But surely, in the present case, the *onus probandi* rests with the believers in George, and not with me.

I have above stated that, on his detection, Goble waked up from his supposed mesmerised condition. I now learn, however, from Mr. A. B., that the young rogue was *not* then awake, as we supposed, but was subsequently awakened by him in the due mesmeric form! "he awoke, (he says) in an agony of tears, quite unconscious of what had passed, and remains so to this moment!" As there is, as far as I know, no positive test of the mesmeric condition short of the performance of the miracle of clairvoyance; as Goble failed to perform this miracle; as he exhibits during his so-called somnambulism not one discoverable phenomenon which could not have been most readily feigned; and as he presented to us, at the period of his confession, all the ordinary signs of a man awake,—I leave it to the decision of every unprejudiced reader of the foregoing narrative—whether mesmerist or not—which of the two following things is the most probable:—(1) that G. G. was, at any time, in the *bond fide* somnambulant state here assumed by Mr. A. B.;—or (2) that he lyingly pretended to be in this state, and to awake therefrom,—just as he lyingly pretended to see through our boxes; and that Mr. A. B. was mistaken in the one case as in the other.

In the communication above referred to, Mr. A. B. writes of Goble, as follows:—"He admits that he had, *on many occasions*, when he was unable to read by clairvoyance, in his anxiety not to be considered unable to perform it, resorted to the contrivance in which the sagacity of yourself and friends, so cleverly detected him, but *he assures me*, that it was done only occasionally, when the power failed him." *Credat Judæus apella, non ego, J. F.*

[We append to this paper some extracts from the Report of the Academy of Sciences, Paris, dated 1779, for which we are indebted to Dr. T. H. Burgess. As our correspondent remarks, Dr. Forbes's able exposure of this folly is confirmatory of the Report issued nearly fifty years ago, and it shows what a very small advance the so-called sci-

ence of mesmerism has made in half a century!—ED. GAZ.]

Report of the Academy of Sciences, Paris, 1779.

In 1779, a committee was appointed, consisting of medical men and members of the Academy of Sciences; Dr. Benjamin Franklin at their head. Their Report was as under:—

1. They tried the magnetism upon themselves, and felt nothing.

2. Seven of Deslon's patients were magnetized at Dr. Franklin's house; four of whom felt nothing, and three felt or affected to feel something.

3. Several persons in a higher sphere of life were magnetized, and felt nothing.

4. The Commissioners then wished to try what imagination had to do with the business; they blindfolded several of the common people, and made them sometimes think they were magnetized; at other times they magnetized them, without letting them know they did so; the consequence was, that when they supposed themselves magnetized, the patients likewise thought they felt something, and *vice versa*.

5. A magnetized tree was said to produce convulsions; a young man blindfolded fell into convulsions when he imagined himself near the tree, though he was really at a considerable distance from it. Deslon accounted for this on the principle of all trees being magnetic: but in this case, any one susceptible of magnetism would be seized with convulsions when he approached a tree. The same influence of imagination was observed in a woman accustomed to have convulsions when magnetized. They came on when nothing was done to her, on being told when blinded that she was magnetized.

The conclusion of the Academicians concerning it was:—That it was not entirely useless to philosophy, as it is one fact more to be consigned to the history of the errors and delusions of the human mind, and a signal instance of the power of imagination!

Mesmer refused to attend before the Commissioners, but his principal pupil, Deslon, explained the principles of his art as under:—

1. Animal magnetism is an universal fluid; the medium of mutual influence between the celestial bodies and the earth and the animal bodies. 2. The most subtle fluid in nature capable of flux and reflux, of propagating, receiving, and continuing all kinds of motions. 3. Animal bodies are subjected to its influence by means of the nerves which are immediately affected by it. 4. The human body has poles and other properties analogous to the magnet. 5. The action and virtue of animal magnetism may be communicated from one body to another

whether animate or inanimate. 6. It operates at a great distance without the intervention of any body. 7. It is increased and reflected by mirrors; communicated, propagated, and increased by sound; may be accumulated, concentrated, and transported. 8. Notwithstanding the universality of this fluid all animal bodies are not equally affected by it; on the other hand, there are some, though few in number, the presence of whom destroys all the effects of animal magnetism. 9. By means of this fluid, nervous disorders are cured immediately, and others mediately; and its virtues extend to the universal cure and preservation of mankind!

TREATMENT OF INSANITY IN THE FIFTEENTH CENTURY.

IN 1453, Henry the Sixth, who appears to have suffered from a tendency to inflammation of the brain, was seized with one of those alarming attacks of insanity to which his grandfather, Charles VI. of France, was subject. A medical commission of five physicians and surgeons was appointed by the Duke of York and his Council, to attend on the person of the king, and to watch over his health. The date of this commission (Rymer's *Fœdera*) is April 6th, and empowers those beloved masters, John Arundel, John Faceby, and William Hacliff, physicians, and Robert Warreyn, and William Marschall, surgeons, to administer to the king, at their discretion, electuaries, potions, and syrups, confections and laxative medicines, in any form that might be thought best; baths, fomentations, embrocations, unctions, plasters, shavings of the head, scarifications, and a variety of other inflictions in the way of medical treatment. John Faceby was the favourite physician, who had attended Henry all his life. The king granted a pension of £100 per annum to him at the time of his marriage with Queen Margaret, as the reward of his faithful services. From the same authority we find that the court dress of the king's physician was a green cloth robe and miniver cap. There is in the Patent Rolls of 1454, an order under the privy seal, dated November 12, granting to a physician of the name of William Hately, in consideration of his faithful services to King Henry, and at the earnest desire of Queen Margaret, an annuity for life. This physician's name is not, we observe, included in the medical junto who had been appointed by the authority of the Duke of York's Council to attend on the sovereign, but was probably introduced by the anxious solicitude of his queen; and as Henry's convalescence took place about this time, we can have little doubt of his being indebted to the skill of William Hately for his cure.—*Lives of the Queens of England.*

ON "RADIATED" OR
"SECONDARY" SENSATIONS.

By DR. CHILD,

Physician to the Westminster General
Dispensary.

In Müller's Physiology (page 697,) the reader may observe the following passage — "Occasionally it happens that one sensation excites another, or that sensations in disease extend to parts not actually affected." By Müller, such sensations are termed "Radiated."

Dr. Williams, also, in his excellent "Principles of Medicine," has given numerous examples of the same kind of action, under the head of "Reflected or Sympathetic Sensations." For instance, he has mentioned pain in the right shoulder-blade, from congestion of the liver; sudden headache, from eating ice, &c.

The student will at once understand the position of "secondary," among the other varieties of sensation, by casting his eye over the following brief arrangement of them:—

1. Special sensation, as hearing, seeing, &c.

2. Common sensation, as when the skin is pinched. The sensation being referred, by the brain, directly to the part irritated.

3. Secondary sensation — indirect, radiated, &c. When the sensation is referred, by the brain, not to the part primarily irritated, but to some distant organ. As examples I may allude to those just quoted from Dr. Williams's work.

The first and second classes obviously include all sensations seated in the brain; radiated sensations, therefore, do not differ from them in kind, but only in the mode by which they are excited. In fact, secondary sensations are either "special" or common" according to the quality of the nerve secondarily involved. On the whole, radiated "special," are far less frequent than radiated "common" sensations.

The following paper is not offered as a complete account of these sensations—materials for such a purpose do not as yet seem to have been collected. My object is simply to illustrate the subject a little farther, and

to notice several questions connected with it.

This class of sensations is, of course, no new discovery by Müller, for, as they occur in nearly all diseases, they have been known to careful observers in every age. The subject, however, has been too much neglected, partly, perhaps, on account of the little use that could be made in practice of signs apparently so irregular and anomalous. Indeed, with the exception of a few well-known secondary pains, they seem more calculated to perplex the practitioner than lead him to the distant organ primarily affected. From this cause it sometimes happens that the primary disorder is masked or entirely overlooked, if not by the attendant, at all events by the patient himself. It is no rare thing, for example, for the dyspeptic to seek advice for a tormenting headache, quite unconscious that an unsound state of the gastric nerves is the sole origin of it. This mistake is sometimes clearly shown by the impatience he exhibits when required to enter into minute details about *digestion*, with which, as it appears to him, there is nothing wrong; and over and over again he calls the attention of the practitioner back to the head, as the only part for which remedies are needed.

There are already some cases where secondary sensations are of acknowledged service to the practitioner, affording him evidence of disorder in a distant organ as sure as if the pain had been directly referred to it; nevertheless, as a general rule, it must be admitted that, for the purpose of diagnosis, they are less trustworthy than sensations which are direct. The question, however, is well worth inquiry, whether the eccentricity with which they occur be real or only apparent. The number of anomalous phenomena is found to diminish in every science in proportion as our acquaintance with it extends; and in physiology more especially, it would be no new thing for us at length to discover a meaning and a regularity of action in what, with less knowledge, we deemed anomalous. Experience of this kind would have a wide range of application, because while few diseases are altogether destitute of secondary pains, there are some of which they may form the only kind of pain present: in illustration I

may refer to uneasiness about the shoulder in disorder of the liver. It is obvious, therefore, that if we understood the laws by which these sensations are governed; or failing this, if we could amass a sufficient number of facts to prove the constant or even general occurrence of pain in one particular organ from disorder of another at a distance, we should add materially to the readiness and precision of our diagnosis.

So far as our knowledge of secondary sensations carries us, we continually apply it in practice. On this principle, the physician recognizes a sign of disordered liver, in pain about the shoulder,—or of a heart affection, in certain pains of the arms, &c. The surgeon, on the other hand, suspects stone in the bladder, from pain at the point of the penis; disease of the hip-joint from pain in the knee; an injury of the spinal marrow after accidents, from pain in the legs, &c. If, then, some of these secondary sensations are so well understood that they have become available to the physician and surgeon, it may be fairly inferred that a closer observation will give to others, now appearing obscure, a meaning equally significant and useful. The study of these sensations as a class—now in its infancy—may yet become an important branch of medical inquiry.

The sensations I am referring to have received various names; they have been called sympathetic, radiated, reflected, transposed, "nervous," and secondary. None of these are free from objection, but as the whole subject now stands—that is, *sub judice*—I prefer the last, because it simply expresses the fact, without involving any theory. It is not meant that the "secondary" sensation necessarily follows another sensation elsewhere; but it follows an irritation elsewhere which, with reference to it, is called "primary." Of the other terms, "sympathetic" implies an analogy or identity with what may, after all, be strictly limited to the operations of mind, and it is difficult even to imagine how sympathy, an attribute of mind, can, independently of it, become a principle of action between distant parts of the body. Resting on the well-known fact that *mental* suffering arises from sympathy, it has been assumed, by a kind

of rough reasoning, that corporeal pain springing from irritation in a distant organ must be from sympathy also. The term, however, although sanctioned by antiquity, becomes more unsatisfactory every day, and it will probably be less employed in proportion as the various forces and causes of action are better understood. I am not quite sure, even, if its employment be free from harm; for it may continue to blind us, as it has done our predecessors, to the poverty of our knowledge on the subject.

Many secondary pains, in hysterical or feeble persons, go by the name of "nervous;" and I believe the meaning generally attached to this rather indefinite expression is, that the pain is neither inflammatory nor dangerous. But besides this, the patient, oftentimes a female, usually gleans that she is not to expect very much attention to it from her medical attendant, or sympathy from her friends. It is, I suppose, on account of this hardship, that patients do not always seem to relish having their pains pronounced "only nervous;" they evidently suspect that credit is not given to them for all they suffer. But in this place I need only remark, that as sensations of every kind are necessarily "nervous," it is obviously wrong to restrict the word to one particular class of them only.

The objection to "radiated" or "reflected" is not from any vagueness in the term, which means that when the impression from the part primarily irritated has reached the brain, it is radiated or reflected upon the nerve secondarily involved. This plan of operation is at least tangible and clear, but unfortunately it is far from being proved. Under these circumstances it would be our wisest course to abstain from stamping a class of sensations with a name for which subsequent discovery might show they were ill suited.

I shall occupy the remaining part of this paper in considering the different theories respecting the nature of secondary sensations, and the causes which appear to favour or excite them.

The opinion that sympathizing organs were connected together by nervous anastomosis, prevailed for a long time. In many instances it seemed to be confirmed by dissection; and if, on other occasions, the anatomist failed

to detect an exchange of nerves between the parts, it was passed over as due rather to the difficulty of tracing it, than to the real absence of anastomosis. This explanation, however, became untenable when the microscope shewed that no true anastomosis of nerves, corresponding to what we observe in bloodvessels, exists; and that the union of nervous twigs into branches and trunks serves a purpose very different from, and far less important than, what at first sight it seemed to denote. The trunk consists simply of bundles of nervous fibrillæ or tubes proceeding from the brain or spinal marrow to the organs where they are to be distributed, but there is no union between these fibrillæ, which run their course perfectly distinct and isolated from each other. If, therefore, various nervous twigs unite into one branch, it is merely to facilitate their transmission through the different tissues. Their route happens to be the same, and they are packed up in a common envelope, but when the fibrils have reached the place where their final destination requires them to separate, they pass off from each other exactly as if they had never been in juxtaposition.

According to another theory, secondary sensations are referred to a distant part, in consequence of some peculiarity in the impression made on the brain by the nerve primarily irritated. This opinion, however, is not only without proof, but improbable, and it merely assumes the existence of a peculiar power in the brain for the purpose of meeting a physiological difficulty. According to this hypothesis, there is in fact no "reflection;" the only parts concerned being the brain and the incident nerve.

But, in the present day, the theory which has nearly superseded all the others is that of "radiation or reflection." After the laws of reflex action with respect to motor nerves had been so ably and beautifully illustrated by Dr. Marshall Hall, it followed almost as a matter of course that they should be applied—*mutatis mutandis*—to certain sensations which, with reference to their mode of development, seemed nearly analogous. According to this view, then, the impression conveyed by the nerve primarily irritated to the brain is reflected on the nerves going

to the parts said "to sympathize." For example, when pain of the forehead is caused by eating food which irritates the stomach, it is implied that the *nervus vagus* carries an impression to the brain which is reflected on the frontal branch of the fifth pair.

But, admitting that an impression is *reflected*, nothing is positively known respecting the limit to which the reflection extends; and some who either deny or doubt if sensations, or rather the action in nervous tubes causing them, can be propagated in a centrifugal direction, have smoothed over the difficulty by pointing out the well-known fact, that it matters little what part of a nerve is irritated, as the consequent sensation is referred to the place where that nerve is at last distributed. If, for instance, a blow be received on the trunk of the ulnar nerve at the bend of the elbow, it is felt less in that situation than along the inner side of the fore arm and hand to which the nerve proceeds; and we observe the same mode of action, if, instead of the trunk, the root of the nerve, or that part of the brain or spinal marrow connected with it, be irritated. Hence, in disease or injury of the medulla spinalis, the pain is often referred to the upper or lower extremities, to which the nervous fibrils contained in the part of the spinal marrow affected are distributed.

From these facts, then, it appears that the result is the same, whether the reflection stop at the root of the nerve, or pass on to its trunk or ultimate branches. I shall soon have occasion to point out some circumstances rendering the last of these suppositions the more probable.

Assuming that nervous influence is *reflected*, we have nothing beyond conjecture as to the mode in which the reflection takes place—how the action is handed over, as it were, in the brain, from one nerve to another. The more common opinion, perhaps, is that it is effected by means of the ganglionic globules found abundantly in the grey substance of the cerebrospinal and ganglionic system, (Gerbers' Anatomy, by Gulliver, p. 266). I may be allowed to remind the student, that the grey substance alluded to consists essentially of the ultimate nervous fibrils already mentioned, with ganglionic globules and granules inter-

spersed: now it has been supposed that these globules form the medium of transference.

From some observations by Valentin, Carus, and Klencke, (Report on Results obtained by the Microscope, by Mr. Paget, 1842), it is probable that nervous fibrils form loops, both at the periphery and at the centre; and, if this were to be confirmed, another solution of secondary sensations would naturally be suggested. According to the previous theory, the influence is supposed to cross from one fibril to another; in this, it might be propagated by continuity. But to make my meaning clear, I must mention a few points in the anatomy of nerve.

When I stated that the ultimate nervous fibres never unite, the expression was not, perhaps, altogether correct; it applies to them in its full force, during their course from the brain to the periphery only. In describing their peripheral termination, we may say either that the fibrilla coming from the brain unites with a fibrilla going back to it again—as a capillary artery unites with a capillary vein; or that each ultimate nervous tube, having reached the periphery, forms a loop, like a thread doubled upon itself, and then returns to the brain. In either case there is no ending of the fibrillæ in the organs where they are distributed, any more than there is of capillary blood-vessels; in fact, the nerves are as continuous at their periphery as at any part of their course. Now, if the researches of Valentin, &c. should be confirmed, it would then appear that at the other or (so called) central termination of the nerves, there is an exactly similar arrangement; the fibrillæ entering the brain, forming loops, and again proceeding from it. If this be really true, it seems to me not improbable, that in some reflected sensations, the fibre primarily irritated may, after forming a loop in the brain, be prolonged without break into the organ secondarily affected; thus offering a direct, or at all events a continuous connection between the two "sympathizing" organs.

Physiologists agree that an impression travels along an incident sensory nerve to the brain, within which, it is thought, the reflection takes place; and, judging by exciting causes and

effects, the action is probably of the same kind, whether it be limited to the comparatively small circle of two neighbouring organs sympathizing with each other, or involve every part of the body in an universal secondary sensation; as happens, for example, when a disagreeable impression on the *portio mollis* produces a general thrill or feeling of shuddering. The theories as to the mode of communication in such cases resolve themselves into two—either there is a traversing across of the nervous influence or impulse from one fibril to the other, or from one part of the brain to another; or it is conducted along a continuous chain. The ultimate nervous fibrils or tubes have never, so far as I know, been seen to end; and, consequently, although the channel is a long one, there may be no limit to the direct connection by continuity between the different organs of the body.

It becomes a question of practical importance to decide if the *sensation merely* be radiated, or if some degree of *irritation* also pass to the part secondarily affected. If the latter view prove correct, we obtain a new indication for treatment, because, as a substantive disorder, these sensations demand on their own account the special use of remedies, which, as mere nervous indicators of disease elsewhere, they might hardly appear to require.

That irritation, as well as sensation, is radiated, appears probable for several reasons.

1. Sometimes the parts secondarily affected show *unequivocal signs of irritation*: they are tender to the touch, or even swollen and inflamed, exactly as if an irritant had been directly applied. We see this in the mamma, when the uterus is in a state of irritation, and occasionally also in the integuments covering the sternum, and in the scalp or face during the course of dyspepsia; also, perhaps, when the ingestion of certain substances into the stomach excites eruptions on the skin. At other times, when the part secondarily involved is a secreting gland, its function is augmented just as if an irritant had been applied: we observe this to be the case with the salivary and lachrymal glands in indigestion.

2. The opinion is strengthened by the circumstance that secondary sensations excited by "common" nerves

are often "special," as, for example, when a person sees objects or hears noises from indigestion. Special sensations of course cannot originate in the stomach, or depend on an action limited to the nerves of that organ and the part of the brain connected with them, for this would be admitting that the eighth pair becomes at times a nerve of seeing—wherein is implied that "transference" of the senses which is the basis of mesmeric clairvoyance. We know, on the other hand, that a nerve is not capable of conveying any impression to the brain except *the one* which excites its peculiar function, whether that be special or common. Thus the nerve of light only sees, the nerve of hearing only hears, whatever may be the kind of irritation applied, and hence, although pressure on a common nerve produces ordinary pain, it can excite no other sensation than that of light, if made on the optic nerve. When, therefore, spectra are seen from irritation of the nerves of the stomach, the action cannot be limited to these nerves and the part of the brain connected with them, for the reasons just explained; but the "common" irritation, by passing on to the optic nerve, excites the only impression of which it is susceptible—the result being the production of spectra. The irritation in passing from the one nerve to the other converts the sensation from "common" into "special."

3. The opinion that the part secondarily involved is in a state of irritation is favoured also by the effects of anodynes or other remedies used topically, by which these pains are assuaged. If the pains were due merely to some peculiarity in the action of the incident nerve upon the brain, in consequence of which a *sensation* alone was referred to the distant part, the applications alluded to, being made beyond the sphere of the action, would be comparatively useless. It might, indeed, be objected that anodynes used even topically must have a general effect in lulling pain; but this does not apply to the cases in question, for, when the same anodynes are used to parts at a distance, relief is obtained either incompletely or not at all. The fair explanation of their greater efficacy in the one place than in the other is, that they are there applied more directly to the irritated nerves.

4. In a subsequent part of this paper it will be shown that secondary sensations are much favoured by an unsound state of the peripheral portion of the secondary nerves. It is difficult to conceive how this could so operate, unless an impression or irritation did actually reach and act upon the unsound nerves themselves.

5. The continuance of a secondary irritation is by no means always limited by the subsidence of the primary disorder—for example, a stomach cough, or a distressing noise in the ears, first appearing as a symptom of dyspepsia, may persist obstinately after the nerves of the stomach have resumed their healthy action. Here, at least, irritation has passed upon the part secondarily involved, and continues quite independently of any primary disorder. Sometimes the irritation terminates in serious chronic disease; at least, I am disposed to regard hydrocephalus as occasionally of this nature, when it occurs, for example, in children during the course of enteric disease. Perhaps, also, I am not wrong in regarding, as the effect of radiated irritation, those sudden and rapidly fatal attacks in the head described by Andral, Marshall Hall, and Langston Parker, as coming on sometimes during disease of the stomach and bowels.

[To be continued.]

OBSTETRIC REPORT OF CASES

OCCURRING IN THE PRACTICE OF THE

Infirmary of St. Giles and St. George, Bloomsbury, and of the Northern Dispensary,

During Three Years ending April 30, 1845.

BY JAMES REID, M.D.

Physician to the Infirmary of St. Giles and St. George, Bloomsbury; Physician-Accoucheur to the General Lying-In Hospital, and to the Northern Dispensary.

THE only variation which exists in the present report, as compared with my former ones, is the addition of about 300 cases which occurred in the practice of the Northern Dispensary, and in nearly the same class of patients.

The number of women attended in their confinement during the above period, amounts to 1771, which, added

to that of the last report, (3920), will give a total of 5691 cases.

In the 5691 cases the following presentations of the infants occurred:—

The Vertex presented		in 5443	
Nates, or lower extremities		in 162 or 1 in	35
Shoulder or arm		in 29	" 196
Face		in 25	" 228
Funis		in 31	" 183
Abdomen		in 1	" 5691
Convulsions occurred		in 11	" 517
Retroversion of uterus		in 2	" 2845
Rupture of uterus		in 2	" 2885
Placental presentation		in 8	" 711
Accidental flooding before the separation of placenta		in 32	" 178
Flooding after	" " " "	in 40	" 142
The placenta required manual extraction		in 58	" 98
Patients delivered by Forceps		in 31	" 183
" " Craniotomy		in 22	" 259
" " Version		in 28	" 203

* *Spontaneous Doubled Expulsion* of the Infant occurred in 2 cases (both twins)

Of the 1771 cases comprised in the present report, 1795 infants were born, of which 886 were males, and 909 females. There were 24 twin cases. 191 infants were *still-born* (105 males, 86 females)—a very large proportion: but of these, 88 were prematurely expelled before the seventh month of gestation; the proportion of still-births may, I think, be partly accounted for also, by considering the irregular and dissolute life followed by many of this class of females, and the rough and brutal treatment to which some of them are subjected, even during advanced pregnancy, by their husbands and paramours.

Ages of the 1771 Mothers.

Under 20		69
Between 20 and 25		622
25 " 30		478
30 " 35		368
35 " 40		174
40 " 45		54
45 " 50		6

1771

In the 1795 infants

The Vertex presented in		1709
Nates	"	39
Feet	"	22
Knee	"	3
Face	"	8
Arm	"	6
Hand and Foot		1
Hand and Head		7

The Vertex presented in 18 of the First, and in 7 of the Second infants.

Nates	" 2	" First,	" 9	" Second
Feet	" 4	" First,	" 7	" Second
Arm	" —	" First,	" 1	" Second

Funis with Head (<i>s. b.</i>)		3
" Foot (<i>1 s. b.</i>)		3
" Knee (<i>living</i>)		1
" Abdomen (<i>s. b.</i>)		1*
Placenta at os uteri in		4 (2 par-
Convulsions occurred in		2 tially)
Laceration of the Uterus in		1
Retroversion of Uterus in		1
Spont. doubled expulsion of Infant		1
Hæmorrhage before delivery		
of Placenta		5
" after	"	8
Placenta requiring manual		
extraction		20
Induction of premature labour		1
Lingering labour (beyond 24 hrs.)		92
Patients delivered by Forceps		6
" " Craniotomy		5
" " Version		3

* In the case of *presentation of the abdomen* (a very rare occurrence, so much so, in fact, as to be denied by some writers), the insertion of the funis in the abdomen was distinctly ascertained at a short distance from the os uteri. It was converted into a footling case without much difficulty. (See Table, next page.)

Thus, of the 48 twins 21 were males and 27 females; and 9 (4 males and 5 females) were still-born. Of these, however, 4 were prematurely expelled.

In 4 cases, both children were males, in 8 cases, both children were females, and in the remaining 12 cases, there was one of either sex.

* I have not retained the term originally employed by Denman, which is now admitted to be erroneous, but have ventured to employ a novel one: that proposed by Dr. Douglas, viz. "*Spontaneous Expulsion*," though more correct than Denman's, scarcely indicates the nature of the case sufficiently, as ALL cases of natural labour might claim the same title.

The following Table gives the result of the 24 TWIN CASES.
(Proportion, 1 in every 74 births.)

	SEX.		Living and Still-born.	First Presented.	Second Presented.	Interval between the Births.	
	1st.	2d.					
1	F.	F.	1st living, 2d s. b.	Vertex	Foot	1 hour	
2	M.	M.	Both living	Vertex	Foot	$\frac{1}{2}$ hour	
3	F.	M.	Both living	Vertex	Foot	$\frac{1}{2}$ hour	
4	M.	F.	Both living	Vertex	Nates	1 hour	
5	F.	M.	Both living	Vertex	Foot	$\frac{1}{4}$ hour	
6	F.	F.	Both living	Nates	Vertex	$\frac{1}{2}$ hour	
7	M.	F.	Both living	Vertex	Nates	$\frac{1}{4}$ hour	
8	F.	F.	1st s.b., 2d living	Foot and Funis	Nates	$\frac{3}{4}$ hour	
9	F.	F.	Both living	Vertex	Nates	$\frac{1}{4}$ hour	The first, a very large *At 8th month [infant. Premature: in 6th † [month. 2d time this patient has [had twins.
10	F.	F.	Both s. b.	Feet	Nates	$\frac{1}{2}$ hour	
11	F.	F.	1st living, 2d s.b.	Feet	Nates	10 hours	
12	M.	F.	Both living	Vertex	Vertex	$1\frac{1}{4}$ hour	
13	M.	F.	Both living	Nates	Nates	1 hour	
14	M.	M.	Both living	Vertex	Vertex	$\frac{1}{4}$ hour	
15	M.	F.	Both living	Feet	Feet	$\frac{1}{2}$ hour	
16	M.	F.	Both living	Vertex	Vertex	1 hour	
17	M.	M.	Both living	Vertex	Arm	2 hours	
18	M.	F.	Both living	Vertex	Nates	$\frac{3}{4}$ hour	
19	M.	F.	Both living	Vertex	Nates	$\frac{1}{2}$ hour	
20	M.	F.	Both living	Vertex	Vertex	$\frac{1}{2}$ hour	
21	F.	F.	Both living	Vertex	Vertex	$\frac{1}{4}$ hour	
22	F.	F.	1st living, 2d s. b.	Vertex	Vertex	10 min.	
23	F.	M.	1st living, 2d s. b.	Vertex	Foot	15 hours	
24	M.	M.	Both s. b.	Vertex	Foot	10 min.	

*In the 8th case one of the infants survived its birth only three hours; the other 24 hours.

†In the 11th case an unusual circumstance occurred. The first infant was born at 3 P.M. on the 23d of November, and flooding soon after took place to a very considerable extent: the midwife becoming alarmed at the condition of the patient, sought the assistance of a gentleman in the immediate neighbourhood who has had a large experience in obstetric practice, as I happened at the time to be some distance from home. On his arrival, finding the patient fast sinking from the continued loss of blood, he immediately passed his hand up into the uterus, and extracted a large portion of the placenta (but not the whole of it) without being aware that a second infant was still within the womb. Cold vinegar and water-cloths were applied externally, and the hæmorrhage very *fortunately* was soon arrested. After some time, the patient was placed properly in bed, and as she had rallied again from the effects of the hæmor-

rhage, the midwife took her departure about 5 P.M., leaving her in charge of her friends. In the morning of the 24th, the patient was attacked by a recurrence of strong pains, which much alarmed her; the midwife was again sent for, and, on her arrival, she found, to her great surprise, that a second child had been expelled. A small portion of placenta followed soon after, and the patient happily recovered without any untoward symptoms.

This case appears to me to bear favourably on the proposition of Professor Simpson, of Edinburgh, viz. that in cases of presentation of the placenta over the os uteri, it may be removed from the womb previously to the extraction of the child, without so much risk as by the usual method heretofore employed. In the foregoing case it will be observed, that a small portion of that substance was left attached to the inner surface of the uterus.

‡In the 23d case, after the birth of the first child in the morning, an assistant-midwife who attended the patient, though aware of the presence of

a second infant, afforded no assistance until the evening, when, finding that pains did not recur, she at length sent for further advice. On rupturing the membranes, pains soon came on, and a still-born child was expelled.

Observations.—Two children were born in the street, the mothers being at the time on their way to the Parochial Infirmary.

One woman had had preternatural presentations of the infant in each of her four labours.

Some of the patients had borne their children prematurely, in six and seven successive pregnancies.

One woman had been married 18 years before she became impregnated.

A patient, æt. 22, was admitted into the Lying-in ward, supposed to be in labour prematurely, having suffered during the two previous days from paroxysms of severe pain, recurring at intervals of a few minutes, not unlike labour-pains in their character, and attended by a slight sanguineous discharge. I was requested to visit her, and, on careful examination, could distinguish no signs of pregnancy; but there was evidently some malignant affection of the womb, her countenance also bearing that peculiar aspect so generally attendant on organic disease.

She was removed into one of the sick wards, and, after suffering intensely for some months with all the symptoms of cancer of the womb, she sank under the disease. On making a post-mortem examination, it was found that that organ had been partially destroyed at the fundus by melanosis, which had also implicated portions of the neighbouring organs.

CASE I.—Arm presentation; twin case; spontaneous doubled expulsion of second child, which survived.

Jan. 29th.—Mrs. C., a patient of the Northern Dispensary, residing in Broad Street, Bloomsbury, and pregnant with her third child, expected to be confined at the end of February. Labour, however, commenced on Jan. 29th, at 1 o'clock A.M., induced, she says, by a fright; but the uterine action continued feeble until 6 o'clock, when two or three strong forcing pains came on in rapid succession, and expelled a living male child, the vertex having presented. Mr. Cowburn, who had charge of the case, on pressing the

abdomen externally, found that it was still much enlarged, and of firm consistence, and, by an examination per vaginam, ascertained that there was a membranous pouch at the further extremity of the passage. As slight hæmorrhage had supervened, he requested Mr. Powell, of Great Coram Street, to see the case with him, and as the latter gentleman, on making a more careful examination, thought that he could discover a hand within the bag of membranes, he immediately sent for me.

I saw the patient at 8 o'clock (two hours after the birth of the first infant), and found that there was still a slight hæmorrhage continuing, but no uterine contractions had returned. As the presentation of the child was evidently that of the hand, I bared my arm, and prepared to turn, but was foiled in attempting to rupture the membranes by the usual method, owing to their unusual rigidity and thickness, especially as the pressure against them caused much pain in the abdomen of the woman: with a pair of scissors, however, I pierced the bag, when a very large escape of liquor amnii took place through the aperture, which did not enlarge until I introduced two fingers into it, and thus widened it.

Whilst commencing to pass up my hand, a very strong expulsive pain came on, and the left hand and arm of the infant were forced down, with its shoulder at the pubes of the mother. As the body of the child was at the same time felt low down, and the perineum distended by it, I withdrew my hand, thinking it not unlikely that this might prove a case of spontaneous doubled expulsion, especially as it was a twin case, and at the 8th month of gestation only. After the lapse of a few minutes, another very forcible pain occurred, and as we carefully watched its effects, we saw the breech of the infant thrust down with the left hip most advanced, the birth soon being completed by the expulsion of the head: during the whole of this process, the hand and arm remained quite stationary, with the shoulder under the pubes as at first, and not withdrawn during the passage of the nates. The infant, a male, was alive, and both children were still living about three weeks afterwards, when I made inquiries. Slight uterine contraction

took place a few minutes after the expulsion of the second child, and the placentæ, which were attached to each other for the space of $1\frac{1}{2}$ inches, were then removed.

This case is similar to that which I inserted in a former report (*vide* MED. GAZ. 1842.)

CASE II.—*Serious deformity of Pelvis ; induction of premature labour.*

Dec. 21st, 1842.—Mrs D., æt. 40. I have formerly had occasion to describe the labours of this patient more than once, owing to her unfortunately having an extremely distorted pelvis. The perforator and crotchet were had recourse to in her two first labours at the full time; and premature labour has twice been induced by artificial means, but not with success, the infant in both cases being still-born. In the last labour the breech presented, and although gestation had only proceeded to the seventh month, the head could not be released until I used the forceps.

In her present pregnancy she dated from the 7th of May last, as the catamenial discharge ceased on that day: the movements of the child were first distinguished on Sept. 17th.

On the 7th of December, therefore, (the supposed 7th month,) with the view of inducing premature labour, I administered ʒss. of powdered *Secale Cornutum* every hour till ʒij. were taken, but no apparent effect was produced, although I had, from previous use, no reason to doubt the activity of the medicine. On the next day she took ʒj. doses of the tincture every hour until ʒj. was consumed, but still no contractile efforts of the uterus followed. The same quantity was taken on the succeeding day, but without success; and ʒij. of the fresh powder being again tried on a subsequent day, in ʒss. doses, without effect, I, on the 14th, punctured the membranes, but with somewhat more difficulty than on the two last occasions, as the os uteri was very high up in the vagina. A large quantity of liquor amnii escaped, and continued to do so daily, but no labour-pains came on until the 20th, although three ʒj. doses of the powdered ergot had again been given in the interim: slight pains continued through the night, but they increased in strength on the morning of the 21st; the midwife was sent for at 2 A.M., and the

infant was born at 4, the vertex fortunately presenting this time. Partial asphyxia, however, was caused by the pressure on the head during its passage through the distorted pelvis, but it was soon relieved by the usual means. The child was apparently about $7\frac{1}{2}$ months advanced in foetal life, was strong and healthy, and it is still living at the date of this report. Out of ten pregnancies it is the first child born alive. It will be observed, that within a few days the mother had taken ʒj. of powdered ergot, and ʒij. of the tincture, and yet the child was unaffected by it, and born alive: this militates somewhat against the theory "that children still-born after the exhibition of ergot in labour, have lost their life owing to some *poisonous influence* exerted on their system by the drug through the agency of the maternal circulation." It appears much more probable, if the ergot does interfere in some cases with the vitality of the fœtus, that the almost constant, though irregular contraction of the uterine fibres on it, produced by the medicine, will account for death taking place by asphyxia. I may again observe, that the ergot used on this occasion was the same as I had employed on other occasions with good effect, and it had not, therefore, lost its peculiar qualities.

CASE III.—*Rupture of the uterus.*

May 20, 1842.—B. W., æt. 32, a short stout woman (the seventh of twenty-one children), has been married nearly nine years, and has already borne five children. She has generally enjoyed good health, but since her last confinement has frequently complained of pain in her right side, and has not been so strong in other respects as formerly; she has lately also led a very irregular life, and has been in the habit of drinking freely. On account of the pain and other troublesome symptoms, she had been under treatment, as I understand, at the Northern Dispensary for some weeks past. She has suffered from acute pain in her right side and back since the 16th, but uterine contractions did not commence until 3 A.M. of the 20th; these continued increasing in strength and frequency, and at half-past 6 A.M. she sent for the gentleman who was engaged to attend her. On his arrival, he found the os uteri di-

lated to a size rather larger than that of a shilling, the vertex was presenting, and the pains recurred at intervals of ten minutes: the membranes were ruptured soon after this, and on again making an examination, the head of the child was still found in the same position, but in the course of half an hour, on examining, the head had receded, and could not be reached by the fingers. The patient afterwards told me that between these two examinations, and during a pain, she had felt a sudden cramp, or something snap, with a sensation of tearing, and that she had distinctly *heard* it at the same time, but this she did not mention to her medical attendant at the time: as the latter did not notice any difference in the character of her complaints, he did not pay more particular attention to them than previously. The patient has since explained that it was the frequent returns of a sensation of cramp, or *twinging*, attended by an effort to strain, which caused these complaints, and not regular labour-pains: they gradually diminished in force, and at half-past 8 A.M. ceased altogether. The gentleman in attendance felt surprised that during these pains the head made no advance, but as the patient was rather faint, and had no inclination to sleep, he ordered her a table-spoonful of brandy in some water, and she then *slept tranquilly for three hours*. On awaking, she was assisted out of bed, and relieved the bladder, and this she again did in the course of two or three hours afterwards, complaining, however, of tenderness over the abdomen, but not to any considerable extent, and at 5 P.M. seemed better in every respect, more cheerful, and the pain or *stitch* came on but seldom. As the bowels had not been relieved properly for some time, a dose (3vj.) of castor-oil was administered. Soon after this, she was seized with much more severe pain, and at length the medical attendant sent to request the attendance of Mr. Powell. On the arrival of the latter gentleman, he found the patient suffering severely from the pain in the abdomen, and she now for the first time mentioned the sensation of laceration which she had experienced in the morning. He immediately recommended that I should be sent for, and gave a very

unfavourable prognosis as to the life of the patient. When I arrived, I found that pain was increased all over the abdomen on the slightest pressure, and the patient could not lie on her right side: her pulse was strong and full, at 94 beats in the minute; and her skin was hot and dry. She had not been sick, did not complain of debility, and her voice was firm and loud. On examining per vaginam, no portion of the fœtus could be reached by the finger, and a very slight sanguineous discharge was perceptible. On questioning the patient closely, she stated that at the moment when she felt and heard a sort of snap during a pain, it was attended by a sensation of some substance falling down at the lower part of the belly, and that all movements of the fœtus ceased after this period.

As it appeared that a fatal termination in this case was threatened more from the effects of inflammatory action than from any exhaustion, I recommended that bleeding from the arm should be had recourse to immediately, and that an anodyne dose of Tr. Opii should be given, fomentations applied to the abdomen, and the patient not to be moved until I should see her again for the purpose of turning the child and delivering. After the bleeding, the patient seemed easier for a time, but the pain soon recurred, with increased tenderness of the abdomen, the pulse becoming quicker at the same time. I was again sent for, and on proceeding to pass my hand up into the uterus, found the head low down at the posterior portion of that organ, and evidently partly escaping through a rent at that place; a foot was reached without carrying my hand very high up, and brought down easily, but there was more difficulty in drawing down the second leg, and the body, than I have usually met with in version. A still greater difficulty attended the extraction of the head (owing, I believe, to the contractions of the uterus retaining the upper portion of it in the lacerated part); I could reach the mouth, and tried to aid the expulsion of the head by pressing the chin of the fœtus down on the chest, at the same time pushing up the occiput with my other hand, but without effect: as there was no pulsation in the chord, and the child had evidently been dead for some hours, I in-

sented a crotchet into the mouth, and with somewhat increased traction, the head was released. The placenta was expelled soon after.

The patient bore the operation remarkably well, spoke with a strong voice, her pulse was strong, skin warm, and, with the exception of the abdominal pain, she did not present any unusual symptoms. Twenty drops of Vin. Opii were given, and fomentations applied to the abdomen, but as the inflammatory symptoms afterwards evidently increased in strength, blood was again abstracted from the arm, and three grains of calomel with one of opium were ordered to be taken every three hours. Although the pain was again relieved for a time, the symptoms eventually became more urgent, the respiration was hurried, and the patient gradually sank without losing consciousness, expiring between 9 and 10 o'clock at night, having survived the laceration thirty-six hours. Unfortunately no post-mortem examination could be obtained.

CASE IV.—Retroversion of Uterus at the fourth month of Pregnancy.

May 11th.—C. T., æt. 27, in her sixth pregnancy, was brought into the Lying-in Ward during the night, apparently in labour, as severe pains came on at intervals, and were increasing in strength. The midwife, on examining, found the os uteri tilted up as high as the pubes, and the direction of the vagina altered: she states that the patient had passed her urine freely?

I visited the patient soon after receiving the above report, and on making inquiries found that she had not yet quickened, and that the last catamenial discharge took place on Jan. 1st.

It appeared that on April 29th, whilst carrying a tub down stairs, her feet slipped, and she had a severe fall, striking her right side near the groin against the tub: acute pain supervened in the evening, and continued for three or four days, during which time she passed very little urine, and this only by a teaspoonful at a time, attended by strong forcing, and a sensation of bearing down. She has applied to two different Institutions, and has taken various diuretic medicines, and mucilaginous drinks, but without any good effect. The bowels have been relieved daily

by castor oil, but severe pain always accompanies their action. Combined with the forcing pains and sensation of bearing down, she feels as if the vaginal passage were blocked up.

Before making any further examination, the catheter was introduced, and *five pints of urine* were drawn off, with complete relief of all the symptoms. The uterus immediately re-assumed its proper direction, but its orifice remained close to the vulva: in twenty-four hours after this, however, it had ascended to its usual position, and all untoward symptoms had disappeared.

The patient went on until her fall period, and was delivered, on the 14th of the following October, of a living child.

CASE V.—Presentation of Head and Arm—Forceps.

July 11th, 1843.—I was sent for by Mrs. Bailey, one of our parochial midwives, to visit a patient in Carrier Street, at 5 P.M. Labour pains had continued through the past night, but had little or no effect in dilating the os uteri; by 3 P.M. it was open to some extent, and on the membranes rupturing at that time, Mrs. B. had felt a substance resembling the elbow coming down with the head; this she pushed up, but it was again extruded by the next pain. When I saw the patient two hours afterwards, the arm could be felt up to the shoulder, but as the head was well placed, and there was apparently room for both to pass through the pelvis, I recommended that no further interference should be employed for the present. The bladder had been evacuated this afternoon. I was again sent for at 9 P.M., and found the os uteri now fully dilated; the whole arm was protruded beyond the vulva, much swollen and discoloured, and the head was low down, with the vertex under the pubes. The expulsive pains were strong and regular, but as, after waiting for some time, I did not find that any progress was made in the advance of the head, I introduced Hamilton's small curved forceps (the locking being attended with some difficulty, owing to the extruded and swollen arm), and by directing the traction towards the pubes, the head immediately began to move, and was soon extracted, the body being expelled by the natural pains. The child, a male of large size,

gave no sign of respiration for some time, but there was very slight pulsation in the chord: the face was much swollen and discoloured. By slapping the chest, and applying heat and friction to the body, slight gasps occurred at intervals, and after a considerable interval complete respiration was established.

CASE VI.—*Forceps Case—Inefficient Uterine Action.*

August 6th, 1843.—E. B., æt. 23, residing in Smith Street, Somers Town: had been married five years, but this is her first pregnancy. Is very hysterical, and subject to fits of syncope. Labour pains commenced on the evening of the 5th, but they were slight and irregular, the membranes, however, rupturing at 9 P.M., after which occurrence the pains became more active and frequent during the night. Mr. Bennett first saw her at 7½ P.M. on the 6th, and on examination found the os uteri dilated to the size of a half-crown, its lips being thick and rigid, pains of considerable strength recurring about every five minutes. By 1½ P.M. the os uteri had become fully dilated, and the child's head descended into the pelvis, but remained stationary, the left ear being felt behind the pubes, the face inclining towards the left sacro-iliac symphysis.

The action of the uterus from this time diminished considerably, the pains recurring at long intervals, and becoming very inefficient, the position of the head remaining the same. After some hours the friends of the patient becoming exceedingly anxious as to the case, Mr. Bennett requested me to see it with him in the evening about 8 o'clock, and on my arrival I found the patient suffering somewhat from exhaustion, but on examination there was not sufficient malformation of the pelvis to prevent the passage of the child, although the rami of the ischia were rather more nearly approximated to each other than natural. Evidence of the child being still alive was afforded by distinctly hearing the foetal pulsation below and a little to the right of the umbilicus. Under all circumstances it was judged prudent that delivery should be hastened, and I applied Denman's straight forceps without any difficulty. Moderate traction sufficed to disengage the head, but as there was

apparent danger of asphyxia to the child, it was found necessary to bring down the body as speedily as possible, the passage of the shoulders causing some difficulty. The child (a female) was born alive, and the mother's progress was very favourable until the sixth day, when, from some undue excitement, she suffered from a succession of fainting fits, which did not, however, interfere with her consequent recovery.

CASE VII.—*Forceps Case—Slight Deformity of Outlet of the Pelvis.*

July 23d, 1844.—E. H., æt. 32, residing in Brill Row, Somers Town: fourth pregnancy. Had suffered from irregular pains during the whole of the 21st, although she admits that true labour pains did not commence until the evening of the 22d; these continued throughout the night, but she did not seek assistance till 5 A.M. of the 23d, when Mr. Wade attended, and found the uterine contractions were strong and frequent, the os uteri fully dilated, the membranes rupturing at 7, when the head descended into the pelvic cavity. It became arrested, however, at the outlet, and notwithstanding the contractions of the uterus were forcible, and continued for some hours, it made no further advance. I visited the case at noon with Mr. Powell and Mr. Wade, and on examination found the vertex near to the perinæum, but not distending it, even during the pains, which were of a strong and forcing character.

The patient had lately passed her urine, and the bowels had been freely relieved. As the parts were somewhat swollen and heated, there had been no effect produced by strong uterine contractions continued for some hours, and the previous labours of the patient had been difficult, it was judged expedient to facilitate the passage of the child at once, by means of the forceps. I made use of Hamilton's curved ones, which were readily adapted to the head, and a living male child was soon born. Mr. Wade, who took charge of the case, informed me that soon after the expulsion of the placenta, hæmorrhage to some extent occurred, but was arrested by the usual means, viz. pressure, cold applications, and a tight bandage.

CASE VIII.—*Breech Case—Cicatrices in the Vagina.*

March 8th, 1844.—I was requested by the resident surgeon of our Infirmary, Mr. Bennett, to visit a case with him in the Lying-in Ward: the patient had required the use of instruments in a former labour, five years since, and there now existed, as the result of previous inflammation, two strong bands across the lower part of the vagina, one posteriorly, the other at the anterior portion. The nates presented, but the pains having latterly been very deficient in energy, although the os uteri was fully dilated, a dose of ergot had been administered with good effect, as on my arrival I found that the contractions had regained their former force and regularity. We decided on leaving the case to the natural efforts of uterine action for the present, but that should these bands prove a serious and long-continued obstacle to the passage of the child, the anterior one should be divided by a probe-pointed bistoury: this, however, was not required, as the child was expelled an hour afterwards without aid. The placenta was encysted in the upper portion of the uterus, and violent flooding occurred, but on passing the hand up, and removing the former, all untoward symptoms ceased.

CASE IX.—*Arm Presentation—Version.*

Nov. 11th, 1842.—I was sent for to visit a patient, æt. 41, residing at 20, Church Lane. The midwife on her arrival had found the membranes entire, but on their rupturing, the left arm descended into the vagina: this she had returned into the uterus, but it was again pushed forward by the next pain, and the hand was at the vulva when I examined. As my arm was disabled by a slight accident at this time, I requested Mr. Wells, of Charlotte Street, to turn the child, which he kindly did. Some difficulty was experienced in introducing the hand through the os uteri, owing to the strong contractions at this part, though not at any other portion of the womb. One leg was brought down, but was not found sufficient to effect the version, and the hand was again passed up into the uterus, and the other foot seized and brought down. The operation was now performed with facility, and the child extracted in a putrid state. The placenta came away soon after.

CASE X.—*Feet and Funis Presentation—Difficult extraction of the body.*

June 1843.—I was requested by Mr. Aldridge to visit a patient of the Northern Dispensary with him. Mr. A. on his arrival had found the funis protruding from the vulva, and pulsating; this he returned into the uterus, but it soon again descended with the feet. Labour progressed slowly, but the gradual expulsion of the infant continued, until after the passage of the nates, when, notwithstanding several strong pains, coupled with forcible traction by Mr. A., no further advance took place. Two hours had elapsed without any progress having been made, and the contractile efforts of the uterus had gradually diminished, the pulsation of the funis having ceased for some time. By altering the position of the patient somewhat, so as to enable me to employ traction more in the direction of the axis of the outlet, and by using much greater force than I ever recollect to have found necessary in a similar case, the abdomen and thorax of the infant at length passed slowly, and the arms were then also brought down. Depressing the chin upon the chest by introducing a finger into the mouth, and by pushing up the occiput, the head passed without any difficulty. The child was of considerable breadth across the chest and shoulders. The placenta was soon after expelled, and the patient recovered speedily.

CASE XI.—*Craniotomy.*

March 20th, 1843.—I was requested by Mr. Wells to see a patient, residing at 6, Smart's Buildings, on the evening of the 18th. She had been in labour since the morning, but the os uteri had dilated very slowly, and was not fully opened until 10 o'clock, P.M.: strong pains continued through the night, but when we again saw her the next morning (19th), there was very little advance of the head, which was the presenting part. The lower part of the woman's pelvis was well formed, but the brim was contracted in its antero-posterior diameter, and as the child's head was too high up to allow of the employment of forceps, 20 min. of Tr. Opii were given, which enabled the patient to sleep for some hours, and to recruit her exhausted strength. At 9 P.M. the head had descended somewhat lower, but was still beyond reach of the

forceps, and we both felt unwilling to resort to the use of the perforator, although the woman had now been so long a time in labour, as the foetal heart was distinctly heard, beating about 140 pulsations in the minute, two inches below the umbilicus of the mother; the uterine murmur was to the left side, and even with it.

The cranial bones on examination appeared large, and of firmer consistence than usual.

20th.—On visiting the patient at 7 this morning, we could not distinguish any foetal pulsation; there was a disagreeable odour in the room, and there appeared every probable sign of the child's death: the head was now much lower, but on endeavouring to make use of a small pair of forceps to release it, we found that there was not sufficient space for the introduction of the second blade. The pains were strong, and there not now being the same urgent reason for delaying the use of the perforator, it was had recourse to, the bladder and bowels having been previously evacuated. The size of the head was reduced, and by the aid of the crotchet it was extracted, the body afterwards being expelled chiefly by uterine contractions. It was a male child, its head large, and of firm texture, though the sutures were not ossified. Mr. Wells afterwards removed the placenta, which adhered to the anterior part of the uterus near the fundus. The patient did well.

[To be continued.]

INFLUENCE OF SULPHURETTED HYDROGEN GAS ON FISH.

PREVIOUSLY to 1830, the waters of the harbour of Marseilles were tolerably pure, and contained a considerable quantity of fish. Some years ago, however, all the fish suddenly died; they were seen to float asphyxiated upon the surface of the water; and at the same time the odour of sulphuretted hydrogen became perceptible, and has since continued obvious to the sense of smell.

For a number of years a considerable quantity of soap has been made in the neighbourhood of the town; and in its manufacture, the ley, which is rich in the sulphates, being allowed to escape, percolates through and between the various strata there composing the surface of the earth, and eventually reaches the waters of the

harbour, when the sulphates, being in contact with decomposing organic matter, give rise to the production of sulphuretted hydrogen, which is at first dissolved in the water, and afterwards exhaled from its surface.

This observation may be applied to the explanation of certain geological phenomena. All the fossilised fish discovered in Provence by M. Blanchet were found lying on their sides, none being in a vertical posture; hence M. Blanchet concludes that they had perished at the moment of the irruption of the agent which had prevented their putrefaction. The same arrangement has been noticed in the remains found at Oningen and Solenhofen.

With respect to the probable cause of the death of these animals, M. Blanchet remarks that the calcareous strata at Aix, in which the fishes are found, rests immediately upon a bed of sulphate of lime of upwards of a yard in thickness. At Bonieux, the calcareous marl which encloses the organic remains is strongly charged with sulphuretted hydrogen. The same is the case with the fossilised fish of Oningen.

Hence, without positively asserting sulphuretted hydrogen to have been the poisonous agent, M. Blanchet concludes that there is a high degree of probability in favour of that supposition.

The surface of the globe is covered with a multitude of living beings, and it has been so arranged by the Creator that the elements of one generation should contribute to the formation of a new one. The earthy parts of animals, such as shells, bones, teeth, long resist this process, but the whole of the soft parts are rapidly decomposed and disappear. Hence, if we find, as at Aix, a collection of carnivorous and other fish, coleopterous and dipterous insects, and that these remains are so preserved as to prove that their fleshy parts have not been disintegrated, we must conclude that the general equilibrium has been for once disturbed; and that the same cause which occasioned the destruction of one set of beings has also involved those of which they would otherwise have become the prey. Thus as an analogy to the occurrence at Marseilles—the presence of sulphuretted hydrogen in the rocks, and the position of the fishes—all tend to strengthen the supposition just indicated.

Professor Agassiz has pointed out another cause of the sudden death of fishes, viz. a rapid and considerable diminution in the temperature of the water. This fact has been observed in the Glatt, a small river near Zurich. It was probably an analogous phenomenon which occasioned the sudden death of the animals which have been found buried in ice in high northern latitudes.—*Comptes Rendus.*

MEDICAL GAZETTE.

FRIDAY, AUGUST 15, 1845.

WE elsewhere print those clauses of the fourth Physic and Surgery Bill which have been added in Committee, and on re-commitment*. These comprise the principal changes which have been made; and as some months will necessarily elapse before the measure can again become the subject of legislative discussion, we propose to reserve our comments for the present. In the meantime, it will be seen that the account given in a recent number of this journal†, corresponds with the alterations which have been made. The Bill is, on the whole, much simplified. The clauses have been reduced from forty-one to thirty-six.

AMONG the measures which have been brought before Parliament, there are three which are of some interest to the medical profession, the Lunatics' Bill, the Lunatic' Asylums and Pauper Lunatics' Bill, and that which relates to the Sewerage and Drainage of Towns. The two first have already received the Royal assent; while the Sewerage Bill has been placed before the House of Commons, in order that it may be considered during the recess, and brought forward at an early period of the next session. This is a wise proceeding:—the operation of such a measure is likely to have a most important influence throughout the kingdom in relation to Medical Police, and in order that it should be attended with good, it is right that its details should be fully canvassed. The objects of the Bill will be understood, by stating that it is "for the improvement of the sewerage and drainage of towns and of

populous districts, and for making provision for an ample supply of water, and for otherwise promoting the health and convenience of the inhabitants." In short, the great feature of the measure is to do away with many of the causes of disease and mortality in overcrowded populations. It is founded on the Report of the Health of Towns' Commission, a convenient abstract of which, alike interesting to the medical practitioner and every man who feels an interest in the welfare of his species, has been lately published by the Rev. C. Girdlestone.* It is our intention to take an early opportunity of giving an analysis of the provisions of this Bill.

An objection was taken to the Pauper Lunatics' and Lunatics Asylums' Bill on account of its giving too great a centralizing power of control to Government, and increasing the county rates. It was alleged, that it would take away from magistrates, all authority to make rules and regulations for the proper government and management of asylums, the power hitherto held by these functionaries being transferred to a commission under the control of the Commissioners of Lunacy and the Secretary of State for the Home Department. It is very likely that this will appear to be harsh treatment in those cases where asylums have been as yet well managed, and the lunatics have been properly superintended; but it is necessary to look at the other side of the picture, and perhaps, for this purpose, we cannot do better than quote one example from Lord Ashley's speech on the introduction of the bill. In the parish workhouse of a populous borough, there were seventy-one insane persons subject to insanity, in various forms, several of them being epileptics, liable, after their paroxysms of epilepsy, to fits of raving madness, during which

* Page 697.

† Page 601.

* A short notice of this pamphlet will be found in a preceding number, No. 11, p. 472.

they were usually excessively and furiously maniacal. The straw in the paupers' beds was found filthy, and some of the bedding was in a disgusting condition from running sores, and was of the worst materials, as well as insufficient: two cells in which three sick epileptic paupers slept, were damp, unhealthy, and unfit for habitation. The beds of some of the private patients are in an equally bad state: nearly all the provisions of the law for the regulation of licensed asylums are violated. "*The magistrates of the borough, who are its visiting justices, had not visited the house for the space of a year minus eight days!*" We know that strong objections have been made to the Report of the Commissioners of Lunacy, on the ground of exaggeration, but we cannot help thinking that the public, in judging of this matter, will consider that the Commissioners could have no possible object for exaggeration or misrepresentation, and it is an impeachment of their common sense, to insinuate that they were unable to observe facts for themselves. On the other hand, as the objectors have a direct interest in lunatic asylums, without accusing them of a wish to conceal and maintain abuses, it is questionable whether in spite of the most honest intentions, they are in a position to form an unbiassed judgment on such matters. Whether they are or not, the public, with this Report before them, will certainly not give them credit for an absence of bias in favour of things as they are, or have been; and we think that a case is decidedly made out for a more frequent and certain visitation of the insane. All legislative reforms are sure to operate with more or less injustice somewhere, but it is the good of the community which the State is bound to regard. The laxity which would shelter some asylums from stringent

superintendence, would operate equally to maintain abuses in others, where the insane have been left to wear out existence in a state almost amounting to criminal neglect.

Let us now look at the other objection, *i. e.* the increased expense which this measure will entail upon counties. On this head, we find, according to Lord Ashley's statement: first, that there are *forty* counties in England and Wales, and only *sixteen* county asylums; there are *twelve* counties in Wales, and only *one* disgraceful Borough asylum! Of the twenty-four counties in England, having no asylums,—one has 500, two upwards of 400, three upwards of 300, seven upwards of 200, and eleven nearly 100 lunatics each, and Wales has 1,000 lunatics with *one* asylum. The second defect is, that, of the sixteen counties which have asylums, one has 800, one has 600, one 500, one more than 300 three more than 200, and the rest more than 100 lunatics, for whom there is no accommodation in the asylums which have been erected, and no other receptacle. The third defect is, that all the existing asylums are full of incurables, or persons said to be incurable. The fourth is, that no system has been adopted in the county asylums, to give preference to urgent cases or those capable of cure. The fifth is, the detention, under the present state of the law, of lunatics in workhouses, where there is not sufficient medical or moral treatment. It is impossible that remedies can be provided for these admitted defects, without entailing expense on counties;—the question therefore is, whether it be politic or expedient, that proper receptacles should be provided for these unfortunate persons, or whether they should be left to the chance custody of constables and the masters of workhouses, without supervision. Whether

we regard the question in a humane or medical light, we do not think there can be much doubt about the answer to be returned to it; and it appears equally clear, that each county is in equity bound to provide as much for its own pauper lunatics, as for its own poor. An opponent of the bill, who urged this objection on the ground of expense, argued that, if pauper lunatics were confined in workhouses, it was contrary to law. "Any lunatic confined in a workhouse might get out when he pleased." Undoubtedly; but did this noble opponent consider what was to be done with him, when he was out? He must either be kept under confinement by his pauper friends, (a very unlikely event) or allowed to roam about the country, and become, as every now and then happens, the subject of a plea of "homicidal insanity" at the Assizes—some unfortunate person having lost his life, owing to this want of proper care! Under these circumstances, it is just fortunate for society, great as the evil may have been to the patients, that village-constables and masters of workhouses should have taken the law into their own hands; and that the imprisoned lunatics themselves, were either too ignorant of their civil rights, too poor, or too far gone in their malady, to sue out a writ of *habeas corpus*. The fact itself, is one of the best arguments in favour of the erection of additional asylums. Under the 9th Geo. III. c. 40, counties were *permitted* to erect asylums. The returns now made, show how few have availed themselves of this legal permission,—their interest lying the other way. Under the new act, every county and borough which has no asylum, must provide one either for itself, or in union with some other county or borough. 2d. Every county which has an asylum, but insufficient

accommodation, is to provide further accommodation. 3d. In erecting new asylums and providing further accommodation where it is required, regard should be had to the proportion of curable and chronic lunatics. It seems to us, that there is nothing unreasonable in these provisions, and that if counties are bound to provide gaols for persons charged with offences, they are equally bound to provide asylums for the insane. Whatever may be the expense to counties, the good of the community must be consulted; and this is as much at stake in the one case as in the other.

VOLITION NOT SUSPENDED DURING SLEEP.

THAT volition is not suspended during sleep, is proved by many facts; and probably the experience of every person who remembers his dreams, affords evidence that the will is as busy during sleep as when awake. But the fact is strikingly illustrated by examples of remarkable exertion of will in the employment of intellect and genius during sleep. Tartini, a celebrated violin-player, composed his famous *Devil's Sonata*, while he dreamed that the devil challenged him to a trial of skill on his own violin. Cabanis often during his dreams saw clearly into the bearing of political events which baffled him when awake. Condorcet frequently left his deep and complicated calculations unfinished when obliged to retire to rest, and found their results unfolded in his dreams. Coleridge's account of his wild composition, *Kubla Khan*, is very curious. He had been reading Purchas' Pilgrimage, and fell asleep at the moment he was reading this sentence:—"Here the Khan Kubla commanded a palace to be built, and a stately garden thereunto." He continued in profound sleep about three hours, during which he had a vivid confidence that he composed from two to three hundred lines; if, as he says, that can be called composition in which all the images rose up before him, as *things* with a parallel production of correspondent expressions. On awaking he appeared to have a distinct recollection of the whole, and proceeded to write down the wonderful lines that are preserved, when he was interrupted, and could never afterwards recal the rest.—*Moore on the Power of the Soul over the Body.*

Reviews.

A System of Surgery, by J. M. Chelius.

Translated from the German, and accompanied with additional Notes and Observations. By JOHN F. SOUTH. Parts II. and III. Renshaw: London, 1845.

THE leading part of this work is a translation of a book by Professor Chelius of Heidelberg, entitled, Handbook of the author's Lectures, and consists of very condensed descriptions of the pathological symptoms and treatment of each form of surgical disease, which are preceded by lists (not always very complete) of the best works upon the subject, and followed by copious and well-arranged quotations from the writings of those authorities, whose opinions are recognised in the practice of the present day. These extracts are in the form of notes, and have received many important additions from the translator's own experience. A few extracts from Mr. South's notes may be interesting to our readers. The following case, which occurred in the practice of Mr. Shaw, is an instance of the dangerous arterial hæmorrhage which occasionally, though rarely, follows excision of the tonsils:—

"A man, aged 40 years, was deaf in the left ear; and the tonsil on that side being enlarged, it was incised with the guillotine" (the instrument invented for this purpose by Dr. Physic) "on *Saturday*. No bleeding of consequence followed, the gland being hard and light-coloured, as if of old standing. On *Monday* he complained of sore throat, and the incised surface appeared as if a superficial slough were about to form. On the afternoon of *Tuesday* bleeding commenced in the lower part of the cut surface, where ulceration had taken place adjoining the slough. An oozing of blood, varying in quantity, continued, in spite of repeated attempts to check it with styptics, till the afternoon of *Thursday*, when he was so much exhausted that the carotid artery was tied. The bleeding now ceased completely, the wound rapidly closed, and the ligature came away on the twelfth day; in a short time after which he was discharged cured."

Mr. South suggests that cases of this kind may perhaps be explained on the

presumption that the small vessels of the enlarged tonsil gland are unable either to contract or retract, in consequence of the adhesive matter with which the cellular tissue of the gland is filled, and by which its enlargement is caused, preventing their closure.

Appended to Sir Astley Cooper's observation upon a form of indolent chronic abscess of the breast (which, from the slowness of its formation, and the absence of the usual constitutional and local symptoms of inflammation, is liable to be mistaken for a malignant tumor, requiring an operation for its removal), the translator gives a very instructive case:—"I had once," he says, "the ill luck of operating in such a case, of which the following is the account, and will be found to tally so nearly with the ordinary history and course of scirrhus, that I may be held excused. E. S., aged 45, a married woman, about twelve months before her admission received a blow on the right breast, and four months after, whilst suckling, received another; but she felt nothing more than a slight shooting, of which she took no heed till after weaning her child, four months since. She had not suckled from this breast, as the last child would not take it; but the secretion continued, and the milk flowed out till she ceased to suckle. After weaning, the breast began to swell, and she first noticed the lump, for which she applied leeches and fomentations. These diminished the general swelling, but without dispersing the lump, which, on the contrary, continued increasing, accompanied with smarting pain, and, at the time of her admission, was about the size of a pigeon's egg, situated just below, and to the outer side of the nipple, with the skin slightly adherent, very hard, and the nipple somewhat retracted. The tumor was removed, and, on cutting into, was found to contain the cyst of an abscess about the size of a walnut, and containing pus. The surrounding parts were thick and hardened, but there was not any appearance of scirrhus. She did well."

We are always glad to see accounts of cases like that we have just quoted;

* We remember to have seen an instance rather similar to this. Were it to become the custom to make a free exploratory incision into all morbid growths before attempting their removal by the knife, some very severe operations would be rendered unnecessary.—ED. GAZ.

because, while the frank acknowledgment which they convey, does credit to the ingenuous feeling of the surgeon, the practical value of records of unsuccessful treatment and mistaken diagnosis is very great. The best practitioners have committed, and continue to commit, many and great mistakes. Where every precaution has been used, this reflects no discredit, for the study of disease is not, and probably never will be, an exact science, and the most experienced and quick-sighted men cannot always be prepared for delusive signs and new combinations of symptoms. How many valuable warning facts would come before us, if practitioners had the moral firmness to publish all their mistakes in treatment and diagnosis, instead of sifting their experience, and recording only their discoveries and their successes!

The translator gives an interesting case, in which he considers that, from gonorrhœa, and swelled testicle consequent upon it, a metastasis to the brain took place. The patient, aged 31 years, had been subject since infancy to symptoms of cerebral disorder. About six months before his admission he was attacked with a thick glutinous discharge from the urethra, which had continued pretty copious until within the last three days, when it diminished considerably, and the testicle began to swell. Upon the testicle being reduced in size, and the discharge lessened by treatment, the patient became affected with very severe cerebral symptoms, which gradually abated under the action of mercury, blistering, &c. During his recovery from this attack a gleety discharge from the urethra reappeared. But when he left the hospital well, the discharge had gradually subsided without any treatment. We doubt if these symptoms would have occurred if the patient's brain had not been in a state which predisposed it to become congested from slight causes.

The whole of the above quotations are from the Second Part; the Third is almost entirely devoted to diseases of the joints. This portion of the work has been enriched with so large a selection from the recognized observations of the best writers upon the subject, that we must direct the attention of students to it, as a very complete embodiment of the soundest views upon the various forms of arthritic disease. The recent observa-

tions of Mr. Toynbee and Mr. Rainey, on the structure of the synovial membranes; and the researches of Henlé, Toynbee, Miescher, and Todd and Bowman, into the structural anatomy of articular cartilage, are also very amply detailed.

We were surprised to find, in a portion of the work descriptive of the tying of arteries (p. 303), that Prof. Chelius speaks of surgeons who, as it would seem, still employ the broad ligature, "endeavouring to flatten the artery, and bring its walls into close contact," "even by means of a cylinder of wood or linen placed beneath it." Where can Chelius have discovered these well-preserved specimens of the primitive barber-chirurgeon race? Can his translator give us any further insight into their antiquated and inhuman practices? In doing so he would afford a great treat to the archæologists. Do they still remove tumors with the knife of Fabricius dipped in aquafortis, and strike off limbs with the Maiden of Botalli, or the broad axe of Hildanus? They do not, of course, staunch the hæmorrhage with cauterics tempered in red wine, for they have equally safe and rational means—in their ligatures of tape, and cylinders of wood or linen—a practice highly venerable from its antiquity, but scarcely to be mentioned—as still authorized—in a work intended for students. We think it would always be well, in Systems of practical surgery, to omit the details of justly exploded operations, and of the grounds upon which their advocates recommended them. Students are apt to be struck with the apparent plausibility of these fallacious arguments, and lose time in doubting between antiquated follies and the true principles. In referring to several of the earlier memoirs on the use of the round ligature in securing arteries, the translator has not alluded to the paper in which the employment of the *small* thread or silk ligature, was first recommended. We refer to an essay published by Dr. James Veitch, of Kensington, in the *Edinburgh Medical and Surgical Journal* for April, 1806, in which the author proved, that such a ligature could be safely applied to the large arteries of the human subject, being less liable to produce irritation in the wound and secondary hæmorrhage than one of thicker material. Dr. Jones did not apply his round ligature

in operations on the human body; and his directions were not so explicit but that they left the surgeon at liberty to use as bulky a ligature as he pleased. We have always believed that, to Dr. Veitch, surgery owes this great improvement in the form of the ligature.

We have no doubt that, when completed, this work will embody a very large mass of practically useful surgical information; and that its value, as a book of reference, will be great, although probably not greater than that of some of the standard compilations on surgery which we at present possess; for we must suggest that the translator's bibliographical lore rather fails him when he states, in his prospectus, that "no complete system of surgery has appeared in England since Benjamin Bell's work, first published in 1783."

A Sketch of the Relation which exists between the Three Kingdoms of Nature, &c. By THOMAS WILLIAMS, M.B. 8vo. pp. 78. Murray and Rees, Swansea, 1844.

DR. WILLIAMS'S "Sketch" contains, within a small compass, a large amount of information on various subjects more or less appertaining to medical science. It may be considered as a summary of a series of lectures, with numerous additions, delivered by the author at the Royal Institution of South Wales. Reason, Instinct, Diet, Nutrition, and subjects of the like nature, are successively examined in a popular form. We are most pleased with that part of the essay which refers to the impurities of the atmosphere in mining districts. The local position of the author has here given him ample opportunities of making some interesting practical inquiries into the effects of various poisonous vapours on plants and animals. All who have been in that part of Wales, must have noticed the blighted tracts of vegetation around the large Copper-smelting works. These effects have been commonly attributed to arsenical exhalations; but the author examined several species of grasses growing near the works without detecting any trace of arsenic, and he therefore believes that this poison takes no part in the injury which the copper-smoke entails upon the surrounding vegetation. We shall conclude by remarking, that this "Sketch" does great credit to the author.

Medical Intelligence.

THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION.

ONE of the subjects of discussion at the late anniversary meeting of the Provincial Medical and Surgical Association, at Sheffield, related to the continuance or discontinuance of the Provincial Medical and Surgical Journal. There was some difference of opinion on the subject; and finally a resolution, proposed by Dr. Hastings, was carried, that the journal should be continued, but diminished in size. We are pleased to find that we shall not lose our cotemporary altogether. This journal has long formed a channel for the communications of provincial practitioners, on facts connected with practical medicine and surgery, and we have frequently made use of these contributions in an abridged form. We think that many interesting cases would remain entirely unknown to the profession, but for the publicity which they obtain through a journal of this description. We can understand that men who might, from indolence or indifference, hesitate to write for the older periodicals, would feel that a strong necessity existed for giving their literary support to a journal, in the success of which they had a common interest. On this account we should regret its discontinuance. The journal may not contain so much matter as some of its cotemporaries, but it is less infected with politics and personalities, and we hope long to see it continue its quiet and even course.

THE LATE DR. MALE.

WE had lately occasion to record the death of Dr. Male, of Birmingham. It appears from a communication since made to the Medical Times, that he died from the effects of tincture of aconite, which he had taken medicinally. According to the evidence at the inquest, he could not have taken more than *eighty drops* of the tincture in ten doses, over a period of four days,—the largest dose (ten drops) being the last. It is impossible to account for his death from this cause, without supposing that this poison possesses an intense accumulative effect, and that it here acted with unusual power upon a constitution much enfeebled by age. In Cormack's London and Edinburgh Monthly Journal for April 1844, is reported a case where a man swallowed, at once, eight times the quantity of tincture of aconite taken by Dr. Male in divided doses, and he entirely recovered in three days! There is no doubt, however, that aconitine is a most formidable poison.

A BILL FOR REGULATING THE PROFESSION OF PHYSIC AND SURGERY.

28 July, 1845.—8 VICT.

CLAUSES ADDED BY THE COMMITTEE.

14 (A). *Provision for existing students.*—And be it enacted, That it shall be lawful for the Council of Health to make regulations for dispensing with such provisions of this Act as to them shall seem fit, in favour of medical and surgical students who shall have commenced their professional studies before the passing of this Act.

25 (B). *Registered surgeons may practise throughout the United Kingdom.*—And be it enacted, That all persons who shall be registered by the said Council as surgeons, shall be entitled, without other license than such registry, to exercise or practise surgery throughout the United Kingdom of Great Britain and Ireland, and in all other parts of Her Majesty's dominions, and shall be exempt from being sued or liable to any penalty under the provisions of the said Act passed in the session of Parliament holden in the fourteenth and fifteenth years of the reign of King Henry the Eighth.

31 (C). *Penalty on unqualified persons practising as apothecaries.*—And be it enacted, That every person, who after the passing of this Act shall act or practise as an apothecary in any part of England, without having been registered by the said Council of Health as a general practitioner, shall for every such offence forfeit and pay the sum of twenty pounds, to be applied to the use of the Royal College of General Practitioners of England, and to be recovered by the said College by action of debt in any of Her Majesty's Courts of Record at Westminster.

32 (D). *Saving the right of qualified apothecaries.*—Provided always, and be it enacted, That nothing in this Act contained shall extend to render any person liable to any penalty for acting or practising as an apothecary in any part of England, who was actually practising as an apothecary on the first day of August in the year one thousand eight hundred and fifteen, or who before the passing of this Act shall have obtained a certificate of qualification to practise as an apothecary from the Court of Examiners of the Society of Apothecaries of the City of London, or who shall have acquired the right of practising as an apothecary by virtue of an Act passed in the sixth year of the reign of King George the Fourth, intituled, "An Act to amend and explain an Act of the Fifty-fifth Year of his late Majesty for better regulating the practice of apothecaries throughout England and Wales."

CLAUSES ADDED ON RE-COMMITMENT.

13 (No 1.) *Preliminary examination of physicians and surgeons.*—And be it enacted, That no person shall be qualified to offer himself for examination by the Royal College of Physicians of England, Scotland, or Ireland, for the purpose of being registered as a physician, or by the Royal College Surgeons of England, Scotland, or Ireland, for the purpose of being registered as a surgeon, who shall not have previously passed the like examination by the several Royal Colleges of Physicians and Surgeons of England, Scotland, and Ireland respectively, as is required to be passed before those Colleges respectively by persons who have been examined by the said Royal College of General Practitioners, in order to entitle them to be registered as general practitioners.

28 (No. 2). *Register to be published.*—And be it enacted, That every person whose name is registered under this Act, either in the register or supplemental register, and who shall be desirous that his name shall be continued in the published register, or supplemental register, shall, in the month of September in every year, send to the said Council his name and place of abode, with the date of his testimonials, and the Council shall verify the returns so made to them by comparison with the register or supplemental register kept by them, and shall forthwith, without any further fee, cause the names of all persons duly registered and so returned to them to be published in alphabetical order in their several classes, with their several places of abode, and dates of their testimonials, specifying in each case the University or College to which each belongs; and a printed copy of the register for the time being, so published under the direction of the said Council, shall be evidence in all courts, and before all justices and others, that the persons therein specified are registered as therein mentioned under this Act; and the absence of the name of any person from any class in such printed copy shall be evidence, until the contrary be made to appear, that such person is not registered in such class under this Act.

MORTALITY AMONG THE ENGLISH TROOPS IN CHINA.

THE total number of deaths among the troops stationed at Hong Kong, in China, in 1844, was 373, including four officers, three staff officers, and one native officer; the average number of troops on the island being about 1,800, which gives more than *one death for every five men*. In addition to this there were invalided to Europe and India 333, giving a non-effective return of deaths, 373; invalided, 333; total, 706; or upwards of one-third of the average strength of the garrison.

In number the deaths were greatest in Her Majesty's 98th Regiment; that corps, however, was the whole year upon the island, while the other regiments were only part of the year; some only a few months. In the 98th Regiment there were of deaths, 193; invalided, 125; total loss of the 98th by death and invalids, 318.

The 4th Regiment of Madras Native Infantry arrived from the Straits' settlements in a sickly state on the 30th of April, and were therefore eight months of 1844 in China. The wing of the regiment in this garrison was 600 strong. They have lost during the eight months, by death, 129; invalids, 152; total, 281, in eight months, out of 600 men.

The losses sustained by other regiments are comparatively trifling, they having been but a short time here: the total deaths being 373 men.

A summary of deaths during the various months of the year shows the mortality to have been greatest in August and October, and least in March and April:—January, 30; February, 12; March, 4; April, 8; May, 16; June, 31; July, 49; August, 52; September, 42; October, 56; November, 50; December, 22.

It may be difficult fully to account for the deplorable loss of life among the military, whilst the other European inhabitants were comparatively healthy. It cannot be exclusively attributed to the influences of climate, or to any cause which would lead to the impression that this would always be a sickly place. On the contrary, among the 300 or 400 civilians on the island the deaths have been comparatively few, and a large portion of those who died, were either fresh from Europe, or had old diseases upon them. We do not remember a single death among those who may be said to have been *acclimated*, nor do we believe that among such there was a greater degree of sickness than at Macao or Canton. The great source of fever in tropical climates is unquestionably air poisoned by the exhalations from putrid matter—vegetable, mineral or animal, and from stagnant water. To the malignant influences of an atmosphere so tainted, the troops have not been a great deal more exposed than the other inhabitants; although, from the situation of the barracks, that locality cannot be so healthy as some of the dry ridges of the town. An impure atmosphere, however, was not the only danger which the military had to encounter: they were exposed to the sun or to heavy dews when on guard; their hours of sleep were irregular, their barracks bad; nor could they afford the frequent changes of clothing which in a tropical climate are indispensable. A civilian comes home from a ride or a walk; he changes his dress, has the comfort of a bath, and feels no bad effects from the exercise he has taken.

A soldier is relieved from guard—he has perhaps to walk from the naval stores to his quarters, a distance of two miles; he is heated, opens his jacket, and sits down in a draught to cool, with his pores open and the perspiration upon his skin and clothing, and fever, dysentery, and too often death, is the result.

It is expected that this summer will prove more favourable to health than the last. Many of the causes of *malaria* have been removed, though, unfortunately, not all; the community generally are better accommodated with houses, and the fever itself is either of a milder type than that of 1843, or the treatment is better understood, and it does not, like the African fever, leave any bad effects.—*Hong Kong Gazette, and Times (Abridged)*.

[REMARKS.—On reference to a paper which we have elsewhere published*, it will be perceived that the mortality in Hong Kong is greater than in all the other stations for British troops with the exception of Sierra Leone. The mortality of the English population in this country is not more than 2·09 per cent., or 1 in 45: this is equal to 22·09 in one thousand. In Hong Kong, however, the deaths were 2·08 per cent., or about one in 4·8, making 208 in one thousand. The deaths in the Bahamas are 200, and in Sierra Leone 483 in one thousand.—*ED. GAZ.*]

UNIVERSITY OF LONDON.

M.B. FIRST EXAMINATION. 1845.

First Division.

Birkett, George, Charing Cross Hospital.
Brinton, William, King's College.
Day, John, Climenston, London Hospital.
Goodridge, H. F. A., University College.
Hooper, Daniel, Guy's Hospital.
Huxley, T. H., Charing Cross Hospital.
Johnson, Walter, Guy's Hospital.
King, George Henry, Guy's Hospital.
Randell, C. W., University College.
Ransom, W. H., University College.
Reid, John, King's College.
Stallard, J. H., Queen's Coll., Birmingham.
Steel, Samuel Hopkins, King's College.
Williams, Alfred, University College.
Whittle, E., Royal Coll. of Surg. in Ireland.

Second Division.

Arlidge, J. T., King's College.
De Castro, J. C., University College.
Edwards, D. I., University College.
Hartnoll, H. T., St. Thomas's Hospital.
Holman, W. H., London Hospital.
Johnston, J., Queen's College, Birmingham.
Palmer, T., Apothecaries' Hall of Ireland.
Rygate, John James, London Hospital.
Stevens, Henry, King's College.
Sturt, Thomas James, King's College.

Selections from Journals.

SURGERY.

CASE OF "FÆCAL FISTULA" OCCURRING AFTER DIFFICULT LABOUR.

DR. BREITZMANN relates the following case. A woman of feeble health, who had already borne ten children, and was afflicted with prolapsus uteri, was taken in labour on the 28th of November, 1840; the pains speedily became severe, and were succeeded by rupture of the membranes early on the 29th. Although the pains have now increased in severity, and occasioned great suffering from the pressure of the child's head against the pubis, yet it was not discovered by the midwife, till early on the 30th, that there was faulty position of the child, and then Dr. Breitzmann was summoned. This physician arrived about six in the morning of the 30th, and he found the patient in a state of extreme exhaustion, complaining of violent pressing pains in the region of the symphysis pubis; the right arm and shoulder of the child were prolapsed; the pains were short and very severe; the child itself was dead. Dr. B. immediately resorted to turning, and delivered the child at once. The woman experienced immediate relief, and almost entire freedom from pain. Dr. B. heard no more of his patient until the evening of the second of December, and then the tidings were accompanied with a summons to visit her. It was ascertained that shortly after delivery, she had gradually experienced severe pain in the abdomen, particularly in the hypogastric region, extending thence towards the right ilium; this part of the abdomen was now distended, and very painful on pressure. The woman was in a high state of fever; her pulse was 120, but soft; she had loss of sleep, and her features were collapsed; skin perspiring; bowels regular; urine plentiful; the lochial discharge quite natural; she had frequent vomiting, and was in a constant state of alarm. These symptoms indicated some local inflammatory action going on in the abdomen, which had in all probability been excited by the great and long-continued pressure of the child's head against the bones of the pubis. From the feeble condition of the woman, Dr. B. judged it imprudent to abstract blood generally; sixteen leeches were therefore applied to the abdomen, over which a warm poultice was afterwards placed. Calomel was administered as soon as the vomiting had subsided. On the 5th of December the patient was altogether better. The pain had somewhat abated, and the vomiting had entirely ceased, but she complained now of a severe burning pain in the upper part of the vagina. The feverish symptoms still continued, the col-

lapsed state of the features being especially marked. The lochial discharge had almost entirely ceased; the urine and intestinal evacuations continued natural. The use of calomel was continued, an oleaginous emulsion, with some Ext. Hyosciami and Aq. Lauro-cerasi, was administered internally, whilst soothing applications and tepid injections were prescribed for the vagina. On the 8th the patient was found but little altered; the pain and distension of the abdomen continued, as also the sleeplessness and feverish symptoms. There was a scanty highly-fœtid lochial discharge. The plan of treatment remained the same. On the 9th complete retention of urine was added to the other symptoms, rendering it necessary to make use of the catheter, by which means a large quantity of highly offensive urine was drawn off, affording considerable relief. On the 10th there was fever, pain in the abdomen, retention of urine, and constipation. The catheter was again employed, and a dose of castor-oil administered. From this date to the 13th, the pains continued, and the urine had to be drawn off twice daily by the midwife; but the fœtid lochial discharge entirely ceased. On the 13th complete incontinence of urine supervened, and with this appeared a highly fœtid discharge from the vagina, which was found to consist of thin fœcal matter. During the following few days the incontinence of urine gradually disappeared, and the urine itself could be passed voluntarily and without pain; yet the fœtid discharge of thin fœculent matter continued, whilst evacuations from the bowels through their natural outlet seldom took place, and when they did, they were very slight in quantity. There could no longer be any doubt as to the real nature of the case.

Owing to partial inflammation of the uterus, the bladder and a portion of intestine lying between it and the uterus had become adherent to the peritoneal surface of the latter, had sloughed, and after the separation of the slough, which was on the fifteenth day, the fistulous passage into the intestine had been formed. The opening of this fistulous communication could, on examination, be distinctly felt at the upper and front part of the vagina, immediately behind the ossa pubis, and to the right of the exposed but uninjured urethra. Under such circumstances there was no possible advantage to be derived from any operation; the patient was directed to lie on her back, and strict cleanliness was enjoined; the bowels were kept open with castor oil; and a piece of sponge properly shaped was fitted into the fistulous opening in the vagina, in order to close this opening as completely as possible. In this, as in many other cases, the hope of effecting a natu-

ral cure by such means was realized: for in a few weeks the discharge of fecal matter through the fistulous opening ceased, and the evacuations returned to their natural channel through the rectum; in four months the fistulous opening was completely closed, and the woman restored to perfect health. — *Casper's Wochenschrift*, Marz 1845.

PATHOLOGY.

ON THE CAUSES OF ICTERUS.

BY M. DECAISNE.

It has been matter of opinion for some years, and perhaps is still so with many, that icterus is a symptom only of an organic change, whether in the apparatus of the liver itself, or in an organ reacting upon it; and such physicians have rejected this diseased condition from the nosology. The argument for so doing, is founded on the generally-admitted hypothesis, namely, that the colour of the skin, depends on the passage of bile into the blood; and the examination of this hypothesis forms M. Decaisne's chief object in his memoir.

He (M. Decaisne) infers, from his investigations, that although icterus depends often on the mixture of bile with the blood, whether in consequence of the presence of some obstruction to the course of the bile, or of its absorption;—yet it is not less true that in many cases it depends on the change of certain principles of the blood, perhaps from the predominance of yellow from obstructed excretion or secretion of the liver, or perhaps from the development of an abnormal yellow matter, formed in certain organs and carried by absorption into the circulation. Many facts are adduced in support of this important distinction; and the author has been in consequence led to divide icterus into two classes. 1. Bilious icterus, which depends on a lesion of the biliary apparatus, and the presence of certain principles of the bile in the blood. 2. Essential icterus, which, as to its colour, is independent of the bile. The characters of the first class are these—1. Skin thick, unctuous, wholly of a yellow colour, sometimes fixed, sometimes passing into a livid green. 2. The presence in the serum and urine of certain principles proper to the bile, which are capable of being recognised by the development of a green colour passing to brown by the action of nitric acid. 3. Decoloration of the faces. 4. Occasional bilious diarrhœa. In the essential icterus the skin never acquires so deep a hue; it is of a clear yellow or ochre colour, dry, and neither oily nor unctuous; the urine is clear, limpid, pale, not tinged green, nor is the serum discoloured by nitric acid; the

fecal discharges are not pale. The colour is strictly limited to the skin, or to a part only of the body. The author details many cases of local icterus, in which he not only failed to detect the presence of bile or any of its principles in the blood, but could not avoid noticing a modification of the capillary system at a particular point, where the abnormal secretion, upon which the colour depended, was determined.

In the cases of essential icterus, in which the entire surface of the body is coloured, we may recognise a cause analogous with an alteration in the blood, varying according to the modifications. Thus the author attributes to phlebitis or purulent absorption the icterus which supervenes on surgical operations or wounds of the head; and also shews that the icterus of newly-born infants cannot be regarded as exclusively dependent on hepatic disease, or the passage of the bile into the blood.

The author could not detect any trace of bile in the blood of several persons who had died suddenly affected with this form of jaundice, though in other respects in apparent good health; although he found the liver very small, shrunk, furrowed, and reduced to a state of cyrrhosis, yet these changes were not to be attributed to the action of the principles of the bile by their presence in the blood, but were rather owing to a modification in the composition of this fluid.

The following are some of the conclusions which the author has drawn from his researches; those, at least, which belong to his views of the subject.

1. Icterus does not in all cases depend on a lesion of the liver or biliary apparatus.

2. It ought, in some instances, to be referred to an alteration, to a separation of the principles of the blood, probably of the yellow matter normally existing in that fluid, or to a change of the red colouring matter to yellow.

3. It is certain that the fluidity and alteration of the principles of the blood, in some persons affected with jaundice, shew a modification of these principles, and may be regarded as the cause of sudden death in persons thus affected, or becoming jaundiced after the bite of venomous reptiles.

4. In support of such a modification in the composition of the blood may be cited the cases of icterus in newly-born infants, in whom these changes take place from the influence of external agents, sometimes from modifications of the circulation, the result of the change from foetal to extra-uterine life.

5. The existence of local icterus, can no longer be doubted, but the mode of its development is as yet unknown. — *Gazette Médicate*.

MIDWIFERY.

REMARKS ON THE DIVISION OF THE SYMPHYSIS PUBIS IN SOME CASES OF OBSTRUCTED LABOUR.

THE inefficiency of this operation as a means of preserving the lives of both mother and infant, in cases of extreme pelvic deformity, appears to have been long decided upon in the minds of most practical accoucheurs. Dr. David Smith has, however, again brought the subject under discussion in a paper of considerable research. He agrees with previous writers that symphysiotomy, as a substitute for the Cæsarean section, in cases where the pelvis is greatly deformed, "offers no increased chance of safety to the mother or child, inasmuch as in cases of distortion the diminution of space is principally in the antero-posterior diameter; and Dr. W. Hunter and others have shown, by experiments made on distorted pelves, that, to increase this diameter an inch the pubic bones must be separated three inches;" while, from a series of very carefully conducted examinations made on recently dead females by the author and Dr. Menzies, it was found that the greatest extent to which the pubic bones could be separated, without the sacro-iliac ligaments giving way, never exceeded an inch and a sixth, and that, before this space was gained, a crackling sound was heard indicative of laceration. They further convinced themselves that the capacities of the pelvis could be increased in its diameters, but least of all in the antero-posterior, by the division of the symphysis pubis; that the distance to which the ossa pubis separated from each other by the mere section of the cartilage depended greatly on the position of the trunk and limbs; that the force requisite to separate these bones was much greater than could justifiably be applied within the soft structures of a living female, such as drawing down the foetus into the pelvis, and through it; and that, when the division of the cartilage was carefully made, neither the bladder, peritoneum, nor urethra, were in any respect injured. Still, Dr. Smith considers that, "had the proposer and first supporters of symphysiotomy confined its application to those cases in which the contraction of the pelvis is slight, it might have been substituted with advantage for craniotomy altogether, under certain limitations." "We can readily believe," he continues, "that cases do occur in which the obstacle to delivery is too great to be safely overcome by the use of the forceps, and where the increase of even less than the quarter of an inch to the contracted diameter might enable the child to pass alive—in short, where delivery is barely impracticable by the forceps, and where it just becomes

necessary to open the head. Thus—to use the language of Dr. Burns—"there is but one degree of disproportion betwixt the head and the pelvis which will admit of the division;" and, I would add, there is but one form of pelvic obstruction in which it would be justifiable to operate: I allude to that in which the brim is sufficiently large and well-shaped to permit the passage of the head of the child easily through it, but the tuberosities of the ischia approach so near to each other as to obstruct delivery—the pelvis is what is called "funnel-shaped." In these cases labour proceeds naturally, and without interruption, until the head has reached the outlet, when we find that all farther progress is arrested, and the labour can only be terminated by the employment of the perforator. Such are the only cases adapted for symphysiotomy; for where the contraction is in the antero-posterior diameter, the division of the symphysis, and separation of the ossa pubis, are less calculated to give increase of pelvic capacity than when the inlet and cavity of the pelvis are well formed, and the contraction is between the ischia. In the experiments above alluded to, we found that the increase of the antero-posterior diameter was nearly seven-sixteenths of an inch by separating the pubic bones to an inch and a half; whereas the increase between the ischia was ten-sixteenths. If, therefore, a case were met with in which, after the careful but unsuccessful application of the forceps, it could be accurately ascertained that a slight enlargement of the pelvic outlet would permit the delivery of an entire child, would it not be more justifiable to have recourse to symphysiotomy, by which both parent and offspring might be preserved, than to sacrifice inevitably the one, although such practice did afford a better chance of preserving the other, if the labour had not continued so long as to have endangered the recovery of the mother, and no uncertainty existed as to the child being alive? But in a case where the head is high, and prevented from entering the pelvis by contraction—no matter how slight—of the antero-posterior diameter, this operation ought never to be attempted, because the degree of deformity at the brim cannot be satisfactorily ascertained, and this diameter receives least increase by the separation of the pubic bones; nor should it be resorted to under any circumstances when the child is known to be dead."—*Northern Journal of Medicine*.

[Upon a question of this kind there may continue to be some diversity of opinion; but we have always felt that, where the preservation of the child involves a severe operation upon the mother which at all imperils her life, the woman should never be advised to submit herself to that danger.—ED. GAZ.]

PUERPERAL FEVER IN ANCIENT TIMES.

THIS disease appears to have been very prevalent, in the early part of the sixteenth century, among ladies of the higher ranks. Elizabeth of York, Queen of Henry the Seventh, died of puerperal fever nine days after the birth of the Princess Catherine, and after only two days' illness. Her death was so unexpected, that the physician upon whom the king depended for her restoration to health was absent at his dwelling-house beyond Gravesend, and it was in vain that Dr. Hallyswurth travelled through the night with guides and torches to his royal patient in the tower. Lady Boleyn, the mother of Henry the Eighth's queen, died of this disease.* It is by no means a decided fact that Queen Jane Seymour died from the effects of the Cæsarean section: those historians who declare that she underwent this operation are so palpably incorrect in some parts of their statements, that their authority deserves very little credit. The report of the Privy Council of the birth of Edward the Sixth, still extant, affirms that she was "happily" delivered, and died afterwards of a distemper incidental to women in that condition—probably puerperal fever. An original document respecting the health of the queen is still extant; it is signed by Thomas Rutland and five other medical men, and dated on the second Wednesday after the birth of the prince. "These shal be to advertise yor lordship of the Quene's estate. Yesterdaie afternonne she had a naturall laxe, by reason whereof she beganne somewhat lyghten, and (as it appeared) to amende; and so contynued till towards night. All this night she hath bene very sych, and doth rather appaire than amende. Her confessor bath bene with her Grace this mornynge, and hath done [all] that to his office apperteyneth, and even now is preparing to minister to her Grace the sacrament of unction. At Hampton Court, this Wednesday morning, at viii. of the clock." (Cotton. MSS. Nero cx.) The queen died at twelve o'clock that night, as we learn from a manuscript in the Heralds' College; this "departyng was the twelf day of the byrthe" of the prince. Queen Catherine Parr died at Sudley Castle seven days after the birth of a daughter. It would appear from the circumstances attending her decease, that she also perished from puerperal fever. The absurd custom of the time, which compelled ladies to remain in their chambers for a month previous to their confinement, the windows being closely hung with heavy folds of arras, doubtless, in great measure, conduced to render them liable to this malady.

* Lives of the Queens of England.

THE DAVY LAMP.

THE reckless manner in which the Davy lamp is employed by miners has been for a long time known. For instance, in dangerous workings they will take off the wire cage and trim it, unless it be kept locked—they will make a hole in the wire to allow of the passage of more light—or they will continue to work when the gauze is red hot from the effects of a blower, in an atmosphere of fine coal dust, the scintillations produced by which, on contact with the red-hot metal, suffice to cause explosions. On the occurrence of an accident by which many lives are lost, the fault is invariably ascribed to the lamp, not to the manner in which it has been *misused*. At the late meeting of the British Association, Prof. Faraday remarked that "the great source of danger was the mental condition of the miners. With regard to the present race, the case was hopeless; nothing could be done for them. Although smoking was strictly forbidden, they had been known to continue to light their pipes in dangerous workings even from the Davy lamp! He had himself, on one occasion, sat down with an open candle to watch the preparations for blasting, and when he inquired for the gunpowder, was told *he was sitting on it!* He expressed his firm conviction that, when properly used, the lamp was a complete and practical contrivance, to which he would willingly trust his own life, as he had already done on many occasions."

STATURE OF ENGLISHMEN.

At the late meeting of the British Association, Dr. King presented to the Ethnological Section a paper by Mr. Brent on the height, weight, and strength of men. It appears that there are, in 100 Englishmen of all classes—

6 ft. to 6 ft. 3 in. (very tall)	4
5 ft. 9 in. to 6 ft. (tall)	26
— 30 tall	
5 ft. 6 in. to 5 ft. 9 in. (mid. height)	40
5 ft. 3 in. to 5 ft. 6 in. (short)	26
5 ft. to 5 ft. 3 in. (very short)	4
— 30 short	
— 100.	

MEDICINAL USE OF BICARBONATE OF LIME.

DR. BASHAM, in a late number of "The Lancet," has suggested the use of bicarbonate of lime, or rather carbonate of lime suspended in water by passing into it an excess of carbonic acid, as a remedy in some cases of indigestion. There is no doubt that it is capable of acting as a useful and pleasant antacid in cases of acidity. It is easily prepared, and may be kept for a length of time in well-stoppered bottles.

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURE

ON

DISEASES OF THE TONGUE,

Delivered at St. Bartholomew's Hospital,

By W. LAWRENCE, Esq. F.R.S. &c.

[Reported by MR. HOLMES COOTE.]

THE most frequent forms of disease in the tongue are ulceration, generally superficial, sometimes more deeply seated; swelling and thickening of the mucous membrane; swelling and induration of the substance of the organ. Ulceration often exists in conjunction with swelling of the mucous membrane, and with induration of the lingual substance.

The more formidable diseases of the tongue are syphilitic or cancerous; the former being by far the most numerous. Disorder of the digestive organs is sometimes the source of the mischief, giving rise to affections, which are usually superficial, but sometimes of more serious character. I shall place before you cases in illustration of these points.

SYPHILITIC AFFECTIONS.

CASE I.—*Circumscribed Swelling and Induration, with deep ulcerated fissure of the tongue.*

Caroline Brown, æt. 26, a person of good constitution and good health, who had been for some time cook in a gentleman's family, and had since married, was admitted into the hospital on March 24th, 1845, on account of an oval circumscribed swelling on the right side of the tongue, with a deep ulcerated fissure.

When questioned respecting the origin of the complaint, she denied having had syphilis, but admitted that about three years ago she had an eruption over the body, and at the same time an ulcerated throat. She became an in-patient at the Middlesex Hospital, and was treated there for three weeks, at the end of which time she went out perfectly cured. With the exception of a slight attack of fever, she remained quite well until about a twelvemonth ago, when she noticed a small white pimple about the middle of the tongue; shortly afterwards it began to swell, being at times very painful, and it soon increased so much in size as to interfere both with articulation and deglutition. She applied to a medical man in her neighbourhood, and took a great deal of medicine, but without benefit. She then became an out-patient at the Middlesex Hospital, and attended there for about a fortnight, by which time the

swelling of the tongue had entirely disappeared. About two months afterwards the tongue again swelled, and she observed small lumps on the right side of it; she again had medical advice, but without benefit, the part becoming larger, and at the same time fissured. She was then admitted into the hospital on my recommendation, being four months advanced in pregnancy.

March 24th.—There is a circumscribed swelling of oval shape, the size of a large filbert, on the right side of the tongue: it is of pink colour, firm, but less hard than scirrhus. In its long axis and whole length there is a deep ulcerated fissure, the edges of which are irregular, but not everted, and the surface is not foul. It does not cause much pain, and there is no affection of the lymphatic glands.

To wash the mouth with alum gargle, and take mild aperient medicine; milk diet.

April 1st.—The state of the complaint is unaltered.

Hyd. c. Cretâ, gr. iiss. ter die. To continue the lotion.

15th.—The swelling and induration are much diminished, and the ulceration is healing.

She continued the treatment until April 22d, when she left the hospital, the swelling and induration having nearly disappeared, and the ulceration being cicatrised.

CASE II.—*Ulcer of the Tongue, with hardened base and raised edge.*

Frederica Mansfield, æt. 19, thin and pale, with sallow complexion, was admitted into the hospital, April 13th, with a circular excavated ulcer, the size of a shilling, on the dorsum of the tongue. It has a greyish surface, with raised edge, and considerably indurated basis. It is painful chiefly in mastication. She has no other symptoms.

The disease commenced with a hard patch on the tongue in the situation of the ulcer. She firmly denies having rendered herself liable to any form of venereal malady. She has had no disease of the skin, bones, or genital organs. Some months since she had an affection of the fauces, arising without exposure to cold, for which she was an out-patient at the Westminster Hospital: it lasted some time.

Hyd. c. Cretâ, gr. iiss. ter die. Extracti fluidi decoct. Sarsap. co. $\frac{3}{4}$ ter die.

April 28th.—The ulcer has assumed a healthy appearance, and the pain is lessened. Mouth not affected.

Pergat.

May 12th.—The hardness is now very nearly gone; the ulcer is cicatrised. The

mouth has been slightly affected by the mercury. Discharged.

CASE III.—*Ulcers of the Tongue, with hard base and raised edge.*

William Page, æt. 24, a stout countryman, states that four years ago he suffered from ulcerations of the prepuce. Two years afterwards his throat became sore, and blotches appeared over the trunk and limbs. During the last two years he has twice had discharge from the urethra. Four months ago he noticed a large round lump in the tongue, which soon ulcerated, and has gradually increased in size to the present time.

May 21st.—The right side of the tongue presents a rough ulcerated surface with everted edge, the size of a shilling. At the posterior part of the tongue, on the same side, the mucous membrane, over a space, the size of a shilling, presents a smooth red surface, free from papillæ, in the centre of which there is a deep foul ulcer, with yellow surface, and hard circumference.

Hyd. c. Cretâ, gr. iiss. ter die.

June 2d.—The hardness is gone; the ulcerations are nearly cicatrised. The small spots, yet unhealed, present a healthy granulating surface. The mouth slightly affected by the mercury. Returned to the country.

CASE IV.—*Phagedenic ulceration of the tongue and gums.*

J. Smith, a cabinet-turner, came into the hospital, Nov. 17th, 1842. Eight years previously he had suffered from gonorrhœa, phimosi, and chancres, which were treated by the active employment of mercury locally and internally, lasted for a long time, and got well at last under the use of sarsaparilla. Three years after this recovery, the tibia of one leg swelled in its whole extent, and became extremely painful. He took no medicine; the pain lasted for two years, then gradually decreased, and ultimately ceased, leaving irregular enlargement of the bone. Subsequently an ulcer formed very slowly on the back of the shoulder, and others appeared in various parts of the body; they have remained open ever since. About four weeks before admission, the tongue and gums became affected.

There are now several phagedenic ulcers of the trunk and legs; extensive phagedenic ulceration of the edge and lower surface of the tongue, and of the gums around the necks of the teeth in the upper jaw; and eczema of the right ear. He is pale and emaciated, with small weak pulse, and has not slept for several weeks.

Potassæ Hydriod. gr. iij. in Decoct. Sarsap. co. ter quotidie. Pil. Saponis c.

opii. gr. v. hora decubitus. The yellow lotion and poultice to the sores. Liniment. Æruginis to the tongue and gums. Meat diet, and porter.

At the end of a fortnight, the hydriodate and sarsaparilla were discontinued, the disulphate of quinine being substituted.

Jan. 31st, 1843.—The ulcers of the body are healed; the tongue and gums quite well; strength perfectly restored. Made an out-patient.

CASE V.—*Phagedenic ulcer of the right eyebrow; large ulcer of the tongue; enlargement and induration of both testes, with effusion of fluid into the left tunica vaginalis.*

Henry Lee, æt. 25, a pallid, feeble person, with languid circulation, and bad appetite: states that two years ago he contracted a syphilitic sore on the prepuce, which healed without treatment in three or four weeks. A year afterwards the left knee became painful, and remained so for three months. He then had an attack of pain in the right or opposite knee. As he was recovering from this latter affection (about five months ago) the left eye became inflamed, and the conjunctiva was raised into a chemotic swelling, surrounding and partially overlapping the cornea. He became an out-patient at the Moorfields Ophthalmic Hospital, where the inflammation was soon arrested; the outer half of the cornea, however, remaining nebulous, or slightly opaque. Whilst under treatment for the eye, he felt the right eyebrow, and the tip of the tongue, sore: the testicles also swelled, and became painful.

November 24th, 1841.—There is an ulcer of the right eyebrow, slightly raised above the level of the skin, one inch in length and half an inch in breadth, covered by a yellowish crust: an irregular, very painful phagedenic ulcer, the size of a half-crown, occupies the surface of the tongue, and renders articulation indistinct. Both testicles are moderately enlarged, irregular upon the surface, and of stony hardness; the epididymis cannot be distinguished in either. The tunica vaginalis of the left was filled with fluid. There are two ulcers of the scrotum; one at the most depending part, the other above it; to the latter, the body of the right testis is attached.

Potass. Iodid. gr. v. in Decoct. Sarsap. co. ter die. Lotio Argent. Nitratis (gr. ij. ad. Aquæ ʒi.) linguæ applic. Ung. Hyd. Nit. Oxyd. Ulceribus. Milk diet.

December 4th.—The Unguent. Potass. Iodid. to be applied to the swollen testicles every night.

20th.—The ulcers are more healthy, but

not cicatrised: the tongue is less painful; articulation more distinct; he can swallow food easily: the testicles nearly in the same state.

Omittat Unguent. Potass. Iodid. Hyd. c. Cretâ. gr. iiss. ter die. Decoct. Sarzæ co. ʒij. ter die. Liniment. Hydrarg. testibus.

January 20th.—He is considerably salivated; the ulcers are granulating favourably; the testicles are much smaller, and softer; appetite improved; he feels stronger.

Feb. 2d.—Discharged. The ulcers are soundly cicatrised; the tongue free from pain, and moveable; the testicles of their natural size, and much softer.

CASE VI.—*Swelling of the tongue, with ulcerated fissures.*

Michael Sullivan, ætat. 32, who had usually enjoyed good health, and was now well, with the exception of the tongue, was admitted into the hospital on Sept. 16th, with a swelling on the left side of the back of the tongue. The swelled part was red, painful, and occupied by two ulcerated fissures from half to three quarters of an inch deep, with greyish surface, parallel to the long axis of the tongue. The swelled part was firm, but not of scirrhus hardness. There was an enlarged gland near the angle of the jaw on the same side. Not having formed a decided opinion respecting the nature of the affection, I directed twelve leeches along the side of the jaw, the compound decoction of sarsaparilla, and milk diet. In a few days, a sore on the head was accidentally discovered; there was a large irregular cicatrix of the scalp, and at its circumference three or four small, nearly circular, and tolerably healthy ulcerations. Superficial ulceration was also detected in the throat. The patient stated that he had had venereal disease seven years ago, but had contracted no similar affection since; and that the sore of the head was of eighteen months' duration. Considering the syphilitic nature of the disease to be now quite clear, I ordered, (Sept. 20th), two grains of calomel, with the third of a grain of opium, twice a day. The mercury soon acted on the mouth; the tongue and the scalp rapidly healed; a superficial longitudinal fissure remaining in the tongue from the cicatrization of one of the fissures. He was discharged, perfectly well, Oct. 4th.

CASE VII.—*Deep ulcerated fissure on the back of the tongue.*

I was consulted in the middle of May by a gentleman, 24 years of age, for an affection of the tongue. It was a deep ulcer, in the shape of a fissure, on the right side of the back of the tongue, parallel and near to

the middle line of the organ, placed quite at the back part, so that it could not be seen until the tongue was protruded. It was not less than three quarters of an inch deep, and without induration of the margin or basis. It had existed about a fortnight. There was slight superficial ulceration of the tonsils. The patient, who was in perfect health, had contracted syphilis five years previously, and had experienced excoriations on various subsequent occasions, but had never suffered in the skin or throat. He had had gonorrhœa a year ago. Regarding the case as syphilitic, I prescribed two grains of calomel, with one-third of a grain of opium, three times daily. He visited me again at the end of a fortnight, the tongue being so much improved that he thought it well. He had left off the pills, from the mouth having become sore. The fissure was not quite closed. I recommended that the pills should be continued about a fortnight longer.

CASE VIII.—*Enlargement and induration of the right half of the tongue, coming on some years after a primary syphilitic sore, and followed by other syphilitic affections.*

Peter Burton, æt. 26, a weakly person, subject to scrofulous enlargement of the absorbent glands, contracted gonorrhœa about the end of June 1835. Shortly afterwards, a sore, the size of a split-pea, appeared at the orifice of the urethra, which healed in eight or nine days without particular treatment, leaving no induration behind. The gonorrhœa lasted two months, during which time he was under the care of a quack, who gave him pills containing mercury, without, however, affecting the gums. Early in September of the same year, he caught a cold from bathing; this was followed by an eruption over the whole trunk and limbs, for which he was admitted into the Lock Hospital, Sept. 15th. He describes this eruption as consisting of numerous small spots of a dull purple colour, immediately beneath the skin, never coming to the surface, but dying away without desquamation. He left the hospital cured, December 24th, but attended as an out-patient for a few weeks, for the purpose of taking sarsaparilla. From this time till 1840 he remained free from venereal disease. His health was good, and he had no ailment, except a neuralgic affection, which was cured in St. George's Hospital.

In February 1840, his throat became sore, and got gradually worse till May, when he consulted a surgeon, who pointed out to him a swelling upon the posterior part and dorsum of the tongue, near to its right margin, about the size of a horse-bean. Deriving no benefit, after an attendance of some months,

from this gentleman's advice, he became again an out-patient at the Lock Hospital; the tumor in the tongue was then as large as an almond. By the beginning of May, the throat was well, and he discontinued his attendance; the induration of the tongue, however, still remained, and towards the end of June had increased considerably so that he was obliged to return to the Lock Hospital, where he was put under a regular course of medicine, expressly for the disease in the tongue. He was improving under this treatment, when he met with an accidental injury to his head, for which he was taken into St. George's Hospital. Erysipelas of the scalp came on, and he was not fit to leave the hospital for a month. The induration of the tongue, however, had continued to diminish, and was almost gone at the time of his discharge.

In November, 1841, the swelling of the tongue re-appeared; he again went to the Lock Hospital, and took sarsaparilla for six weeks, without any benefit. The disease continued to increase up to the time of his admission into St. Bartholomew's Hospital.

March 25th, 1842.—There is a general enlargement of the right side of the tongue, extending a little beyond the mesial line, not, however, involving the apex. The enlargement, smooth upon the dorsum but somewhat irregular towards the edge, is almost of scirrhus hardness. It causes no pain, nor is it tender to the touch; but it interferes considerably with articulation and deglutition.

Hyd. c. Cretâ, gr. iiss. ter die. Extracti fluidi decoct. Sarsap. co. ʒss. ter die.

April 8th.—The swelling is decreased, and the hardness lessened.

15th.—The swelling and hardness are much diminished; the gums are becoming tender.

19th.—The gums are very sore; the mercury has affected the bowels.

Onittantur pilulæ.

Pergat cum Extract. fluid. decoct. Sarzæ. co.

20th.—The diarrhœa continues.

Haust. Cretæ Co.

22d.—The diarrhœa is relieved; the swelling of the tongue is now reduced to one half its original size, and is but little indurated. Articulation much improved.

Capt. Decoct. Sarzæ. Co.

May 3d.—The swelling and induration are rapidly diminishing.

10th.—He quitted the hospital to resume his employment. Two or three days afterwards he noticed some blotches about the body.

May 15th.—After a fatiguing walk, he exposed himself to cold whilst heated;

during the day he felt the left testicle heavy and uneasy, and on the following morning he found his legs so stiff and painful that he could not get up from bed; the left testicle was enlarged and tender. He remained in bed till May 20th, the pains in the limbs being unabated, the testicle increasing in size, and the red blotches becoming more numerous. He was then re-admitted into St. Bartholomew's Hospital.

There is a general enlargement of the left testicle, with induration, but without particular pain: the chord is thickened; the vas deferens cannot be distinctly felt; the scrotum of the same side is red, swollen, corrugated, and partially adherent; there is an eruption over various parts of the body, and particularly about the lower extremities, consisting of small red patches, which raise, but do not separate the cuticle, interspersed with a few pustules. He has pains in the limbs, chiefly about the ankles, aggravated at night, so as to deprive him of rest. No discharge from the urethra; no affection of the penis.

H. Salin. Efferves.

21st.—The bowels are not open.

Hyd. Chlor. gr. vi. Cont. Haust. Salin.

23d.—The febrile excitement is lessened; the inflammation of the scrotum subsiding; he complains greatly of the pains in the legs.

Hyd. c. Cretâ, gr. iiss. ter die. Cont. Haust. Salin.

24th.—The inflammation of the scrotum is gone; the testicle considerably smaller; the eruption fading; the pains in the limbs not relieved.

Pergat.

28th.—The testicle is much diminished in size: the upper part is extremely hard; the cord is thickened, but softer, and the vas deferens can be readily felt; the eruption has quite disappeared; the pains in the legs have left him.

30th.—The swelling of the testicle is gradually subsiding; it can be distinguished as a pyriform tumor, the chord being continued into the small extremity, which is extremely hard. The large extremity and the body of the gland are little affected. The effusion into the tunica vaginalis has been absorbed. The chord is in a natural state.

He left the hospital June 11th. The induration of the testis remained, but caused no uneasiness; he had no pains in the limbs, and his general health was much improved. The right side of the tongue was somewhat thicker than the left, but there was no induration.

Syphilitic disease of the tongue occurs most frequently in conjunction with other venereal symptoms, such as ulcerations of

the fauces or mouth, and eruptions, particularly of the scaly kind. Here the nature of the malady is too obvious to be mistaken. In Cases I. II. III. and VII. it was seen uncombined with other manifestations of syphilis. The history and the age of the patient, with the characters of the ulcer, which cannot be referred to any other origin, are quite sufficient as grounds of diagnosis under such circumstances.

The cases now detailed do not exemplify the most common form of the disease. We see more frequently ulcerations, generally of small size, along the edges of the tongue, sometimes with greyish surface, superficial or a little excavated, sometimes with slightly raised edge. Not uncommonly there is a thickened, raised, and fissured state of the mucous membrane, sometimes combined with superficial or deeper ulceration. This thickened mucous membrane may be either redder than natural or paler; in the latter case, the epithelium is thickened and opaque. A gentleman who had had a primary syphilitic sore some weeks previously, showed me an ulcer on the right edge of the tongue, very similar to those frequently accompanying the use of mercury. The surface was raised and irregular, excoriated, and partially ulcerated. There were two small superficial ulcerations of the palate, and no other symptom. These appearances were entirely removed in three weeks under the mild use of mercury with sarsaparilla.

A female, at present in the hospital, has the mucous membrane at the edge of the tongue thickened, and considerably raised, for a length of three quarters of an inch, with alteration of the epithelium, giving it a white colour. It has been in this state, with considerable soreness, for three months. I lately saw a young person with thickening of the mucous membrane on both sides of the tongue, occupying nearly the whole length of the organ. It was reddened, slightly fissured, but not greatly enlarged. There was a superficial ulcer, of elongated form, on each side, about the middle of the diseased portion of membrane. This affection, which had followed a primary sore, and was not attended with any other secondary symptom, was said to have existed in a more or less troublesome state for more than a year. I prescribed the Hydrarg. c. Cretâ, and conclude that it had the desired effect, as I have not seen the patient since.

A gentleman, 26 years of age, consulted me on account of an affection of the tongue. There was a thickening of the mucous membrane on the middle line and at the back of the organ, constituting a flattened projection of circular form, larger than a sixpence. It was redder than the rest of the mucous membrane, and had a slightly broken surface, like that of a wart. It was painful,

and smarted when acids, strong liquids, or stimulating condiments, were taken into the mouth. As he mentioned that he had felt some uneasiness about the throat, I inspected the fauces, and found a superficial ulcer, the size of a sixpence, on the side of the pharynx, behind the root of the tongue. I asked whether he had contracted any syphilitic complaint: he was surprised at the inquiry, but informed me that he had had a chancre several weeks previously, which had healed in ten days under the use of mercury. The tongue and throat soon became well under the use of that remedy.

Sometimes the dorsum of the tongue presents red patches, in which the mucous membrane is denuded of its epithelium, and perfectly smooth, but not ulcerated. These are sore when hot or strong things are taken into the mouth. They may last for a considerable time, particularly if they are neglected, getting better and worse.

There is sometimes a combination of diseased appearances in the same case. A gentleman consulted me on July 1st. There had been a primary sore ten months ago; then an eruption, which did not last long. He had been plagued with a bad tongue for the last four or five months: it had been so swelled and painful that he ate with difficulty. The surface of the organ, in its middle portion, and over more than half its extent, the dorsum and edges being included, was smooth, the epithelium being white and opaque, as if this part had been ulcerated, and partly having a raw appearance. There were three or four small superficial ulcers with grey surface at the edges and tip, and small superficial ulcerations of the lips, with chaps at the angles of the mouth. In both palms there were scaly eruptions in a slight form, but not elsewhere. This patient had frequently taken the iodide of potassium in rather large doses: the tongue would get better, but the mischief would return on leaving off the remedy. I prescribed the Hydrarg. c. Cretâ, gr. iiss. three times a day. The patient did not visit me again for a week, at the end of which time severe ptyalism had been produced, with more than the usual degree of suffering. He expressed his belief, however, that the original complaint of the tongue was better. Now (August) that the mercurial affection has subsided, the tongue is quite well, though bearing marks on its surface of the previous disease.

The beneficial influence of mercury on ulcers of the tongue, mouth, and throat, has always appeared to me to afford the most unequivocal evidence of its peculiar anti-syphilitic virtues; for while the sound mucous membrane is inflamed and ulcerated by the action of the remedy, we see the contiguous venereal ulceration altered in character and healing rapidly.

Case VIII. is a remarkable example of enlargement and induration of the tongue—a much less frequent form of disease than those just described. I have, however, seen several instances of it, and have found it give way satisfactorily to the use of mercury, as it did in that instance.

Between three and four years ago, I saw a still more striking instance in a gentleman, under 30 years of age, who had been previously, though at a considerable distance of time, under my care for primary syphilis. He had been travelling on the Continent for a year, and had experienced during the whole time great pain and inconvenience from a disease of the tongue, which had begun in a slight form as he was leaving England. He had consulted surgeons and physicians in France and Italy, and had taken various medicines without any benefit; among them was arsenic, probably given on the supposition of the complaint being cancerous. On returning to England, he begged me to arrange a consultation with two of my surgical brethren, being much alarmed at his situation. We found the tongue somewhat indurated and generally enlarged, so as to interfere with mastication, and render articulation very indistinct. The mucous membrane was thickened, and the surface irregular. There were no other symptoms. As this gentleman feared the effects of mercury internally administered, the Hydrarg. c. Cretâ was prescribed in three-grain doses. After taking about half a dozen, the bowels were much disordered, and I therefore resorted to friction. In this form the remedy agreed perfectly well, and it was followed up for several weeks. As soon as the mouth was affected, the tongue began to improve, and it had entirely recovered before the remedy was discontinued. There has been no relapse of the complaint, nor any other manifestation of disease.

A few weeks ago, I saw a patient from the country who had come to London under considerable alarm on account of a swelling of the tongue. It was confined to one side, and the posterior half of the organ occupying the substance, while the mucous membrane was unaffected. There was an ulcer in front of the swollen part. The history, and the existing symptoms, clearly showed the syphilitic nature of the affection.

I was consulted, in the month of June, by a gentleman, 25 years of age, in whom the right half of the tongue was enlarged so considerably as to impede articulation, the swelling beginning at the back and extending nearly to the apex; it was also indurated, but less so than in scirrhus. The morbid change embraced both the mucous membrane and the muscular substance, extending nearly throughout the entire thickness of the organ. The surface was red and slightly

tuberculated, presenting three or four superficial ulcerations on the more prominent points. In front of the indurated mass, and near to the apex of the organ, there was a separate lump, the size of a horsebean, with a small ulcer on the surface. The disease extended to the middle line of the tongue; the very margin of the organ, constituting the outward boundary of the enlargement, was healthy. There was no other affection of the mouth or throat. From the circumstances now mentioned, I concluded the disease to be syphilitic, and the history of the affection made the point clear enough. There had been a primary sore on the penis in October 1840; it was treated with mercury, and got well in two or three weeks. The patient, having been perfectly well in the interval, having married and had healthy children, caught cold last Christmas. The throat and tongue became sore, the latter having been ulcerated, so that smarting was experienced when salt, pepper, &c. came in contact with the part. Nitrate of silver was applied at this time, and the patient ascribes the swelling, which did not exist previously, to the application. The swelling has increased lately. There were some doubtful appearances on the face and chest, but not enough to constitute a regular eruption. I recommended a course of mercury. The mouth had become considerably affected in a fortnight, and there was decided improvement in the state of the tongue. I am not acquainted with the subsequent progress of the case.

Venereal enlargement and induration of the tongue may be confounded with cancer, in which the substance of the organ is also more or less hardened. There are several and sufficient points of distinction, so that, if the history be investigated, and the symptoms carefully examined, there will be no risk of mistaking the comparatively mild and manageable venereal affection for the very painful and, I fear, inevitably fatal cancerous disease.

I have always seen the latter begin on the edge of the tongue, generally at the middle or back part. It extends slowly into the substance, and may ultimately embrace the greater portion, or the whole organ. The hardness which, as in the scirrhus breast, is in the highest degree, renders the part incompressible; it is accurately circumscribed, so that we immediately feel the boundary of the disease. The hardness is less marked in syphilis, more diffused, and not confined in its origin to the margin of the tongue.

Scirrhus induration does not last long, nor become considerable in extent, without the occurrence of ulceration; while syphilitic enlargement may occupy one-half, or nearly the whole organ, without breach of surface.

The cancerous ulcer is deep, often with an ash-coloured or partially disorganized and bleeding surface. Sometimes profuse and alarming hæmorrhage occurs. The margin is hard, raised, and everted, or ragged and excavated. The induration is considerable in proportion to the ulceration, especially at the commencement. The secretion from the sore is thin and offensive. The induration, in syphilitic ulcerations, is comparatively inconsiderable; the surface is of better character, and the ulcer seldom penetrates deeply.

Cancer of the tongue is a hardened mass, which becomes ulcerated; syphilitic disease is an ulceration of which the base and edge are sometimes thickened, moderately indurated, and raised.

The morbid change in cancer gradually extends to surrounding parts; so that in an advanced stage the tongue is not only indurated but almost fixed. In a patient under my care in this hospital, ulceration extended from the edge of the tongue to the tonsil, and fatal hæmorrhage took place from the artery of the tonsil laid open in the progress of the ulceration. In examining this case after death, the morbid change was found to have extended through the whole thickness of the organ, which we had not been aware of during life, for the question of extirpation had been entertained not very long before the patient's death.

The pain of cancerous ulceration is most severe, and so much aggravated by motion of the organ, that articulation, mastication, and swallowing, are attended with the greatest suffering. The aid of opium is absolutely necessary to procure temporary ease. The uneasiness in syphilitic cases is comparatively inconsiderable.

The absorbent glands soon become enlarged and indurated in cancer of the tongue, while they seldom suffer in syphilitic ulceration; if they do, it is simple enlargement.

In Case I. the affection might have been mistaken, on a superficial examination, for cancer. The degree of induration and pain, and the aspect of the sore, did not correspond to that view of the subject, nor did the age of the patient. Like other cancerous affections, that of the tongue usually appears about or after the middle period of life. I have, however, seen two or three cases in which it proceeded to a fatal termination before the age of thirty. If there should be any difficulty in the diagnosis, it will be in the early period of the complaint; I will therefore mention to you two or three examples of cancerous affections of the tongue.

[To be continued.]

CLINICAL LECTURES ON SURGERY,

Delivered at Middlesex Hospital,

By J. M. ARNOTT, Esq.

Ununited fracture of the humerus, where excision of the ends of the bone had been tried without success—Partial paralysis of the hand—Amputation—State of the median nerve.

AMONG the patients discharged last week was a man of the name of Charles Campbell, a seaman, who came in on account of ununited fracture of the humerus, with the expectation and wish to have his limb removed as useless and an encumbrance to him. This man, twenty-nine years of age, when on the coast of Africa in April last (1844), on board a French vessel, a slaver, I am afraid, fell from the main top, and broke his left arm below the middle. There was no surgeon on board, but his arm was bound up, and as the bone did not knit, he contrived to get home, arriving in the river in July, two months after the accident. On the 8th of that month he went into an hospital. For five weeks the parts were kept firmly bound up in pasteboard splints, but without benefit. On the 27th of August an incision was made over the broken bone, the ends made to protrude, and a piece sawn from each. The limb was now put into tin splints for three weeks, and at the end of that time done up in gum bandages. But when these came to be removed no union had taken place. He remained in the hospital till the 7th of December, when he left. He had wished the surgeon to take it off, but he was advised to go out for a month to recruit his strength. On the 9th of Jan. he applied to me for the object already mentioned.

On examination the left humerus was found fractured below its middle, without the least union having taken place. Over the seat of this, on the outside of the arm, which was plump, was a long cicatrix, resulting from the operation done in August. The ununited ends of the bone were atrophied, tapered, rounded. They slightly overlapped, but were easily brought point to point, for such was actually the condition of their ends. There was no thickening of the surrounding soft parts, and he dangled the limb about without pain. He could raise the upper part of the humerus by the action of the deltoid and other muscles attached to it, and the action of those proceeding from the scapula and humerus to the forearm were preserved, though useless; but the power of the muscles of the forearm and hand were almost gone; he could not grasp with the latter. These last-named

parts were wasted, and to this, and their want of exercise, I was disposed at first to attribute their loss of power.

The removal of a limb for ununited fracture, and especially in a young man, is a strong measure, and I was considering whether anything and what more might be attempted in the way of obviating this, when certain circumstances connected with the state of the forearm attracted my attention, and decided me that in this case, at least, it was allowable and proper to amputate.

You have heard and saw that the forearm and hand were wasted, and at first I attributed this merely to want of use, but observing that he wore a flannel bandage on the parts, and thinking that this might have contributed to the wasting, I recommended him to leave it off, when he told me he could not; that if the limb was left uncovered for ten minutes, it became so cold that he could not bear the pain of it. At first I was disposed to discredit this, but observation satisfied me that it was true, and then the extreme care with which he had the bandage applied so as to have the limb completely and effectually covered up, from the tips of the fingers, nearly to the shoulder, was accounted for. On now examining the hand more closely, with the view of finding an explanation of this, it was noticed that he had no power of moving the thumb and two first fingers, which, with the others, were extended, but these were motionless, whilst to the ring and little finger he could give a slight impulse, a mere twitch backwards of extension, not forward of contraction. Moreover, there was no sensation in the fore and middle finger as ascertained by pinching and pricking with a pin, but there was in the thumb, ring, and middle finger. He said it felt numb all up the front of the forearm to the elbow, but most so on the ulnar side of it.

How and when did the loss of motion and sensation take place? Upon what did it depend? According to the man's account, up to the time of the operation in August, the forearm was brawny, and he had the power of its muscles, could grasp anything with the hand, and by laying hold of the broken ends of the humerus with the other, and holding them firm, he could seize and raise heavy weights with the disabled one. Since the operation, the limb had wasted, its power had decreased, and had become completely lost during the last fortnight he was in the hospital, when and whilst he used to swing a four-pound weight suspended from the hand, the arm being in splints. Of course this loss of sensation and motion was dependent on some affection of the median nerve. Could it have been injured in the operation? No; its situation on the oppo-

site side of the limb from the wound, and the character of the surgeon who operated, was sufficient to set aside this notion. Could it have become involved in the cicatrix? No; partly for the same reason as regards the seat of the wound, and further the absence of any thing like thickening or adhesion of the parts to the bone on the inside of the arm. But however this loss of nervous power originated, or upon whatever it depended, it seemed irremediable, and decided me upon acceding to the patient's wish to have his arm amputated. Considering that pressure and excision of the ends of the bone had been already tried and failed, that the ends of the bone were in a state of atrophy and pointed, it seemed idle to think of trying setons, caustic potash, the action of mercury, or anything else, when all that could be obtained, even if successful, of which there was no hope, would be a paralysed limb, extremely susceptible to cold. The man's declaration that it was not only useless but an encumbrance to him, was true in more senses than one, and that it must interfere with his getting or following any employment for the support of his family, seemed equally manifest.

The limb was taken off at the seat of fracture or non-union, so that the saw was not required. There was no false joint; the ends of the bone were united merely by a little loose fibrous tissue. Here are the parts: you see the pointed end of the bone is covered all over with a dense white solid tissue, not unlike cartilage; but on placing this tissue under Mr. Tomes' microscope, it is found to be fibrous, not cartilaginous. The other end of the bone, forming that of the stump, was seen in the operation to have a similar coating.

The state of the median nerve is very interesting. Where divided by the knife it was, and is, redder than the other nerves; then, about three-quarters of an inch below this, it begins to enlarge, soon attains three times its natural size—is, in fact, about that of the sciatic—continues thus for some distance, then gradually diminishes again to its natural diameter. The length of this enlargement is five inches and a half; its middle corresponds to the bend of the elbow, to where the nerve passes between the pronator teres and the flexor sublimus. Thus, then, the loss of motion and sensation of the parts supplied by this nerve seems accounted for by this enlargement, but not the cause of the enlargement itself. That it did not take place till after the operation of excising the ends of the bone seems certain; but in what way this was connected with it cannot be determined*.

* Campbell did well, and left the hospital, well satisfied with his loss.

Strangulated femoral hernia—Incomplete omental sac—Adhesion of its neck to that of the peritoneum—Incision of both.

Mary Haddingham, æt. 55, was admitted with strangulated femoral hernia on the right side. She had had a swelling in this situation for years, which occasionally increased in size, but which by pressure again got less, though she was never able to reduce it entirely. It was never so large as when admitted. Two days previously she was attacked with great pain in the belly, followed by sickness and vomiting. The medical gentleman who attended her treated her for spasm for two days, when, finding she had a swelling in her groin, he brought her to the hospital. She had an enema on her admission, and was put into the warm bath, out of which she had just come on my arrival. The house-surgeon had tried the taxis without success. Finding the swelling very tense, with no impulse on coughing, and very tender on pressure, it was deemed advisable to operate forthwith. The sac contained no fluid, and at first apparently only a globular piece of omentum; but on raising this up, and unfolding its lower part next to the thigh, a small knuckle of red and thickened bowel was seen under it. On attempting to get the tip of the finger, a director, and then a grooved probe, under the stricture, that is, between the omentum and sac, this was found to be impossible, from adhesions between the parts;—this was in the ordinary situation for dividing the stricture. Failing here, trial was made more inwardly, and then more outwardly, with no better success; firm and uniform adhesion existed throughout, all round the inner, upper, and outer part of the neck of the sac, which could not be penetrated or separated. The only part where the probe passed was below, between the bowel and the pubis, where, of course, nothing could be done in the way of incision. Unwilling to divide the omentum unnecessarily, I tried to get outside the hernial sac; but no. An endeavour to reduce the bowel without dividing the stricture at all, as occasionally, though only exceptionally, may be done, had been previously made.

The objection to dividing the omentum in the neck of the sac, is, the risk of hæmorrhage, the vessels being sometimes large, and throwing out blood freely, and in this situation not easily reached or tied. The hæmorrhage may also take place unperceived into the cavity of the abdomen. Yet the risk of hæmorrhage must in our case evidently be run; and it was so. The bistoury having been passed between the bowel and the omentum, the latter, with the hernial sac and stricture, was divided in the usual direction upwards and inwards. No bleeding took place, and the only difference

observed in the treatment of the wound was to wait a little longer than usual before it was dressed, in order to observe that bleeding did not occur. The protruded omentum was left in the sac when the bowel was reduced, and the integuments were brought together over it. Motions followed next day. The wound suppurated, the portion of omentum external to the ring sloughed out, and in five weeks the parts had granulated and cicatrized.

Umbilical hernia. — Complete omental sac.

Instead of a partial covering to the bowel, as in this case, the omentum sometimes encloses it, as in a bag, forming a sac as complete as that of the peritoneum, and requiring like this to be opened when strangulation takes place, and the operation is performed. Some of you may recollect an instance of this kind in a woman of the name of Ayling, upon whom I operated last winter session. This patient, who was five months gone with child, had been subject to umbilical hernia during former pregnancies, but always hitherto reducible. On this occasion the swelling had appeared suddenly four days previous to her entrance into the hospital, during a fit of coughing, was attended with all the symptoms of strangulation, and had resisted all attempts at reduction. In the operation, having opened the hernial sac, a globular mass of omentum was exposed, tense, smooth, little changed in structure, and which, from its form and the accompanying symptoms, was suspected to contain intestine. Having relieved the stricture, which was caused by the edge of the tendinous aperture, by passing a bistoury between the hernial sac and the omentum (there was here no adhesion), the latter was then opened throughout, and a loop of bowel, in which mortification had already taken place, exposed.

This case showed, amongst other points, the necessity of great reserve being exercised in carrying out the plan of operating for hernia without opening the sac. In it the hernial sac was actually opened, and the stricture divided, and yet, if the hernia, or protrusion, had been now reduced, a portion of mortified intestine within a bag of omentum would have been returned into the belly. It may be observed, it is true, that in this case symptoms of strangulation had existed for four days, and that therefore it was not one for the proposed mode of operating; but, on the other hand, we know how quickly in some cases mortification of the bowel will follow upon strangulation, even in a few hours.

Strangulated hernia.—State of the bowel and its recovery.—Question as to purgatives.

A circumstance which not unfrequently

strikes us in operating for hernia is, that persons advanced in years bear the operation well, better than younger people; or, more correctly speaking, that they recover under degrees of injury to the bowel, and other unfavourable conditions, which, in the earlier periods of life, more usually end fatally.

Prudence Brockett, a woman of 60, who was admitted and operated upon in April, was an example of this. At three o'clock the day before her entrance, as she was reaching something from a shelf, a swelling suddenly formed in her right groin, and for the first time: she had been in pain and sick ever since. The taxis had been tried, and failed. Admitted here at a quarter before 1 P.M., an enema was given, and she was put into a warm bath, but without reduction becoming thereby attainable. At 2 o'clock, the operation was performed. The sac contained bloody serum and a knuckle of intestine, of a dark mahogany colour, thick and fleshy, with spots of ecchymosis where the mesentery was attached, and also in the latter. When the stricture was divided, and the bowel returned, red-coloured serum began to flow from the belly, and continued to do so under gentle pressure to the amount of probably above a pint. Some of this being collected in a cup and set aside, entirely coagulated, more firmly than blood. It was, in fact, the fibrine of the blood with a few of the red globules in it, and less of the serum than in ordinary liquor sanguinis. This secretion from the peritoneum told against the state of the belly; whilst the condition of the protruded bowel was unfavourable, so as to raise a doubt whether it ought to be returned, which it, notwithstanding, was.

But observe the progress of the case.

At 2 P.M., the operation was performed. No medicine was given after it.

Half-past 8.—Was much relieved by the operation, and had no vomiting since until about an hour ago, when she vomited once. No motion; pulse hard.

V.S. ad ξ xij.; Hyd. c. Cretâ gr. v. quartis.

17th, 8 A.M.—Had relief from the bowels at 1 o'clock this morning, and thrice since; the last motion dark and offensive. Has not vomited again, but has felt sick.

9 P.M.—Sickness has ceased. Is in no pain. Tongue moist and clean.

Stop the Hyd. c. Cretâ.

18th.—Tongue furred. There is some tenderness of the belly, and resistance on pressure. At 12 o'clock last night, the house-surgeon, finding her tongue dry, and thinking her sinking, gave her a pint of beef-tea. She was sick after taking it. No motion since yesterday morning.

Omit the beef-tea; gruel only. Repet. Hyd. c. Cretâ. Enema Com. statim.

9 P.M.—Had one motion from the injection, and another since, natural in appearance. There is considerable redness, swelling, and tenderness of the thigh below the graduated compress and spica bandage. These were removed, and a poultice applied over the wound, which was suppurating.

19th, 8 A.M.—Is easy. Tongue moist, but yellow. No further motion.

Omitte Hyd. c. Cretâ. Enema Com. statim.

8 P.M.—Had a motion before the injection was given, and another since.

21st.—Two motions yesterday, and two the day before. Tongue moist, and less yellow. The redness of the thigh still continues, and the wound suppurates.

After this, it is sufficient to state that the hernial sac sloughed out, the wound granulated, and by the 21st of May it had cicatrised.

In the treatment of this case, and that of Haddingham, no aperient medicine was given after the operation; unless, indeed, you should consider the Hydrargyrum cum Creta as such, and yet the cases went on favourably, motions following in due course. The old doctrine was, that after the operation for strangulated hernia you could not have too many motions, and therefore purgatives were to be administered of active character immediately after the operation, and repeated till their effect was obtained. No doubt it is satisfactory to find evacuations per anum following no long time after the operation, but it is a different question whether we should always take active measures, *i. e.* give irritating remedies, to obtain these. If your finger was swollen, turgid with blood, inflamed from a ligature having been tied round it, and left there for some hours, you probably would not think, after loosening or cutting this, that the best mode of accelerating the recovery of the part was to give the hand some active occupation, and thereby irritate and excite it. But, on the contrary, you would be more like to keep it quiet, in an easy position, and to give nature fair play, to do the best for its recovery. The case is the same with a portion of bowel that has been strangulated, and is an analogous condition from an analogous cause. Thickened, full of blood, in a state of inflammation or on the verge of it, a piece of intestine in such a state is not likely to be benefitted by rough treatment, *i. e.* active aperients, irritants. Returned into its natural situation after the stricture has been divided, it is best to leave it quiet—to let it alone for some time, to allow the swelling to subside, to allow it to recover. In some cases you must trust to nature alone for the cure; in others it is advisable to endeavour to assist her, by resorting to the

means we usually employ for arresting inflammation, as was done in the case of this woman. The object to look to in these cases is the restoration of the bowel to its natural condition; if we could only insure this, we should not feel any great necessity for giving purgatives, as motions would follow of course, or, if they did not, they might be solicited by aperients without fear, as in other cases where the bowel has not sustained any injury, or undergone physical change. No doubt there is a time for giving aperients, mild ones especially, but this time, the proper period for doing so, is even of more importance than the character of the aperient; and this is a point you will do well to recollect.

Cancer of the Anus.

We lately lost, in one week, two patients affected with cancer; one of the anus, the other of the eyelids. As examples of the disease in distant and dissimilar parts, of not very frequent occurrence, and presenting various points of comparison and contrast in their symptoms, progress, and termination, it is worth while reviewing the chief circumstances of their history. When it is stated that cancer of the anus is not of very frequent occurrence, you will understand this is meant as distinguished from cancer of the rectum, which is common enough, unfortunately.

John Little, 61 years of age, originally a seaman, but for the last thirty years a gardener, sought relief on account of a fistula, he said, when he applied for admission. On dropping his trousers a very different state of affairs presented itself. There was a tumor the size of an orange projecting at the anus, and had it not been for the difference in colour, and some other circumstances, you might at first sight, from its form and seat, have mistaken it for a case of prolapsus ani.

And here let me caution you never to take the statement of a patient, male or female, but especially the latter, as to the nature of a complaint in these parts, without examining for yourselves. In their ignorance they of course make mistakes, and where delicacy or other motives prevent them from applying for relief, or submitting to the requisite inspection, they may not only be great sufferers, but lead you into serious errors. That the hint is not superfluous might be shewn by numerous examples. Let one suffice. I was sent for one evening to a lady who I was told had been suffering severely for three days from a fit of the piles, for which she had been attended by a medical gentleman who had applied leeches and used various external applications and internal remedies. On proceeding to examine the parts this was objected to; the medical attendant had not done so; no, he was not

allowed. I declined prescribing unless the permission was granted, when I found, that instead of piles, the case was one of prolapsus ani, which with some difficulty, owing to the length of time it had been down, and with considerable pain, I reduced, and to her great relief. Now this was in a married woman, the mother of children.

But one of the most absurd misnomers as to the nature and seat of a complaint occurred to my late friend and colleague, Dr. Sweatman. The wife of a gentleman with whom he was in the habit of friendly intercourse, consulted him on account of an irritation on her stomach, as she called it—some slight cutaneous affection there, he was led to suppose—and for which he prescribed once, and a second time. On the third occasion, dissatisfied with the lady's account, and with himself for not having previously ascertained what the complaint really was, he overcame her reluctance to an examination, and this "irritation on her stomach" turned out to be a large crop of warts on the perineum and adjoining parts of the vulva. So that a lady's stomach is a very extensive region!

To return to our case of cancer of the anus. The tumor was of a globular form, attached by a broad base, had an irregular surface, of a greyish yellow colour generally, but in parts red, and secreting from the whole a very offensive discharge. The aperture of the anus, which was not at once discovered, occupied the most prominent part of the surface of the swelling, not exactly in the centre, though the whole contour of the opening was involved in the disease. Although the morbid mass extended under the surrounding skin, it was apparently so distinctly circumscribed, and so moveable, as to lead to the inquiry if it might not be removed by operation. A very brief investigation of the case settled this question in the negative. On passing the finger into the bowel, which it did without pain or hindrance, although the mucous membrane was smooth and apparently unaffected, there was felt at the posterior part, about an inch and a half up, some irregularity in the subjacent tissue, and a hard nodule moveable under the finger. Then, in both groins, were enlarged glands; and, if these had not been sufficient to determine against an operation, there was the true look of cancerous cachexia which the patient had.

He represented his disease as having begun twelve months previously, as a small pimple on the verge of the anus, that it soon broke, discharged a little, and healed; that it broke again, and healed; and that this was repeated several times, whilst the part increased in size. That the swellings in the groin began four months ago, when the pain he felt therein, and the shooting pain in the anus,

obliged him to give up work. His appetite was now much impaired, and he had sleepless nights, and notwithstanding our efforts to support, to soothe, and to relieve him, he gradually got more emaciated and worn down, dying within two months from his admission, and fourteen from the commencement of his disease. Before death suppuration had taken place around the enlarged glands in the left groin, with great aggravation of his sufferings. On examination after death, besides the disease of the anus and groins, there was found a firm medullary mass, the size of an egg, on the edge of the pelvis, two inches above Poupart's ligament, on the left side, and tubercles of the same character in the liver and both lungs.

Cancer of the Eyelids.

Contrast the history of the case just given with that of Martha Tatham, as taken on her admission. This woman, who was then 66, entered the hospital so long ago as the 6th of May, 1839, with an ulcer occupying the outer angle of the left eye, and a small adjoining portion of both lids. The ulcer, which had destroyed the parts on which it was seated, had an indurated base, by which it was adherent to the subjacent bone. The edges of the ulcer were hard, and the margin of the adjoining parts of the lids had a tuberculated character. The ulcer was destitute of granulations, secreted pus, and occasionally bled. It was the seat of severe darting pain, which she described as if a penknife was being run into it. The eyeball was much inflamed, or rather was very red, the cornea somewhat opaque, and the vision almost gone, for she was only able to distinguish light from darkness with this eye. Appetite good, bowels acting regularly, but she got no sleep without opium; yet she looked fresh-coloured and well.

Three years previously she observed a small wart the size of a pin's head on the edge of the upper eyelid, close to its outer end. It did not increase much in size, but one night, about six months afterwards, it broke, and discharged a little matter by which the lids were glued together. She then scratched it, and a sore formed, which gradually but slowly spread. There was not then much pain, and a surgeon she consulted merely advised her to poultice it, and then to smear it with some ointment. Fourteen months ago the pain became more severe and deep-seated, and compelled her to leave off needlework. She then applied at an Eye Infirmary, where she was cupped and leeches with relief to the pain. Blue-stone was applied to the sore, and drops were put into the eye. Up to this time her sight was quite good, but now the eyeball became very painful: dimness of the eye commenced, and gradually increased till her sight was lost.

There was no enlargement of the glands of the neck in this case, and the patient had not the slightest appearance of cancerous cachexia. The parts might have been removed by the knife, but with the condition of scraping the bone, or removing a portion of it; but we do not urge a patient at the age of 66 to submit to an operation with uncertain results, and where we know that the progress of the malady itself is usually slow (for it is so in this situation). So as she came in under the old regulations of the Cancer Ward, she was allowed, though a case of chronic cancer not adapted for operation, to remain there when the new rules came into action, and thus we had the opportunity for six years of observing the course of the disease. The situation of the ulcer, and the extent to which it had gone, rendered the case not a favourable one for the application of any kind or form of powerful escharotics, and they were not used. A number of other remedies were tried, external and internal, but, excepting anodynes, which gave relief from pain, without the slightest influence on the progress of the complaint.

You have heard what was the state of parts in 1839; you saw what they were a few days ago in 1845. Both eyelids gone, and in their place, except at the outer angle, an imperfect, in parts irregular, in others smooth, cicatrix. The globe of the eye still in the orbit, but shrunk in size; the cornea opaque, but quite distinguishable; the ocular conjunctiva (united to the cutaneous cicatrix) thickened, red, and dryish. An ulcer with overlapping edges of integument at the outer angle of the orbit, encroaching on the temple and cheek, and which had destroyed the soft parts here, leaving the bone projecting, though covered with granulations from its periosteum. No enlargement of the glands of the neck, the colour of the face good, the functions of the stomach and bowels sufficiently well performed, as well as those of respiration and circulation; and though the patient was thin, nay emaciated, as might be expected at the age of 72, yet capable of enjoying life when relief from the severe pain was obtained by opium, or rather morphia, which in this case answered best. After all she did not die of the disease under which she had suffered for nine years, but of an accidental attack of erysipelas of the head and face.

On examination post mortem, no enlargement of the glands of the neck, no carcinomatous deposit, was found in any of the organs of the body. In the atrophic eye the cornea was opaque but distinct; the other coats and vitreous humour converted into a whitish firm tissue, more like fibrous tissue than schirrus. The projecting bones of the orbit, whose periosteum was covered

with granulations, had undergone no change of consistence, and did not present any appearance of disease. Such is the usual course of cancer of the eyelids, slow, and rarely attended with cancerous cachexia,—circumstances to be recollected in forming an estimate of the probable duration of life. Of course you understand me as speaking of schirrous cancer, which attacks the lids. I have not seen this in the eyeball, where, on the other hand, medullary cancer is common.

CASES OF FUNCTIONAL DISORDER OF THE
HEART, WHICH ARE LIABLE TO BE CON-
FOUNDED WITH HYPERTROPHY.

DR. CHRISTISON has observed a description of cases of functional disease of the heart, which he conceives have not been taken notice of by any author who has written on the subject. The cases referred to are met with chiefly during adolescence, and among young adults. The greater number that Dr. C. has seen have occurred among young adults, who do not appear to present any other remarkable constitutional peculiarity besides that excitability of the nervous system which prevails more or less in all cases of excessive action of the heart from functional causes. This disease is attended with frequent and very violent palpitation of the heart, constant violent pulsation in the præcordial region. The pulse at the wrist is firm. There is always a sense of palpitation in the chest, which together with occasional beating in the head, is particularly troublesome in bed, and, above all, when the patient lies on the left side. The sense of pulsation is aggravated by active locomotion, but not by moderate exercise though long continued. There is no marked difficulty of breathing. One peculiarity in this disease is, that the apex of the heart is felt pulsating, not as usual under the left nipple, between the fifth and sixth ribs, but directly under their costal cartilages, very near the sternum, and generally between the fourth and fifth ribs. The dullness over the region of the heart is not so extensive, and, in particular, does not reach so low down as usual. There is no sound indicative of structural change in the valves, and no irregularity in loudness or interval. This state, as well as the symptoms generally, is aggravated by sedentary occupation and hard study, and is relieved by regular exercise and such mental occupations as employ the faculties without straining them. Dr. C. is disposed to attribute these symptoms to the heart being disproportionately small in size, and to its being somewhat displaced, so that its apex lies unusually close to the parietes of the chest.

—*Abridged from the Edin. Med. and Surg. Journal.*

Original Communications.

PRACTICAL OBSERVATIONS ON THE VARIOUS FORMS OF DYSPEPSIA.

BY ROBERT DICK, M.D.

Author of a Treatise on the "Derangements, Primary and Reflex, of the Organs of Digestion, with an Addition," "Treatise on Diet," &c.

[Continued from p. 503.]

Hepatic Derangements.

THE principal hepatic derangements we have to contend with, in dyspepsia, are deficiency, excess, or degeneracy of the biliary secretion, and the painful and occasionally enlarged state of the organ, which may cause or accompany these morbid conditions of its secretion. Affections of the liver may arise from a great variety of causes. I am far from adopting all the views enunciated by M. Bonnet, in his "*Traité complet, théorique et pratique, des maladies du foie*," yet I am greatly disposed largely to acquiesce with him in the opinion, that very many hepatic derangements result from a prior *gastro-duodenitis*. Bonnet, indeed, assigns other origins to affections of the liver, as, for example, peritonitis and encephalitis; but he considers, and I think justly, that, in the majority of cases, gastro-duodenal derangements forerun and occasion the hepatic one.

Bonnet, in common with many other authors, assigns rich and fat meats, strong and heating condiments, vinous and spirituous liquids, and *purgatives* employed constantly, as causes of hepatic derangement, gastro-duodenal disorder being (as stated) immediately induced. He considers also that extensive cutaneous chills from cold air or cold water, and that repelled arthritic, rheumatic, and exanthematous disease, may in like manner, that is, by the intervention of a gastro-duodenal affection, bring on hepatic disease. On the same principle he holds that cephalitic excitement or irritation, such as violent moral agitation, excessive mental application, deep grief, cholera, may cause derangement of the liver, but still by the channel of the gastro-duodenal mucous membrane, and the previous induction there of inflammation or sub-inflammation. Broussais, to a

onsiderable extent, had previously announced the same views. In his work on Inflammation, he remarks, that in persons of great "susceptibilité gastrique," inflammation of the mucous membrane of the alimentary canal is often produced by what he calls the "concentrations centrales de la période de froid" of fever. Of course he refers to sanguineous concentration, and it is obvious that such concentrations may occur under other circumstances than those exclusively of the cold stage of fever. It is equally obvious that the liver, from its vascular character, and from the fact of its being the organ through which much of the abdominal circulation passes, must be, from the causes referred to, extremely liable to congestion and tumefaction. It is no less certain that this state of the liver must quickly give rise to similar congestion of the mucous membrane of the stomach, duodenum, and intestines.

If we are to credit Liebig, a man secretes daily from seventeen to twenty-four ounces of bile*. According to the views of this physiologist, the use of the bile is far from being merely to excite the peristaltic action of the bowels; which, indeed, is by no means, a novel idea, But not so is his allegation that bile is not in any sense or degree an excretion; that it wholly or nearly wholly disappears in the intestinal canal; that even when injected into the rectum it is entirely taken up by the absorbents there; and that in the fæces, no more than one-fiftieth part, bearing the slightest resemblance to the secretion of the liver, can by careful analysis be detected. According to Liebig, the whole of the bile is digested; its carbon being destined to form a combustible material, and to unite with oxygen in the course of the circulation; its soda, after again forming an ingredient of the new blood, being finally eliminated by the kidney in the form of phosphate, carbonate, and hippurate of soda.

As to Liebig's idea that the *whole* of the bile is absorbed, and that it has no stimulant effect on the intestines, it would be obliging if he informed us how it happens that, on a ligature being placed on the ductus communis choledochus, the alvine evacuations are white, constipation results, and that, simultaneously, jaundice manifests itself.

* We consider this estimate excessive.

Bile appears to be an alkaline fluid. Schultz found that when of considerable spissitude, a dram of acetic acid was required to neutralise one ounce of bile; when of a less degree of spissitude, one-third or one half of a dram sufficed.

Bonnet's view, that hepatic is very frequently the result of gastro-duodenal derangement, is undoubtedly very correct; and his belief that the latter affection is in a majority of cases caused by rich and stimulant food, and vinous and spirituous drinks, is equally so. Practically, we find that good living and sedentary habits, or, at least, less exercise than ought to be taken, are the sources of a large number of cases of biliary disorder. We believe that the tumid and painful condition of the liver which often characterises such cases, is, in part, actually due to repeated temporary occlusion of the duodenal extremity of the ductus communis choledochus, in consequence of the hyperæmic state of the duodenal mucous membrane. Mr. Annesley, in his work on the Diseases of India, states that the superior cholagogue property of mercury is simply owing to its peculiar power of rendering less viscid and tenacious the mucous secretion which may obstruct the orifice of the common duct, and that by doing so, the mercury effects "a discharge of bile into the intestine, which was only prevented by the *mechanical* obstacle in its way." Though we differ from Mr. Annesley in his views of the action of the preparations of mercury as emulgent of the biliary secretion, yet we willingly assent to the conjecture, now quoted, as to one of the modes in which chronic irritation, and a consequent viscid state of the mucous secretion of the duodenum, may operate in preventing a free excretion of the bile. I have already, in a former paper, referred to the opinion of M. Ribes, that chronic irritation of the stomach and duodenum is probably occasionally propagated from these parts along the coats of their veins to the substance of the liver.

Although Liebig is disposed to view the liver as in no measure a depuratory organ, or holds, at least, that the carbon of the bile returns, in the first instance, into the circulation, yet (even supposing his views to be correct*)

* In interposing this qualifying parenthesis, I do not trust to my own very humble persuasion

there is no reason to doubt that, by error, or excess of diet, the blood may acquire a character, which may give rise to irritation of the liver, as a secretory organ. It is extremely possible that from the causes alluded to the blood may occasionally be *more* than normally charged with the carbonaceous principle; if so, this must either be inadequately eliminated by the liver, producing, doubtless by its retention in the circulation, some ill effects; or, if fully eliminated by the liver, it must, being in excess, cause, to that organ, some degree or other of irritation or debility. It seems equally obvious, that if, on occasions, considerably more carbon is excreted by the liver than is required as a combustible material, it is not likely *all* to be re-absorbed; and hence it seems improbable that biliary matter should not, occasionally at least, form part of the alvine evacuation. Dr. Prout expresses himself as if he took for granted that bile formed part of the alvine evacuations.

In derangement of the liver, the evacuations, as M. Roche justly observes, present a great variety of appearance and quality; being "black, green, acrid, acid, corrosive, pitchy." In yellow fever, the black vomit is, to use Dr. Prout's words, said to be "powerfully acid;" who adds, "the nature of this acid has not been satisfactorily ascertained, but it is probably the lactic acid, or it may be an acid of a much more injurious character." The doctor has not, however, examined the nature of black vomit, and we presume regards the vomited fluid as of gastric, not hepatic origin.

It occasionally happens that the affection of the liver is local, and it obviously is of therapeutic importance to ascertain, if possible, whether the he-

patic affection be general or partial, and, more especially, if it be confined to the part of the liver adjoining the pylorus and duodenum, as, in this case, the probability is greater that the hepatic irritation has been propagated from these parts. In such diagnosis, M. Roche's remarks may be of service: When the convexity of the liver is the site of inflammation, the pain is acute, lancinating, pungent; is augmented by inspiration, cough, and pressure; and it is when this, to wit, the convex surface of the liver, is inflamed, that the patient has pain in the shoulder and neck, and feels pain on lying on the *right* side. When the *concave* surface of the liver is inflamed, the pain is more profoundly seated than in the former case; greater pressure is required to develop pain; pain is not propagated to the neck and shoulder; *vomitings more frequently occur, and gastric derangement*; there is seldom cough or pain on inspiration, and the patient lies more easily on the *right* than on the left side. M. Roche allows that the diagnosis is difficult, but gives two cases in which he effected it correctly; and adds another illustrative of the practical importance which may occasionally result from an accurate diagnosis. This was a case of extensive suppuration of the convex surface of the liver, from which the slightest incision would have freed the young woman in whom it occurred, and saved her from the fatal issue which followed.

In chronic derangements of the liver, of whatever origin, it often happens a peritonitic affection sooner or later becomes complicated with these. The peritoneal coat of the liver first becomes irritated and sub-inflamed, and this condition may extend to the parietal peritoneum. The peritoneal covering of the duodenum and stomach may become similarly involved by the extension of irritation in this way, as well as *ab intra* by the connecting mucous membranes of these several organs, constituting the complicated affection named gastro-hepato-peritonitis by Bonnet. When, in chronic derangement of the liver, tenderness on pressure is felt in the hypochondrial region, we may infer that the hepatic or parietal peritoneum has begun to participate, in some degree, in the subjacent parenchymatous affection. In the

that many of Liebig's views will eventually be found to be either entirely fanciful, or, at least, only very partially true, but I am guided also by the opinion of one, who, as a cautious, candid, scientific, original chemical observer, experimenter, and theorist, is not second to the Professor of Giessen, or any other contemporary philosopher. "Some of the views," writes Dr. Prout, in the last edition of his work on Stomach and Renal Diseases, "advanced by this distinguished chemist (Liebig) in his last work, are the same I have long advocated. Others of his views are directly opposed to mine, and seem to me to be neither susceptible of proof or even probable." Without seeking to underrate the deserts of Liebig, I must be allowed to think that in the incessant laudations of the last five years, it seems to have been forgotten that Britain once possessed a Black and a Crawford, and now possesses a Prout.

peritoneal complication, also, of hepatic derangement, decubitus, on the *right* side, is attended with pain. That the stomach and duodenum participate in the affection of the liver, we infer from the presence of nausea, vomiting, thirst, &c. The parenchymatous hepatic affection is proved by dull, deep-seated pain in the region of the right hypochondrium or of the epigastrium, with a feeling of fulness, painful decubitus on the *left* side, bitter taste in the mouth, yellow tongue; yellowness of the eyes and skin; either pale stools, with a costive tendency, or else loose bilious discharges.

I have already quoted Dr. Abercrombie's remark, that chronic inflammation of the liver "*may come on gradually without any acute symptoms*;" in connexion with which I may now refer to Andral's somewhat singular statement, that "a frequent (?) termination of chronic hepatitis is suppuration, which, in a great number of cases, takes place without the patient or physician being aware of it."

Beaume, in his *Traité sur l'Ictère des Enfants*, assigns as one of the causes of jaundice in new-born infants, the injury which the brain has sustained in the birth.

There is still another form of bilious derangement which was wont to be recognised, but which, if Liebig's views as to the non-excretory character of the bile are correct, must be almost banished from pathology, namely, a profuse secretion of bile, taking the form of bilious diarrhœa. Both Roche and Andral recognise such an affection, and the latter speaks of it under the name of "*diarrhée bilieuse*," and more equivocally, "*hyperémie bilieuse*:" of the exact import of this latter phrase I must own myself ignorant. Still, this eminent physician, far from thinking with Dr. Abercrombie and Mr. Tyler, that "the doctrine of bilious diarrhœa, alleged by certain authors, is not based on a single fact," distinctly admits the existence of such an affection, and describes it as one in which "the sole malady is an inexplicable (?) augmentation of the biliary secretion, which arises spontaneously in individuals of the bilious temperament."

Treatment.—In painful and tumid liver, with pale or white stools, we must have recourse to leeching, cupping,

phlebotomy, and blistering, according to the degree of tenderness on pressure, or acuteness of pain; pills of blue pill, colocynth, hyoscyamus, and ipecacuan; draughts containing colchicum and taraxacum; nitro-chloric acid pediluvia, repeated; a circumspect but not greatly reduced diet, though wine and malt liquors are, for the time, to be abstained from.

In painful and tumid liver, with bilious discharges, large warm cataplasms over the hepatic region, abstinence, or rice gruel, bloodletting and blisters, ought to be resorted to, if the violence or dull obstinacy of the pain give reason to suspect parenchymatous and peritoneal inflammation.

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[To be continued.]

HUMAN EXCREMENT AS MANURE.

HUMAN excrement may be regarded as a most valuable manure. In countries where much attention is paid to agriculture, it is eagerly sought after for this purpose. In Flanders it is even an article of commerce, and is there much employed as a fertilizing agent in the vicinity of all the populous cities. The Chinese are in the habit of collecting human fæces in cisterns, arranged at regular distances along the most frequented high roads. Old men, women, and children are employed in working up the manure and laying it around plants. The fresh excrement is sometimes mixed with clay and made into bricks, which are dried and powdered, and then spread over the soil. Owing to this practice, the fields in China are but little infested with weeds; while the plants which are cultivated, thrive. The quality of this excrement as a manure depends much on the nature and abundance of the food consumed by the individuals by whom it is voided. In relation to this subject, M. D'Arcet has reported the following singular fact. An agriculturist bought up, for the purpose of manure, the soil of the privies belonging to the establishment of one of the most fashionable *restaurateurs* in Paris! Encouraged by the success which attended this speculation, and wishing to extend his experiments, he entered into a contract for the whole of the night-soil derived from several Parisian barracks. This, however, turned out a loss, for the military excrement was found to be very inefficient as manure.—*Boussingault, Economie Rurale.*

CASE OF
POLYPOID TUMOR WITHIN
THE UTERUS,

OF UPWARDS OF TWENTY YEARS' DURATION,
SUCCESSFULLY TREATED.

By G. PEARL, Esq. Surgeon, Windsor.

MRS. L., of Windsor, aged 46, presented the following as the previous history of her illness. The catamenial function was not established until she had nearly attained her twentieth year, and after the long-continued use of emmenagogue remedies: no regular periods of recurrence were observed, and the discharge soon became excessive, and at length seems to have been replaced by uterine hæmorrhage of frequent occurrence. Her health became completely interrupted by the repeated hæmorrhage, and although remedial measures were constantly had recourse to, no direct benefit resulted. During the five-and-twenty years that have elapsed since the first occurrence of her hæmorrhagic disease, she has been subjected to various forms of treatment in London, Edinburgh, Paris and Germany: her disease, however, became more and more confirmed, until, at the end of the period alluded to, she was left powerless, blanched, and with a marked tendency to dropsical effusion. Local symptoms had kept pace with the general, and at the time of my being first called to her on December last, she presented prominent indications of structural disease of the uterus. From her unwillingness to admit of an internal examination, my opinion was but conjectural, and I therefore advised her to apply to an obstetric physician in London.

In the beginning of March last I was again consulted, and found that she had applied to a metropolitan physician, who examined her both externally and by the vagina, but who (according to her account) gave the rather vague definition of tumor to her disease, and had prescribed iodine in large doses: I then requested to be allowed to examine, and found a large and hard tumor in the lower part of the abdomen on the right side, extending from the right groin to a level

with the umbilicus. On examination by the vagina the body of the uterus could be readily felt, and it was apparent that it contained a large solid substance; but in consequence of the obliquity of its position the neck and mouth of the uterus could not be reached by the finger. I repeated the examination a few days afterwards with the same result. During the whole of this time she had continued to suffer from almost constant hæmorrhage, occasionally passive, but frequently assuming a most severe form, and often threatening a fatal result: she had constant pelvic pains, which had latterly assumed an expulsive character, together with occasional difficulty in micturition and defecation.—in addition to which there were neuralgic pains extending along the thighs and around the pelvis, the result of the mechanical pressure exercised by the enlarged uterus.

In the beginning of April, Dr. F. Bird came from London, and on making a vaginal examination the mouth of the uterus could be reached, and a polypoid tumor detected partly extruding. Ergot of rye in small doses was then administered, but the pains produced by it were so violent, and the flooding so great, that it could not be persevered in; but the expulsive pains continued with great severity, the effects of which were to further extrude the tumor to within a short distance of the orifice of the vagina. At the time of the ergot being given, it appeared probable that the peculiarly direct action of that substance might tend to the further protrusion of the intra-uterine mass, and thus facilitate the object in view, viz. the removal of the disease by operation.

On April 20th, Dr. F. Bird again saw the patient with me, at which time her condition was as follows:—The whole surface of the body was quite blanched, the extremities of a very low temperature, a very feeble hæmorrhagic pulse, the action of the heart irregular, the abdomen somewhat distended and flatulent; a tumor equal in size to the foetal head occupied the hypogastric and partly the right iliac region; the tumor admitted of motion from side to side, and by introducing the finger per vaginam, it was obvious that the abdominal tumor was in fact the enlarged uterus. Hæmorrhage was still going on, accompanied by the

passage of large coagula: all the symptoms before described were present, the same in kind but more urgent in degree. Examination per vaginam detected the enlarged uterus nearly filling up the pelvic cavity, the whole organ having lost its pyriform shape, and assumed an irregularly spherical outline: this was open to about an inch and half, its lips thin, but hard, partially protruding: the polypoid mass within could be felt to the touch varying in its degree of hardness, and in some parts breaking down by firm pressure and bleeding; it seemed to possess sensation in an imperfect degree. Dr. F. Bird and myself now passed with difficulty a ligature round the upper part of the tumor within the cavity of the uterus; this was effected by means of two canulæ curved so as to form segments of a circle equal as nearly as could be determined to the circumference of the tumor. The passage of the ligature was attended with great and unusual difficulty, in consequence of the enormous size of the polypoid growth and contracted state of the *orifice* of the vagina, as well as of the extreme irritability of the patient. On tightening the ligature all hæmorrhage ceased, and in two days the upper part of the tumor was found to be divided: the mass rapidly putrified, and in eight days from the application of the ligature it was all expelled.

It was difficult to estimate the exact weight of the tumor, but from its large size, and the quantity of the putrescent masses passed per vaginam after the escape of the ligature, it must have weighed about three pounds.

In proportion as the putrescent masses were expelled from the vagina the abdominal tumor decreased in size, and at the expiration of six or eight days could no longer be felt.

Within two or three days after the removal of the tumor, gastro-enteritis in a chronic form (which she had suffered from since she took iodine, but which was masked by the more formidable nature of her uterine disease), became very prominent, which, combined with the great debility and bloodless condition of the patient, rendered her recovery of much doubt; but by the use of medicines and a bland, but *solid* diet, these symptoms were subdued, convalescence was soon fully established, and she is now

in better health than she ever before remembered.

A vaginal examination made about three weeks ago, afforded the following result: uterus of natural size, cervix rather shorter than usual, os small and nearly quite closed; the whole organ somewhat prolapsed, apparently from the lax condition of the vagina, which was capacious, with but few rugæ: slight leucorrhœal secretion.

Windsor, July 14, 1845.

FUNCTIONS OF THE PANCREAS, AND ITS
INFLUENCE ON DIGESTION. BY MM.
BOUCHARDAT AND SANDRAS.

THIS memoir is a supplement to the researches of the authors on the liquids in the digestive apparatus, which contain a principle analogous to diastase, the existence of which they announced in their previous memoir. The authors conclude from their researches that the pancreas is the organ which, in animals living on aliment containing fecula, principally secretes the fluid containing diastase suited to dissolve the food, and allow of its absorption and assimilation. MM. Bouchardat and Sandras do not pretend that the fluid containing diastase is secreted by the pancreas exclusively. The observations of Leusche on the saliva are accurate, and that liquid participates in the properties of the pancreatic secretion. The conjectures of Galen respecting the pancreas are thus confirmed. The authors' researches on digestion, which have been carried on for several years, lead them to reject the theories of digestion admitted in the schools. Every kind of food is not, as is continually stated, converted into chyle. Experiments prove that the digestion of protein and of gelatinous substances (fibrin, albumen, casein, gluten, gelatine, &c.) is *chiefly* effected in the stomach; that the dissolved aliment is immediately absorbed in that organ, and carried into the blood; this constitutes *stomachal digestion*. Fatty substances, liquefied by the temperature of the animal, are converted into an emulsion by the bile, are absorbed by the lacteals from the intestines: this constitutes *intestinal digestion*. Aliment containing fecula is dissolved by means of a principle analogous to diastase, secreted chiefly by the pancreas; its solution commences in the stomach, but is chiefly accomplished in the intestines; and the resulting liquid is absorbed, not by the lacteals, but partly by the vessels of the stomach, and chiefly by the minuter ramifications of the vena portæ: this constitutes *mixed digestion*.—*Gazette Médicale*.

ON "RADIATED" OR "SECONDARY" SENSATIONS.

By DR. CHILD,

Physician to the Westminster General
Dispensary.

[Concluded from p. 681.]

In a state of health, impressions conveyed by a nerve to the brain apparently stop there, and excite direct sensations only; or, by being reflected, in a few instances, they constitute natural or healthy sympathies. But in disease, these secondary effects increase greatly, both in number and severity, and are often the worst symptom from which a patient suffers. In the remaining part of this paper, I intend to consider some of the causes that favour secondary sensations.

Of exciting causes I need merely say, that they consist of external agents of all kinds—as blows, sounds, cold, &c. acting on the skin or mucous membrane—or of disease in the substance of a part. Except in the last case, however, secondary sensations are, comparatively speaking, not frequent, unless they be favoured by a coexisting predisposition. The predisposing causes are numerous and intricate, but they all resolve themselves into unsoundness either of the incident or efferent nerve, or of both. This unsoundness depends sometimes on local disease, as in the various secondary pains of dyspepsia; on other occasions it is due to some general morbid state of the nervous system, as in debility.

Predisposing Causes.

Sex.

Emotion, flurry, excitement, starting, fright, &c.

Weakness, or the diseases causing it. "Nervousness."

Hysteria.

Practitioners have, no doubt, observed the great frequency of secondary pains in the female sex: a fact arising probably from the circumstance of their being more liable than men to the other predisposing causes above mentioned.

I have placed emotion and hysteria among the predisposing causes, although it admits of doubt whether they ought not rather to be considered as

"exciting." For example, emotion, when excessive, may be regarded either as a disorder of the brain, in which case it stands in the place of the primary irritation; or it may operate more generally, in the same way as weakness or nervousness, by exalting the general sensibility. According to the last view, it may be supposed suddenly and temporarily to reduce the tone of the nerves, rendering them prone to become painful from the reflected influence of primary irritation. Leaving this as a question still to be settled, I shall proceed, without farther reference to it, to consider the effects of emotion in developing local sensations.

It is well known that emotion is a promoter of reflex muscular action; and that it readily causes secondary sensations also, even in a state of health, can be averred by all who have experienced the painful thrill or shudder sometimes caused by the sudden sight of objects that give a shock to the feelings. Dr. Graves, in his "Clinical Medicine," page 755, has pointed out that gastrodynia, or neuralgic pain of the stomach, sometimes obviously arises from affections of the mind, as anger or anxiety, and is not connected with indigestion. In this opinion I fully concur. On the same principle, flurry or agitation will be found to excite or aggravate most of the secondary sensations, whether special or common, that come under the notice of the practitioner. Depressing emotions, as is well known, produce a feeling of weight, anxiety, or sinking, at the pit of the stomach; and occasionally this uneasy sensation becomes chronic, and lasts for months, being made worse by the slightest flurry or excitement, as well as by other causes.

I have already said that the predisposing causes resolve themselves into a morbid state of irritability of the primary or secondary nerve, or of both.

1st. To illustrate the effects of the first of these causes, I may refer to the nerves of the stomach, which, although in themselves little capable of pain, acquire in dyspepsia, to a high degree the power of exciting it elsewhere. In fact, all, or nearly all, the pains observed in that complaint are of a reflected or secondary character: as familiar examples I may point out the various kinds of headache, or the aching, sharp, and other pains, felt about

the sternum, or in the abdomen. Dyspepsia also offers to our notice many less common sensations, precisely similar in their nature. Thus, out of a great many examples, I may allude to the case of a patient who was invariably seized with severe twinging pain over the vertebra prominens the instant that any food that disagreed was introduced into the stomach. The symptom *came on* in the course of dyspepsia, and having remained for several weeks, it *ceased* altogether when the nerves of the stomach regained their healthy tone. In other instances of morbid sensibility of the stomach, I have found that drinking a little cold water was immediately followed by a stitch in the side. As additional examples of secondary sensations from disorder of the primary or incident nerve, I may mention pain in the knee from morbus coxarius, of the penis from calculus in the bladder, of the mammæ in uterine disease.

2dly. When a part is diseased, or has been recently the seat of disordered action, its nerves are apt to retain, for a longer or shorter period, a proneness to painful secondary sensations, excited by perfectly sound nerves at a distance. To illustrate this point I may allude to the case of a gentleman, lately under my care, who had an enlarged and tender prostate. He said that on various occasions, as, for instance, if the door of his bed-room were suddenly opened, or if he plunged his hands quickly into cold water, or if he received a slight blow on any part of the body, a sensation was instantly felt at the perineum, or, as he expressed it, the pain "rushed" to the seat of his disease.

The next example shews the same effect in a different situation. A gentleman who had suffered from numerous attacks of gout, and whose feet did not quite recover their soundness during the intervals, informed me that on one occasion, being free from indigestion and uneasiness of every kind, he drank a glass of champagne, and was immediately afterwards seized with intense pain in his foot. When it had lasted for two or three hours, it disappeared, and was not followed by any attack of gout for several months.

To these I shall add one other example, interesting from the manner in which the facts were obtained. A gen-

tleman was lately under my care for inflammation of the cæcum and adjacent peritoneum. On the morning of the fourth day of treatment, and after the pain in the part had entirely left him, he made this remark: "I dare say you will think me very foolish, but even if you should laugh at me, I am determined to ask you the reason of something for which I cannot account. All yesterday, the moment I took a mouthful of anything warm into my stomach, whether it was tea, gruel, or broth, I instantly felt it at the place that was inflamed. Now this seemed strange to me, for I supposed that the gruel could not get down there so soon." The pain here described was, of course, "secondary," and arose in consequence of the predisposition or morbid irritability still lingering in the nerves of the part recently inflamed. If such be the true explanation, we shall naturally be prepared to expect that the feeling is evanescent. Again, the case I am relating illustrates this point. Without making any remark, I now requested my patient to repeat the experiment; but although he did so more than once, with tea much hotter than had been used the day before, he could no longer bring back the pain. The time for it, meanwhile, had passed over, and the nerves of the part had regained sufficient tone to enable them to resist so slight a disturbing cause.

From this last case arises an interesting question, into which I shall not now enter, and, indeed, if I were so disposed, there are but scanty data to work with, viz. Did the nerves of the painful part determine the primary irritation in the stomach to pass specially towards them, by a kind of affinity; or, as seems more probable, was the irritation generally diffused, while the nerves of the recently diseased part alone took cognizance of it, on account of their heightened sensibility? The solution of this point would throw light on several obscure physiological questions.

There is nothing more common than for practitioners to be asked by patients concerning the nature of pains coming on occasionally in parts recently recovered from disease. Now, after making due allowance for the fact, that such a state must predispose to direct as well as indirect pains, I believe it will be found that most of them are

secondary, like the one mentioned in my last case.

It is well known that repeated irritation, when not pushed so far as to exhaust the power of a nerve, heightens its irritability; and hence an irritant incapable of producing any effect at first, may, by repetition, at last act powerfully. In chronic dyspepsia, for example, it is only after the gastric nerves have been long subjected to daily irritation, that they give rise to the numerous secondary painful sensations observed in that complaint. A statement by Breschet appears to bear somewhat on this point. He says that the ganglions of the sympathetic, at first insensible to irritation, do, by dint of repetition, at last perceive it*. When dyspepsia, however, has been fairly established, patients sometimes shew distinctly the readiness and certainty with which secondary pain follows the primary disorder, by saying that the "head and stomach always suffer together." The gastric irritation is instantly reflected on the nerves of the head. The well-known stomach-cough is another illustration of the same fact. During, and immediately before, the catamenial discharge, reflected pains are generally aggravated. The influence of "nervousness" and weakening diseases in rendering the body prone to aches and pains of every description, is well known: hence secondary pains are exceedingly common after losses of blood, in leucorrhœa, menorrhagia, or other exhausting complaints. But as the patient gains strength, the nerves acquire a firmer tone, and "sympathize" less, as it is termed, with any local irritation that may happen to be present.

I have placed hysteria among the *predisposing* causes of secondary sensations; but there is, with respect to it, the same difficulty I pointed out when considering the *modus operandi* of emotion. So long as we remain uncertain about the real nature of hysteria, we cannot say positively whether it acts as a primary irritation seated in the brain, or (what seems to me more probable) as a general morbid diathesis exalting the sensibility of the nerves, and thus predisposing them to secondary sensations.

I need hardly remind the reader how favourable the hysteric diathesis is to

the diseases of reflex motion, all of which—from the slightest to the most severe—it either actually induces, or imitates with an exactness that sometimes leads to error in diagnosis. Now the development of secondary sensations under the influence of hysteria is not less remarkable, and the fac-simile of serious disease presented by them is even more puzzling. Painful secondary sensations, for example, are apt to occur with great intensity in the abdomen, where they resemble inflammation so much, as to be every now and then treated for it. I may remark, that although peritonitis be occasionally overlooked altogether, when latent, it is not likely to be confounded with mere "nervous" pain, and consequently, when any error in diagnosis is made, it is usually the less serious one of mistaking the hysterical for the inflammatory disease; still such an error does much harm, on account of the totally opposite plan of treatment required for each. No one can be long in the profession without witnessing instances of mal-practice of this kind, especially among the poor, the weaker and more hysterical of whom are, by their own account, so *apt* to have inflammation of the abdomen or side. A short time ago I had under my care a young person, presenting a sad illustration of the effects of this error. She applied to me for pain in the left hypochondrium, and had been repeatedly bled and cupped during former attacks of the same complaint, of which a broad zone of cicatrices round the waist, and several lancet marks at the bend of the elbow, gave full evidence. She was extremely weak, nervous, and hysterical, and her faith in the good effects of bleeding was still unabated. All she knew was, that it had always relieved her; and truly there is nothing more unfortunate, or more calculated to lead to a repetition of the error now pointed out, than the fact that nearly *all kinds* of pain receive temporary relief from bleeding; for thus it happens, that when the pain returns, as it is almost sure to do, the cupping-glasses, which gave ease before, are again and again unhesitatingly employed. Most fallacious, indeed, is the opinion, that when a pain is relieved by bleeding, it shews, either in whole or in part, its inflammatory nature, or proves the correctness of the practice adopted; for

* Müller's Physiology, vol. i. p. 662.

that surely cannot be calm good practice which, in cutting short the pain, adds to the general feebleness and the chances of a speedy relapse.

In another part of this paper various reasons were stated in favour of the opinion that the organ secondarily affected was not only disturbed in its feeling, but that some degree of irritation also was transferred to it. Many of the most remarkable examples of this fact are formed by what is called hysterical disease of the joints. The articulations chiefly, but by no means exclusively, liable to these attacks, are the intervertebral, the knee, and the hip. Not long ago I witnessed a severe example of it in the shoulder. The patient, a young man, complained of acute pain in the joint; where the tenderness was so great, that even offering to touch it threw him into agitation. He could not bear the slightest motion; there was swelling; and, in fact, if the joint had been the seat of acute inflammation, ending in ulcerated cartilages, the local symptoms could hardly have run higher. The treatment was, at first, actively antiphlogistic, without producing any benefit; subsequently the mildest remedies only were employed, and the cure took place almost of a sudden, or at least in a much shorter time than would have been required had the disease been one of common inflammation. I also know of an instance where the inner side of the foot was attacked in a similar way.

The surgeon in attendance, under the impression that there was deep-seated suppuration of the part, made an incision into it, but no matter flowed. Not liking to cut deeper, the patient was recommended to come to town. She was then seen by two eminent surgeons, who recognised the nature of the complaint, and, while making some slight application to the foot, chiefly directed their remedies to diminish the general hysterical diathesis. Complete success followed this plan, and in a short time the foot became serviceable and sound.

The medical history and general hysterical appearance of the patient will serve to put us on our guard in these cases; but there are besides several important distinctions between the common and the hysterical inflammation. Very often it will be found that the latter has come on suddenly without exposure to cold or any of the other causes usually leading to inflammation. Moreover, when idiopathic disease attacks a joint, and proceeds so far as to present the symptoms and appearances described, the complaint is always a serious one, running a tedious course, and requiring active treatment. But in the hysterical disease, although the appearance of the parts may be very much the same, the prognosis is favourable; it often ends abruptly, and a mild local treatment is all that is necessary, provided the hysteria be controlled.

SKETCH OF SOME OF THE VARIETIES OF SECONDARY SENSATIONS.

<i>Primary Nerve.</i>	<i>Secondary Nerve.</i>	<i>Examples.</i>
Common	Acting on common	Causes <i>ordinary pain</i> , as in the knee, from morbus coxarius.

It causes, also, various modifications of common sensation—
viz. Itching, as in pruritus pudendi from irritation of the rectum.

Tingling, as of the fingers when matters are passing along the rectum.

Heat or Burning, as in the palms of the hands in irritation of mucous membranes in dyspepsia, phthisis, &c.

Coldness, as of the epigastrium in dyspepsia.

Nausea, as from a sprained joint, or a foreign body in the trachea (Mr. Brunel's case).

Anxiety, sinking at precordial region from irritation of the gastric nerves.

Also many other sensations, as *twinging, pricking, trickling*, &c.

Common	On Special	As spectral illusions, sparks, or noise from irritation of gastric nerves.
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Special	On Common	As headache from odours, tickling of nose from the action of a strong light on the optic nerve (Müller)
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Common	On nerves of secretion.	Catamenial discharge from stimulants to the breast, saliva from food in the mouth.
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Special	On nerves of secretion	Flow of saliva from seeing meat, or smelling it.
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OBSERVATIONS ON
GENERAL AND ANEURISMAL
DILATATIONS OF THE AORTA,

ESPECIALLY WITH REFERENCE TO THEIR
PATHOLOGY AND TREATMENT.

BY NORMAN CHEVERS, M.D.

THE following pages contain the results of investigations upon the nature of aneurism, pursued during a lengthened period in the extensive field of observation afforded by one of the large metropolitan hospitals.

An attempt to elucidate some of the uncertainties attendant upon a prevalent and formidable disease, many leading points in the pathology of which are still undetermined, and which, when occurring in any part of the main artery, has ever baffled all the measures adopted for its cure, will, it is trusted, require no apology.

Although the facts adduced have reference principally to the more obscure features of the ætiology of the disease, still, as being the results of actual observation, and as bearing directly upon treatment, they may not be found undeserving of the attention of practical men.

Permanent dilatation of the large arteries.

There exists a natural tendency to the establishment of permanent dilatation of the aorta and its large branches in advanced life; but this does not uniformly occur in a very extreme degree, nor does it often proceed to the formation of aneurism, which is not a disease of common occurrence in aged persons, but is rather confined to the periods of early adult, and middle age.

Individuals who have lived intemperately, and followed laborious occupations, are very liable, after the age of forty, to suffer from great dilatation of the aorta, which may increase to a fatal extent without being attended with any distinct aneurism of the vessel. This dilatation occasionally affects the whole tract of the aorta and its large branches, depriving the former of its regular cylindrical form, giving its interior an uneven and sacculated appearance, almost similar to that of an inflated intestine, and rendering the latter rigid and tortuous. In other wide instances, the dilatation only extends

as far down the aorta as to the origins of the large arteries supplying the abdominal viscera; and occasionally the arch, or the ascending part of the aorta, is alone involved; but, in these latter instances, it will frequently be noticed that the dilatation is attributable to the presence of some cause of obstruction in the vessel immediately below the point at which the widening terminates, such as a thick zone of semi-cartilaginous deposits, or a ring or extensive surface of bony plates. I believe it is not unfrequently in this manner that the form of true aneurism, which is attended with equal dilatation of the entire circumference of an artery is produced.

FIG. 1.



Under these conditions, the dilated tract of artery will continue to yield more and more before the impulse of the heart; its inner coats gradually become thickened by the deposition of adventitious matter between their layers; and the rigidity thus produced probably for a time checks the increase of the dilatation; but what the parietes of the vessel thus gain in thickness they lose in elasticity, and so the dilatation presently continues. Should any portion of the canal at this time yield more than the rest, and become aneurismal, the progress of the general widening will again be temporarily delayed; but the diverticulum thus formed will, if life be much protracted, prove a new cause of impediment to the flow of blood through the vessel. Still, whether an aneurism form or not, in proportion as the artery suffers greater dilatation, and its coats lose their resilient power, so much the more will the blood have a tendency to be delayed in the canal, which at length becomes enormously widened and quite inelastic. Then the aortic valves begin to receive injury, and a complicated train of lesions is commenced in their structures, which, despite of various

adaptations which nature usually sets up in these parts to preserve their action as long as possible*, at length causes the valvular apparatus to become inefficient. The consequent failure, from dilatation, of the left ventricle eventually brings the disease to a fatal close. There are three ways in which general dilatation of the aorta may proceed to destroy life.

1. Simple dilatation may increase to such an extent as to cause widening of the orifice of the vessel, producing inefficiency of the valves by stretching, shortening, or retroverting their curtains; this is followed by pulmonary obstruction, and dilatation and failure of the left ventricle. Rupture of the artery, generally in a transverse direction, at the distance of a few lines above the valves, sometimes occurs in these cases.

2. During the progress of the general dilatation of the vessel, true aneurism may form, either occupying one side of its canal, the pouch communicating with it by a *wide* orifice (*a*), or producing a fusiform dilatation, involving its entire circumference at any part of its course (*b*).

FIG. 2.



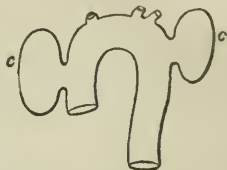
Where these forms of aneurism occur, the disease usually (though not invariably) proceeds to cause death in consequence of valvular and cardiac lesions, as in the case above. Rupture of the aneurismal portion of the vessel is a rare accident.

3. At any period after the commencement of general dilatation of the vessel, and frequently very early in that process, one or more sacculated aneurisms (*c c*) may be formed, communi-

cating with the artery by *narrow* orifices.

It is not unfrequent, in cases of this latter kind, for the symptoms of cardiac disturbance, which have until then been severe, to become diminished from the period at which an aneurism of this

FIG. 3.



description forms. Aortic aneurisms of this shape usually cause death, either by their pressure upon neighbouring parts, or by hæmorrhage; the heart often remaining but little embarrassed up to the time of dissolution. I shall hereafter endeavour to explain the cause of the remarkable difference in the effects produced upon the heart's action by these two forms of aneurism (*a b*) and (*c*).

Aneurism.

The generality of writers on aneurism concur in regarding it as a mere local disease of the vessels—attributing it either to accidental rupture, or to the occurrence of ulceration or cracking, from the presence of atheromatous or ossific deposits in their structures. It is certainly true that there are some forms of *false* aneurism which do originate almost entirely either from mechanical injury or from local disease, destroying the continuity of the arterial tissues: but I believe that such cases should be considered as exceptions to the general law which controls the formation of aneurismal enlargements of the aorta. The occurrence of a very considerable proportion of aneurisms in the smaller vessels may be accounted for in this manner, but the greater number of examples of the disease, as developed in the main artery, depend upon very different and often far more complicated trains of causes.

The causes which lead to aneurism may be divided into two sets.

1. The *first* of these includes—

Separation of the tissues of the vessels by mechanical violence, and, The ulceration of atheromatous matter, or fissure, consequent upon ossific deposit.

2. The *second* comprises various causes acting as obstacles to the free transit of the arterial blood, of which the principal appear to be—

Fixed mechanical obstructions in parts of the arterial system, whether the consequences of ordinary disease or of congenital malformation.

The delays to the arterial circulation produced by habits of violent or protracted exertion, especially in constrained positions of the body.

Obstructed conditions of the arterial capillaries.

The existence of impediment, temporary or permanent, to the circulation through the principal abdominal viscera.

Venous and pulmonary obstruction.

In offering some brief remarks upon the different varieties of aneurism of the aorta, as depending upon these two sets of causes, it will be unnecessary to dwell at great length upon those which belong to the *first* class, as their unfrequency renders them subjects of interest rather to the morbid anatomist than to the practical physician.

Aneurism arising from mechanical rupture, or separation by disease, of the tissues of the vessel.

Sudden rupture of the internal and middle arterial tunics, when their structures have been rendered brittle from adventitious deposit, appears to be a rather frequent cause of aneurism in the vessels of the extremities. Patients suffering from popliteal and femoral aneurisms are often able to date the commencement of their disease to the occasion of some violent bodily effort, during which they felt a sudden snap in the position of the artery, followed by a sensation of fulness in the part, and, in a short time afterwards, by the appearance of the aneurismal tumor. It is not very unusual to meet with patients suffering from aortic aneurism (especially where the lesion is situated in the abdominal portion of the vessel), who state that their disease appeared to originate under similar circumstances. It is probable, however, that in most of the latter cases the tearing sensation has been due, not to separation of the coats of the vessel, but to the giving way of structures external to the artery, occasioned by the sudden enlargement of a sac, which may already have existed for some time. For when these cases are examined after death there is not usually found any appearance to justify a belief that the disease has originated in a rent of the coats of the vessel.

Aneurism by rupture of the proper tunics sometimes occurs in the primary and secondary branches of the aorta—in the innominate and internal iliaes,

for example. Where such disease has been found in either of these vessels, the rupture has always taken place in a line nearly parallel to the axis of the canal.

Spontaneous rupture of all the coats of the aorta, complicated with more or less dilatation of the whole arterial tract, but independent of any distinct aneurism, is a disease of somewhat rare occurrence. About ten cases of the kind are upon record. The usual spot at which this lesion takes place is at the right and most projecting part of the root of the aorta, a few lines above the valves: occurring here, the fissure is always transverse. When the coats give way above the valves which correspond to the under surface of the arch, the lower part of the rent usually takes a nearly vertical direction, becoming oblique or transverse if prolonged far upwards.

Aneurism of the aorta occasioned by mechanical rupture of the proper tunics is a disease of extremely rare occurrence, as any lesion sufficiently severe to produce it is usually followed immediately by death. One instance, however, has occurred within my own observation, in which an injury of this kind did not destroy life.

In 1838, I examined the body of a man who died in Guy's Hospital in consequence of fracture of the spine, which had occurred about seven weeks previously in consequence of the fall of a heavy wheel upon his back while he was standing in a bent position. The broken ends of the bone were at first very much displaced, but extension of the body was made shortly after his admission, apparently with the effect of restoring the surfaces in great measure to their proper contact. Upon inspection of the body after death, the aorta was found generally healthy; but, at the distance of little more than a line below the insertion of the arterial ligament, a transverse fissure was found, extending around two-thirds of the cir-

cumference of the tube, having the appearance of a smooth rent, completely dividing the lining membrane and the middle coat, except where, at one point, a small band, formed by a separation of circular fibres, stretched across the aperture. Extravasation of blood had been prevented by the presence of the outer tunic, which, slightly dilated at this spot, and lined with a smooth structure, formed a small sac, resembling in shape, and equalling in capacity, the pouch of a sygmoid valve. The tissues of the vessel (which was rather under the average size) were in a sound condition, and did not appear to have lost their tenacity at any point. There was considerable displacement, downwards and forwards, of the upper fractured portion of the body of the twelfth dorsal vertebra. I found it difficult to account for the occurrence of a rupture in the otherwise healthy aorta of this person, otherwise than by the supposition that, as his body was in a stooping position at the time the wheel struck him, the upper portion of the fractured vertebra, being thrust directly forwards, may very probably have arrested for a moment the passage of the blood through the abdominal aorta, by forcibly compressing that vessel from behind; this occurring, it must almost of necessity result that the tube would give way, under the impelling force of the heart, at its least defended part*, notwithstanding that might happen to be situated at a considerable distance from the seat of the obstruction.

Dissecting aneurism of the aorta (which consists in a more or less extensive separation of the coats forming a collateral passage, which may or may not recommunicate with the vessel at another point more distant from the heart), appears to arise, in some cases, from fissure of the internal and middle coats of the artery; in others, from the ulceration of an atheromatous spot; the hollow thus produced being widened by separation of the tissues as the blood insinuates itself between their layers. The former is probably the original cause of that species of the disease, where the sac is hollowed between the contractile and external coats; the latter, when the blood forms

a tract between the layers of the middle tunic. The aperture through which the blood enters the abnormal canal is usually situated either in the ascending portion or in the arch of the aorta. The moment when the original rupture occurs, is generally known by the accession of great collapse, and other symptoms of sudden lesion having taken place in an internal vital organ. The patients occasionally survive the formation of the aneurism a week or two, or even longer, but death more usually occurs, either suddenly, or within twenty-four hours of the time at which the inner coats first gave way. About twenty cases of this disease are upon record. The lesion is merely a modification of simple spontaneous rupture of the vessel*.

A form of aneurism was observed by Haller, and by MM. Dubois and Dupuytren, in which the internal membrane appeared to have formed a kind of hernial protrusion through a rupture in the contractile tunic, and lined the sac which consisted principally of the external or cellular coat. There certainly must have been an error in this observation. Where the outer coat alone forms the aneurismal sac, it is often found lined with a smooth polished membrane, which appears to be continuous with the proper lining membrane of the vessel, but which has an entirely different structure, and is altogether a new formation. The authors may have mistaken this membrane for an extension of the internal coat. There are also many cases, in which a portion of the middle tunic of the artery becoming gradually absorbed, the thickened subserous fibrous tissue, still lined with an unbroken surface of the internal membrane, unites with the outer coat in forming the sac. But it appears more than questionable, whether, in case of sudden rupture of the middle coat, the internal tunics could possibly remain untorn for any considerable time: or, even were we to admit the possibility of this occurrence, whether they could sufficiently resist the impulse of the blood, to admit of being forced out in the form of an aneurismal protrusion†.

* The arrangement of the tissues of the artery at the point where rupture occurred in this case appears to render it weak in that situation.

* Very ample illustrations of this species of aneurism have been given by Dr. Peacock in a late volume of the *Edinburgh Medical and Surgical Journal*.

† Experiments are upon record in which portions of the outer and middle tunics of arteries

Aneurism is by no means a common result of the extensive softening or ulceration of atheromatous deposits in the arteries. We often see aortæ the interiors of which are indented with innumerable deep atheromatous excavations, many of which are evidently of old standing, but where the blood has not, to any material degree, insinuated itself between the tunics of the vessel. Aneurisms of the abdominal aorta below the origins of the renal arteries are of somewhat rare occurrence, while depositions of cartilaginous, atheromatous, and earthy masses, and deep ulcerations, are more frequent, and generally more extensive, at this part of the vessel than at any other. In the examination of several hundred diseased aortæ I have never met with more than one or two instances where aneurism appeared to have arisen from the ulceration of atheromatous deposit, and the origin of these even might have admitted of some dispute. In the most remarkable of these the interior of the arch of the aorta was rendered generally irregular, by elevated patches of old friable atheroma, with here and there a little plate of bone. In the descending part of the arch there was a shallow aneurismal depression, partially lined with an adherent clot. Upon the exterior of the convexity of the arch, appeared a round black tumor about the size of a hazel-nut, formed by a portion of the external coat of the artery completely filled with concentric layers of coagulated blood. This little sac had evidently communicated with the interior of the vessel by an aperture rather more than a line in diameter, but which was now completely filled up with coagulum, of the colour of glue, which presented internally a polished surface quite continuous with the lining of the vessel. This was evi-

having been dissected out, in the lower animals, the internal coat was still found strong enough to prevent the effusion of blood, and even precluded a bulging of the canal at that spot. But I believe that, even in the aorta of the human subject—to say nothing of the weaker arteries, such as the carotids or femorals—it would be almost impossible, providing the vessel was quite healthy, to dissect away a part of the middle tunic so completely as to leave only a perfectly unbroken surface of the internal and subserous tissues: for, notwithstanding the elastic power of the latter structure, it would certainly not be sufficiently strong to support alone the pressure of the column of blood within, unless its layers had previously become very considerably thickened and strengthened.

dently a small aneurism in which a spontaneous cure had been effected; an appearance precisely similar to one described by Corvisart, Hodgson, Laennec, and Bertin. It was difficult to account for the occurrence of so small a perforation through the proper tunics of the aorta, otherwise than by supposing it to have arisen from ulceration of some of the many atheromatous deposits with which the interior of the vessel was so plentifully occupied. And it is most probable that all the instances of the peculiar form of aneurism noticed by the authors above cited originated in the same manner.

Aneurism arising from obstructions to the circulation.

I believe it will be found to hold good as a general rule, (open however, to one or two exceptions, which I shall presently endeavour to trace), that those aneurisms of the aorta which involve the proper tunics of the vessel—the true and some kinds of the false aneurisms of authors—are preceded by general dilatation, attended with considerable loss of elasticity, either of the whole aortic tract, or, at least, of the entire part of the artery which intervenes between the heart and some given point distal to the aneurismal sac; while, at that distal point, whether it be situated in the vessel itself, in any of its immediate outlets, or in some far more remote part, careful investigation will usually detect the operation of a cause tending to obstruct the free transit of the arterial blood. Where the portion of the artery which intervenes between the aneurismal sac and the heart is found generally dilated, it might be objected—has not the obstruction caused by the aneurism itself produced this dilatation? In a certain degree it probably has; still, that it has not been the sole and original cause, is frequently proved by the following facts. The other traces of disease, such as ossification, &c. which accompany the dilatation of the vessel, are usually clearly of a date long anterior to the time at which the aneurism formed; and this is often borne out by the certainty that the peculiar habits or employment of the patient, which have evidently been the causes both of the general aortic dilatation and of the aneurism, had been continued for years,

and had even been followed by various symptoms of obstructed arterial circulation long before the distinctive signs of aneurism became developed. Again, it is by no means a rare thing to observe cases where, although the symptoms during life, and the appearances discovered post-mortem, prove that the aorta has long been in a generally dilated state, defined aneurismal sacs have only just begun to form in this vessel; some of these sacs being scarcely large enough to admit the end of the finger, while others are mere dimples. Lastly, it is common to find a portion of the artery beyond the sac quite as much widened as that which intervenes between the sac and the heart.

In endeavouring to trace out the leading causes of aneurism not depending upon solution of continuity, as well as of general dilatation of the aorta and its large branches, the most frequently prevailing influences will, I believe, be found to exist, either in obstruction of the arterial capillaries depending upon compression (as during habitually prolonged muscular efforts); in contraction or actual obliteration of those vessels, (one of the causes of general arterial and cardiac dilatation in aged persons); in disease of the organs through which these capillaries ramify; or in impediments to the venous or pulmonary circulation, which, if greatly prolonged, must of course inevitably tend sooner or later to embarrass the arterial current.

Careful investigation of cases will, I believe, always lead to the conclusions,—that the chief proportion of aneurisms of the lower abdominal aorta, and of its large branches, may be traced either to the existence of obstructions or of habitually over-excited action in the pelvic viscera, or to over-exertion of the lower limbs. That similar disease of the descending thoracic aorta, and of that portion of the abdominal trunk which is situated above the cœliac or renal arteries, is generally attributable to an obstructed state of the circulation through the abdominal viscera; while aneurisms of the arch of the aorta, and of the brachial tracts of arteries, are frequently attributable to the effects of prolonged muscular exertions of the arms and upper parts of the body. Several, or perhaps the whole of these causes, are, however, often found to have been more or less

in co-operation with each other in proportion as the dilatation of the vessel or the aneurism is situated nearer to the heart. It is unnecessary to dwell upon the well-known influence of particular laborious avocations, requiring a simultaneous employment of nearly all the principal muscles of the body, in causing a general tendency to aneurismal dilatation throughout the whole arterial system. There is another cause, however, which I believe very frequently operates in producing dilatations and aneurisms of the thoracic and upper part of the abdominal aorta, and which appears to have been very generally overlooked. I refer to the influence of confirmed disease, or often repeated temporary derangements of the abdominal viscera preventing the free circulation of arterial blood through their substance. I have long been in the habit of tracing the dependence of dilatation of the aorta from the cœliac or renal arteries upwards to this cause. For, in cases where the large abdominal viscera are found in a state of chronic disease, it is often observable that, from its origin to the part at which the principal visceral arteries are given off, the whole tract of the vessel has become more or less dilated; while, below that point, the canal retains its natural width.* It is, indeed, very interesting to notice the frequent coincidence of dilatations and aneurisms of the aorta and cœliac and splenic arteries, with states of hypertrophy, contraction, and old congestion, and other diseased conditions of the spleen, liver, kidneys, and different parts supplied by the abdominal arteries, where it is evident that the passage of blood through the capillary extremities of those vessels must have long been mechanically impeded. And in cases of aneurism so situated, where the above-mentioned viscera do not present such marked traces of organic lesion, it is not unusual to find that the vascular disease is accounted for by the previous conditions of the individuals; some of them having long been habituated to intemperance, while others have been the subjects of portal, pulmonary, and other venous obstructions,—circumstances which must have conducted greatly to interfere with the

* Dr. Barlow has remarked upon this condition of the aorta in cases of visceral disease, but I believe with different views from those which I am advancing.—*Guy's Hospital Reports*, Vol. i. (New Series) p. 232.

natural freedom of the arterial circulation through their viscera.

It must be borne in mind that the morbid appearances in the viscera, here alluded to, are not to be confounded with the effects of the venous congestion which sometimes occurs in those parts as a consequence of the delay to the passage of blood through the heart in extreme cases of aortic dilatation and aneurism. The appearances I have described are often to be met with in the earliest stages of dilatation and aneurism of the great artery, where no very considerable obstruction to the cardiac circulation has been present.

Having alluded to some of the principal general causes of aortic dilatation and aneurism, it still remains to inquire for the circumstances which determine the particular spots at which aneurismal sacs form. Those which I have stated cannot be regarded as the sole causes of the disease in question; they are probably not, in themselves, altogether sufficient to produce aneurism at all, although they have a direct tendency to cause general dilatation of the vessels, and to occasion the deposition of adventitious products in their tissues. The determination of the precise spot at which an aneurism forms appears to depend upon various and often accidental local causes; such as the greater weakness of certain portions of the vessel, the circumstance of parts of its canal being less supported than others by surrounding structures, or the accident (apparently of frequent occurrence under deranged states of the circulation) of an undue impulse of the column of blood being directed upon particular spots in its tract. The existence also of congenital narrowing of the vessel, or the presence within it of unyielding patches of solid deposit, whether arranged in the form of a defined ring encircling and contracting a part of the vessel, or so disposed as, in any way, to produce an obstacle to the onward passage of the blood, are to be regarded as among the most demonstrable of the sub-causes which determine the formation of an aneurismal sac in a portion of the vessel immediately posterior to such impediment. It is true, indeed, that cases may not unfrequently be met with in which, although a degree of impediment to all appearance as great, or even greater, than that observed in the above instances has

been present, aneurism of the vessel has not resulted*; and it is not always easy to prove that a particular deposit is of a date antecedent to the formation of the aneurism; still, I believe, it is equally certain that such lesions do, not unfrequently, exist in the relation of cause and effect.

A general idea prevails that aneurisms almost invariably commence in those parts of a vessel which are entirely occupied by adventitious deposits, and that the yielding of the arterial tissues depends upon changes produced in them by those diseased products. This mistake has evidently arisen from the circumstance of solid deposits appearing in great number within most aneurismal arteries. And yet it seems extraordinary that the fact should never have suggested itself to observers, that arteries which are thickly beset with old and unyielding deposits, and are thereby rendered inelastic, brittle, and rigid, are physically not in a condition to become the seats of diverticular aneurisms formed by the yielding of their tissues.

It may be thought a singular statement, but it is one which I have had opportunities of confirming for several years,—that I believe the diverticulum usually commences in that portion of a diseased and thickened vessel which is *least* affected with so-called morbid deposit, and which has, to all appearance, remained the most healthy up to the time of its becoming dilated. For when any isolated part of a generally thickened and inelastic artery has not been made rigid by cartilaginous or earthy deposition, it remains the most dilatable and yielding portion of the canal, and is thus liable to suffer aneurismal distension whenever its middle tunic becomes thinned, as it eventually will, in consequence of the continual pressure of the column of blood upon it; this being rendered more intense by the impeded state of the circulation

* The degrees of impediment to the circulation produced by the presence of a fixed obstacle are not always proportioned to the mechanical extent of that obstacle;—the amount of obstruction having relation to certain conditions of the circulatory system generally. Thus, for example, it is easy to perceive that a considerable obstacle to the circulation through an artery would not occasion by any means so much distension of the portion of the vessel behind it when the heart acted tranquilly and with moderate power, and where the volume of the circulating fluids was natural, as it would do if the patient's system were in a plethoric state, and the cardiac action were increased by hypertrophy and excitement.

which we have shown to be so frequent in these cases. I have had frequent opportunities of examining aneurismal dilatations of the true kind in their earliest stages; the appearances which they offer are principally of the following description, and, upon observation of such instances, I have formed the views which I now submit. The whole tract of a vessel may have been rendered thick, rough, and inelastic, by adventitious deposits, except a single isolated spot which remains smooth; here the tissues are pliable, and appear scarcely at all diseased; this spot, however, is beginning to yield in the form of a slight aneurismal pit or depression.

In another vessel several thick plaques of bony or other solid deposit are observed to be surrounded by a portion of smooth and elastic arterial surface, the remainder of the canal being considerably diseased;—the circle of surface surrounding the plaques has begun to yield outwards, and a sac is forming, including within it the bony plates. This mode of commencement is, however, less frequent than the first; it is rather unusual to see any very marked traces of foreign deposit beneath the living membrane of an incipient aneurismal sac, the surface of which is usually pliable, if not smooth. The circular entrances of aneurismal sacs of the aorta are generally observed to be surrounded with firm unyielding bosses.

I believe that a great error has always prevailed in considering the deposition of semi-cartilaginous and earthy plates between the layers of the subserous tissue of dilated arteries as an altogether *morbid* condition; it is highly probable that, in a majority of instances, the formation of dense ossific plates within an artery, through which the circulation has long been obstructed, occurs as a wise design of Nature to prevent the occurrence of rupture or aneurism of the vessel; to patch, as it were, and hold together, the yielding structures, and to check further dilatation. Even in very young persons the aorta is sometimes found thickened, under aneurismal states;—but, in individuals of advanced age, the vessels are frequently seen converted almost into bony canals, yet without presenting the slightest appearance of true aneurismal dilatation. I must again repeat that the presence of thick and tough

masses of semi-cartilaginous or earthy deposit, extending completely over a portion of the walls of an artery, must altogether prevent the coats of the vessel from undergoing circumscribed dilatation at that spot, and it is evident that, were every part of a diseased artery to be equally the subject of such deposit, it could never become the seat of true aneurism, however liable it might be to ulceration or fissure of its proper tunics.

There is one way in which I have seen an isolated deposit assist in producing aneurism in an artery which, although considerably dilated, was not, upon the whole, very much diseased. It was, where a wide patch of semi-ossified matter occupied the centre of an aneurismal depression which had formed at the upper part of the ascending arch. This plate appeared to have been the cause of the aneurism by acting as an unyielding *point d'appui* to the ascending column of blood.

It must not, however, be overlooked, that instances occasionally, though rarely, present themselves, in which, although the patients have died of large aortic aneurisms, the disease is found to have been confined to a very limited portion of the vessel, the remainder of that canal not being generally dilated, or in an otherwise unhealthy state. This condition of things for the most part occurs in young persons; the aneurism is usually situated in the abdominal part of the vessel, and is found to have commenced in, or near, some one or other of the large visceral branches. Here the absence of general dilatation appears to be attributable, principally, to the great elasticity which the vessels possess in young subjects, which enables them to recover their due calibre, even after they have been long submitted to overdistension, providing that, during the presence of such distension, the structure of the middle tunic has not undergone absorption or other lesion. The absence of interstitial thickening may probably be accounted for by the fact, that, in very many young persons, the tissues of the vessels will bear almost any amount of stretching without becoming occupied by solid deposits. This, however, must depend much upon constitution, as the reverse sometimes occurs.

[To be continued.]

MEDICAL GAZETTE.

FRIDAY, AUGUST 22, 1845.

ONE of the most extraordinary facts in the present day is, that in spite of every improvement in the arts and sciences, of the diffusion of education, and the cultivation of all kinds of intellectual knowledge, abstract and special, men are just as liable to be imposed upon as ever. This disposition to cherish imposture is not confined to the ignorant and uneducated; it prevails, we are assured, extensively in that class which ought, by position and education, to set a better example. In this we have a psychological problem difficult of solution; but in the meantime, it is clear that so long as this kind of patronage is afforded, the worst forms of quackery must continue to flourish.

The recollection of Perkins's metallic tractors had scarcely died away, when the same species of absurdity appeared among us in another form. Galvanic rings, and galvanic belts, as they are called, have been manufactured and sold to an incredible extent, and have been worn by all classes, for the cure of diseases "which," as the advertisements run, "the Faculty have pronounced incurable." The rich, it appears, are cured by gold and silver, the poor by zinc and copper; so that we have an accommodating adaptation of the metals producing these alleged galvanic effects! We have heard from the lips of an otherwise well informed man, of chronic rheumatism of many years' standing having been cured in a single night by the patient wearing on her finger a slip of zinc enclosing a piece of copper wire! Medical treatment, it was stated, had entirely failed to remove the disease; but the patient lost her rheumatism in a few hours after wearing one of the "galvanic" rings! This of

course was sufficient to justify the inference in the mind of one evidently not capable of distinguishing the *post hoc* from the *propter hoc*. When it was suggested that the most delicate galvanometer would fail to detect the evolution of any electric fluid, under such circumstances, it was replied, that the quantity evolved at any given moment might not be thus estimated, but that the time during which the ring was worn would make up for the apparent weakness of the current. Yet the individual who thus suggested explanations for results depending obviously on other causes, easily appreciable by an unprejudiced mind, could not be brought to understand that in all the motions of the body, or in the common practice of carrying different metals about the person, a far greater amount of electricity is constantly extricated than in the wearing of a metallic ring or belt.

In contemplating the success of these "galvanic" impostors, we are inclined to ask, whether it be not part of the policy of a Government to protect its subjects from gross imposition. Henry VIII. and James I. made witchcraft and sorcery, felony without benefit of clergy! "The invoking, consulting or covenanting with evil spirits,—the taking up dead bodies from their graves to be used in any witchcraft, sorcery, charm, or enchantment,—the attempting by sorcery to discover hidden treasure, to restore stolen goods or provoke unlawful love," were punished by the pillory and imprisonment for the first offence, and with death for the second. These Acts continued in force, to the terror of all the ancient females in the kingdom, until the reign of George II.: on their repeal, it was held to be a misdemeanor for persons to use witchcraft, tell fortunes, or discover stolen goods by skill in the occult sciences, and such impostors are now

summarily punished as common cheats. By a statute passed in the reign of George IV., it is enacted that if any person shall by any *false pretence*, obtain from any other person, any money, &c. with intent to cheat or defraud any person of the same, every such offender shall be guilty of a misdemeanor, and shall be liable to fine, imprisonment, or transportation. Thus, then, it does appear that the law has the power of interfering to a certain extent, in order to protect persons from gross imposition. It is said that in those impositions where *common prudence* may guard persons against their suffering from the tricks of the *impostors*, the offence is not indictable. If these terms are to be rigorously interpreted, we do not see how the law can justly interfere with fortune-telling and chiromancy,—or with the practices of those sorcerers,—the degenerate remnants of a nearly extinct race, who pretend to discover stolen goods! Is not the nature of these impositions such, that “common prudence” should suffice to guard persons against the deceptions practised on them? In our judgment, they fall quite as much under this category as many of the medical impositions of the day; and yet in the one case the offences are severely punished, while in the other they are allowed to be carried on with the most bare-faced impunity. If an old woman sell a charm or an amulet,—a common pebble or a scrap of paper with mystic characters, to be worn round the neck of the dupe, in order “to dispel fits or melancholy,” she is liable to be taken before a magistrate, summarily dealt with, and is probably at once sent to the treadmill. Tradesmen, otherwise respectable, are, however, allowed to advertise and sell with impunity their “improved galvanic rings, bands and belts,” either “for the cure of gout, rheumatism and

nervous debility,” or “for affording signal relief in cases of dyspepsia, flatulence, spasm, and all nervous disorders!” To us, it appears that the same false pretence exists, as much in the one case as in the other; and we really do not see why the rich tradesman should escape, while the poor mendicant is punished. Yet such appears to be the state of the law. It is very true, that, if not sold openly, such articles might be sold secretly; but there might be the same apology for the traffic in amulets, charms, and fortune-telling.

Common prudence is no more sufficient to guard a person against being duped by galvanic rings, than by tune-telling. Experience shows that prudence has very little to do with such matters, and as it is perhaps less likely to be exercised in *medical* impositions than in other cases, it is the more necessary, unless common cheats are to be legally recognised, that there should be some interference with the dispensers of these rings and belts. They must know quite as well as the proscribed fortune-teller that they are practising a delusion upon the public,—that, in short, they are obtaining money from credulous people on false pretences; and in equity they should be made just as amenable to punishment as the sellers of amulets and charms in a lower grade. At any rate, we cannot see how the law can be justly carried out against the latter, when the more profitable practices of the former, are so openly permitted. If the galvanic mania is to be thus tacitly encouraged, it is only fair that the statute against fortune-telling, should be at once repealed. We are well aware that there are other practices which are openly tolerated, although no sensible man can hesitate to pronounce them the grossest impositions. One individual

receives high fees for pretending by magnetic vision to see into the exact condition of a person's stomach, liver, or lungs; another pretends, by the same "mysterious" power, to cure speedily "persons afflicted with diseases which have baffled all medical skill; to restore sight to persons who have been blind for six years;" and, so far as we learn from the advertisement, and from the allegations of the pretenders themselves, that they can see clearly with parts of their bodies which anatomists have not found to be provided with optic nerves,—it does not appear that the loss of the humours of the eye, or even the absence of the eyeball itself, forms any obstacle to the restoration of vision!*

What is the difference between impostors of this kind and the old women who pretend to tell fortunes, so far as the duping of the public is concerned? Prudence is obviously as insufficient a ground of protection in the one case as in the other; and it certainly affords no justification for the law punishing one act as an offence, and allowing the other to continue without check. If a person pretends to do what is impossible, this is surely a false pretence; and if money be received under such circumstances, the pretender is deserving of punishment, whether it refer to mesmerism, galvanism, or chiromancy. There is no doubt that these galvanic and magnetic impostures would have been treated by our forefathers as acts of felony without benefit of clergy; and although this might be regarded in the present day as somewhat too severe, it is certainly going to the other extreme, and showing too much leniency, to exempt them entirely from the operation of the law enacted against fortune-telling and witchcraft.

* See Notes on Mesmerism, by Dr. Forbes, p. 490.

Reviews.

On Certain Tests of a Thriving Population: Four Letters delivered before the University of Oxford, in Lent Term, 1845. By FRANCIS TWISS, D.C.L., F.R.S., Professor of Political Economy, &c. 8vo. pp. 107. London, 1845. Longman and Co.

DURING the last century statistical researches have developed two extremely important facts, namely, that the mean duration of human life is generally less than half that of the threescore and ten years commonly assigned as the term of man's existence; but that, on the other hand, communities have it, to a certain degree, in their power to diminish the causes by which the lives of their members are thus abridged; and it has been made evident that, in consequence of the judicious employment of that power, the average duration of human life amongst us has been for many years slowly but progressively upon the increase.

There is no class of writings which are more substantially valuable, or which deserve to receive greater encouragement, than those which have reference to public health. The art of the physician may do much in curing disease in detail, but the power of the law-giver, if well directed, may do infinitely more in adopting salutary measures, which must, if properly carried into effect, materially check the development of large classes of very serious maladies. It is most evidently a fact, that to mankind generally has been given the power of maintaining their own existence for a given period—say, seventy years; but the accumulated ills of centuries have, in a great measure, prevented this power from being exercised by the individual:—thus, no care or moderation on his own part can enable the sickly and half-starved offspring of an ill-fed and diseased race, living in a badly drained and pestilential district, to avoid altogether the assaults of the sickness by which he appears to be doomed to an early death; but the legislature possesses, to a certain extent, the means of averting from him this evil, and of almost freeing his descendants from the injurious influences under which he suffers. He has not the power of removing from

the over-populated district in which he lives, where the excessive accumulation of human beings, and the consequent impossibility of their receiving proper support, renders a high rate of mortality among them a merciful dispensation,—but the government may enable him to emigrate. He cannot avoid the pestilential exhalations of the unhealthy quarter in which his dwelling is situated,—but the municipal authorities may correct the evil. He must either work for an undue number of hours in a badly-ventilated manufactory, or resolve to meet death by starvation,—but the law may compel his employers to place upon him no more labour than he is really able to bear, and to provide for the proper ventilation of the work-rooms in which he toils. He cannot, it is true, throw off the faults of constitution which have descended to him from his poorly nourished and intemperate forefathers,—but the legislature may (in providing that his remuneration shall be sufficient to enable him to procure wholesome food for himself and his family, and in great measure removing from him the temptation to the destructive use of spirituous liquors), succeed in prolonging his life, and in rendering his progeny a comparatively healthy race.

In many of these particulars the government has long been endeavouring to remove the evils which tend so greatly to increase the rate of mortality in the whole population; and it may not be out of place to state some of the legislative measures which are obviously necessary for the diminution of the most prevalent causes of disease, and for the general prolongation of human life. The following appear to be the most requisite:—

The encouragement of emigration from over-populated districts to healthy colonies.

The embankment of rivers, and the draining and cultivation of marsh lands.

The infliction of heavy penalties upon all persons found guilty of adulterating any article of sustenance, or of selling putrid fish, or the flesh or milk of ill-fed or diseased animals.

The imposition of an increased tax upon ardent spirits, which should, in effect, be prohibitory to their sale.

The establishment of laws for—

The proper building and drainage of

houses, particularly those of the labouring population.

The due remuneration of the working classes (especially in the manufacturing districts), and the proper limitation of their hours of labour.

The clearing, regardless of opposition or expense, of all confined and unhealthy districts of cities, and the partition of the spaces of ground so cleared into lots, as the sites of proper dwellings for the poor.

The prohibition of the intramural burial of the dead.

The adoption, as far as practicable, of means for the consumption of the smoke of towns. The removal of all extensive manufactories to the distance of at least two miles from the confines of large cities, with the provision of their being erected with proper regard to ventilation, and not in unhealthy situations.

The suppression of all those trades which, while they produce no real benefit to the community, entail almost certain destruction of health or life upon those who practise them.

The establishment upon a very extensive scale, throughout the country, of houses of temporary refuge for the destitute poor, where medical assistance may be received, and aid in obtaining proper employment.

The opening of baths and places of exercise for the use of the working classes in manufacturing districts.

The establishment of better and more liberal rules than are at present in operation, for the medical relief of the destitute sick.

The adoption of measures encouraging the poor to bring their children to be vaccinated.

The gradual introduction of regulations calculated to improve the *morale* of populous districts.

The diffusion of religious instruction among all classes of the people.

Some of these provisions have long been in active though partial operation, and their beneficial effects are daily becoming more and more strikingly apparent; others are just beginning to work, and will have to be much extended in their application before they can produce their intended good; the remainder, it is to be regretted, have yet to be employed; but the time is not far distant at which the absolute necessity for their adoption must be

come apparent to all. There is one great fact which should ever be borne in mind by legislators—that a large proportion of the most general and most fatal diseases are the results of circumstances which it is in the power of man to control, and perhaps eventually to remove altogether; and that this power of suppressing the main causes of disease lies in the hands rather of the law-giver than of the physician.

We have naturally been led to make these remarks from having before us a valuable work upon several points with reference to the duration of human life and the preservation of public health. Mr. Twiss's four lectures will be found to contain many facts and suggestions of great interest and importance to the statistician, the political economist, and the medical man. The author has employed much discriminating research, and has certainly treated his subject in a very masterly manner.

We shall give a few examples of the arguments and facts contained in his work. Mr. Twiss insists very justly upon the ambiguous meaning of the term "expectation of life, or *vie moyenne*," as it is employed to designate two very different results; the one arrived at from a calculation of the "mean age at death;" the other based upon the enumeration of the ages of the living. Several of the illustrations of his views are very interesting: for example, he says—

"The mean age at death' alone supplies the data for calculation in the case of certain Life Tables, whilst the ages of the living, out of whose number the deaths have occurred at the several periods of life, form the important element in the construction of others. But 'the mean age of the living,' in a country where the births far exceed in number the deaths, differs very widely from 'the mean age at death;' and the former may be increasing whilst the latter has been reduced. These have been so often erroneously confounded, that it is most desirable to distinguish carefully from each other the facts which they represent. It is a conceivable supposition, that the registers of two nations should exhibit the same number of births and deaths, yet that the efficiency of the respective populations should be very different. In the one case the mortality might mainly prevail amongst the adult population, in the other instance amongst the infant and youthful members: in the one

case the best quality of lives will have been carried off, in the other they will have survived. The mean age at death will have augmented on the former of these suppositions; it will have decreased on the latter; whilst the mean age of the living will have varied inversely as the mean age at death," &c. (pp. 32, 33.)

Again :

"The probable duration of life in Surrey is 53 years; in the metropolis, 40; in Liverpool, 7 or 8 years. The mean duration of life does not differ so enormously; it is, however, 45 years in Surrey, 37 years in the metropolis, and only 26 years in Liverpool."

According to the same authority, the Registrar-General's Fifth Report—

"The mean age at death in Surrey is 34 years; in the metropolis, 29 years, the same as the average mean age at death in England; whilst from a table in the First Report of the Health of Towns' Commission, it appears that 17 is the mean age at death in Liverpool. There will therefore be a variation in the expectation of life, according as the life tables are calculated upon the mean age at death, or upon the mean age of the living, of not less than 11 years in the case of Surrey, 8 years in that of the metropolis, and 9 years in that of Liverpool." (p. 57.)

The mention of the high rate of mortality in Liverpool leads us to make one or two other quotations, which involve facts bearing strongly upon the necessity for legislative measures to improve the dwellings of the poor, and the arrangements in their places of labour.

"The population of the extra-metropolitan parts of Surrey happens to be but little more than the population of Liverpool: yet in 1841 the deaths in Surrey were 4,256; the deaths in Liverpool, 7,556: out of 14,450 boys under five years of age, 2,087 died in Liverpool; of 14,045 boys in Surrey only 699 died within the same time. By this immense mortality in Liverpool, the number of males at the age of 10—15 is reduced much below the number in Surrey at a corresponding age. The living in Surrey aged 20—30 are 18,746, but the influx of immigrants into Liverpool raised the number of males living there at that age to 23,494, who are, however, rapidly cut down by sickness or death (unless other accidental circumstances cause them to remove elsewhere); so that at the age of 45—55 only 7,504 males were enumerated in Liverpool, whilst 9,281 were living in Surrey." (p. 55.)

"It is not always the want of employ

ment which is fatal to the operative classes; it is sometimes the very employment itself, because that employment confines them during the whole day to close and ill-ventilated work-rooms. Thus at Paisley, in May 1832, during a period when there was almost an entire cessation of work, and such universal distress, that the aid of Government was required to co-operate with private benevolence, the physicians of the Fever Hospital were surprised by the diminution of at least one-eighth in the average of fever cases, as compared with the previous five years. When, however, a time of brisk employment succeeded, and the whole population were again at work, a new epidemic broke out. In Manchester a similar reduction of mortality was experienced in the years 1841 and 1842, which were years of great distress as contrasted with 1840. It seems from a host of similar instances, which are collected in various sanitary reports, to be a well-ascertained fact, that the unfavourable effect of a reduction in the supply of food and clothing to our manufacturing population during a period of non-employment, in inducing disease, is more than counterbalanced by the favourable effect of their absence from ill-ventilated workshops, and the accompanying want of means to gratify costly and hurtful propensities, whereby the causes of disease are diminished." (pp. 78, 79.)

The author says—

"We have trustworthy data to show that the rate of mortality has decreased in this country during the last 100 years. Supposing the annual average baptisms in given periods to bear a given ratio to the respective population, and the returned burials to represent a similar constant proportion to the general deaths, we should be enabled to measure with sufficient accuracy the variation in the mortality. It thus appears that, out of the same amount of population, whatever may have been that which corresponded to 1000 baptisms, there died annually (in England and Wales)—

1068	between	1720	and	1730
1043	"	1730	"	1740
924	"	1740	"	1750
858	"	1750	"	1760
840	"	1760	"	1770
857	"	1770	"	1780
787	"	1780	"	1790
747	"	1790	"	1800
699	"	1800	"	1805
659	"	1805	"	1810
612	"	1810	"	1815
623	"	1814	"	1820"

(pp. 50, 51.)

—a progressive decrease in the proportion of deaths which is very remarkable.

The sources of error which beset the inquiries of those who are employed in statistical researches are exceedingly numerous; and many of them, strikingly evident as they appear to be, when once clearly explained, are often entirely overlooked by the persons actually engaged in such investigations. Much fallacy may be removed by the cautions contained in such valuable commentaries as the one before us; and we conceive that the public is much indebted to Mr. Twiss for the important suggestions which he has embodied in these four lectures.

Premiers Secours avant l'arrivée du médecin, ou petit dictionnaire des cas d'urgence, &c. Par M. F. CADET GASSICOURT, D.M.P. &c. Paris, 1845.

Advice for Emergencies before the arrival of a medical man, &c. By M. F. CADET GASSICOURT, D.M.P. &c. Paris, 1845. Small 8vo. pp. 264.

THE first objection we take to this treatise is, that the small amount of matter which it contains, is spread over a very unnecessary quantity of paper. It is a fair specimen of the book-making art among our neighbours. Printed in the way in which similar works commonly appear with us, it would not have occupied one-fourth of the bulk, and the author seems to have forgotten that the less people have to carry about with them in cases of emergency, the better. Then, again, he has selected a type so large, and so well spaced, that we cannot help thinking M. Cadet Gassicourt must have chiefly intended the volume for the use of septuagenarian readers.

With these preliminary remarks, we may observe, that the author's advice extends to the treatment of all sorts of cases, from the sting of a bee to the process of parturition! The remedies and appliances are mostly such as fall within the reach of non-professional persons;—the author carefully abstains from carrying his advice further, and the general termination of each paragraph is, "Send for the doctor." *Envoyer promptement chercher le médecin.* M. Cadet Gassicourt admits, that the work is to be regarded chiefly

as a compilation: thus the treatment of cases of poisoning, which is generally good, is taken from Orfila, — it is, therefore, unnecessary to criticise it. In the remedies for superficial burns and scalds, he omits to notice a solution of gum acacia as a local application; although this is a simple domestic article, and one which, if timely applied, is, according to our observation, attended with the most soothing effects.

One of the most frequent emergencies in which a Frenchman requires assistance, judging from the space assigned to the subject (one-third of the volume) is that of being poisoned by mushrooms! The author goes so minutely into the history of these poisons that he gives us the length of the stalk of each mushroom in centimeters, and the full botanical characters, — added to which we have eight coloured plates of the principal poisonous species! These, if we mistake not, are identical with the plates which were published some years since by Orfila.

It is a strange and unaccountable proof of the gastronomic propensities of our neighbours, that they will persist in swallowing poison as an article of food in so many of their dishes. We cannot congratulate the author upon having suggested any novelty of treatment — if we except the use of *eau sucrée* with *sirop de vinaigre*! The design of this work is excellent, but it is badly carried out; there is redundancy

in the details, and an obvious attempt to make a volume of what should be a sixpenny pamphlet. An essay on these subjects, carefully compiled, and written in plain language, is urgently wanted for the use of the metropolitan police force.

Medical Statistics.

IN England, during the whole of the present century, there have been more than three births to two deaths; and this result reduced the mean age of death to 33 years in 1831, and to 29 years in 1841: while the real duration of life, that is, the expectation of life, is 41 years, and has varied little. The number living to one death was 46 in 1841, and 45 in the preceding four years. — *Reg. Rep.* 1844.

NUMBER OF INSANE PERSONS IN ENGLAND AND WALES*.

The proportion of pauper lunatics to the population is considerably larger in Wales than in England; and in both England and Wales the number of insane females is greater than that of the males, in proportion to the population of the respective sexes.

The following is a general abstract of the results obtained from various sources; it contains the nearest approximation, at which we have any certain means of arriving, to the total numbers of the insane, private and pauper, in England and Wales, on the 1st of January, 1844.

Proportions per cent. of Pauper Lunatics to Population, January 1, 1844.

		Population.	Pauper Lunatics.	Proportion per cent.	One Pauper Lunatic to Persons Living.
England . . }	Males	7,589,659	7159	·094	1060
	Females . . .	7,945,962	8442	·106	942
	Total	15,535,621	15,601	·100	1000
Wales . . . }	Males	463,985	542	·117	856
	Females . . .	480,476	678	·141	709
	Total	944,461	1220	·129	775
Total England and Wales .		16,480,082	16,821	·102	930
Deduct Criminal Lunatics			279		
Total Pauper Lunatics not Criminals . .			16,542	·100	1000

General Statement of the Total Number of Persons ascertained to be Insane, in England and Wales, January 1, 1844.

	TOTAL.		
	Male.	Female.	Total.
County Asylums	2054	2346	4400
Ditto, under Local Acts	38	51	89
Military and Naval Hospitals	164	4	168
Bethlem and St. Luke's Hospitals	264	299	563
Other Public Asylums	426	453	879
Licensed Houses :—			
" Metropolitan	880	947	1827
" Provincial	1695	1651	3346
* Workhouses and elsewhere	4169	5170	9339
Single Patients under Commission	172	110	282
Totals	9862	11,031	20,893
PAUPERS.	TOTAL.		
	Male.	Female.	Total.
County Asylums	1924	2231	4155
Ditto, under Local Acts	38	51	89
Military and Naval Hospitals	86	35	121
Bethlem and St. Luke's Hospitals	177	166	343
Other Public Asylums	360	491	854
Licensed Houses :—			
" Metropolitan	947	973	1920
" Provincial	4169	5170	9339
* Workhouses and elsewhere	—	—	—
Single Patients under Commission	172	110	282
Totals	7701	9120	16,821
PRIVATE PATIENTS.	TOTAL.		
	Male.	Female.	Total.
County Asylums	139	115	245
Ditto, under Local Acts	—	—	—
Military and Naval Hospitals	164	4	168
Bethlem and St. Luke's Hospitals	178	264	442
Other Public Asylums	249	287	536
Licensed Houses :—			
" Metropolitan	520	453	973
" Provincial	748	678	1426
* Workhouses and elsewhere	—	—	—
Single Patients under Commission	172	110	282
Totals	2161	1911	4072
Where Confined.	TOTAL.		
	Male.	Female.	Total.
County Asylums	139	115	245
Ditto, under Local Acts	—	—	—
Military and Naval Hospitals	164	4	168
Bethlem and St. Luke's Hospitals	178	264	442
Other Public Asylums	249	287	536
Licensed Houses :—			
" Metropolitan	520	453	973
" Provincial	748	678	1426
* Workhouses and elsewhere	—	—	—
Single Patients under Commission	172	110	282
Totals	2161	1911	4072

* Including 30 Male, and 3 Female Criminal Lunatics in Gaols, according to the Parliamentary Return for April, 1843. The numbers given under this head have been obtained by deducting from the total estimated number of Pauper Lunatics on the 1st of January, 1844, those confined in Asylums on that day, including County and Vagrant Paupers, which are not distinguished from others in the Returns made to this Board, and which (as has been stated) were not comprised in the Poor Law Returns; consequently the numbers of Pauper Lunatics "in Workhouses and elsewhere," on the 1st of January, 1844, as well as the grand totals given above, exceeded the numbers in the Table by the number of County and Vagrant Paupers so deducted.

Medical Intelligence.

UNIVERSITY OF LONDON.

BACHELOR OF MEDICINE. FIRST EXAMINATION. EXAMINATION FOR HONOURS. —1845.

Thursday, August 14.—Morning, 10 to 1.

Anatomy and Physiology.

Examiners, Mr. KIERNAN and Professor SHARPEY.

1. Commencing the dissection at the integuments, and proceeding with it as far as the pharynx, and the bones forming the zygomatic fossa, describe the parts successively exposed in dissecting the space bounded above by the zygoma, below by the base of the inferior maxilla, in front by the anterior margin of the masseter, and behind by the meatus auditorius, mastoid process, and upper part of the Sterno-Cleido-Mastoideus.

2. Give the anatomy of the corpus striatum; describing its situation and immediate connexions, and the arrangement of the white and grey matter within it (as seen with the naked eye). Describe also the parts met with in exposing the corpus striatum from the outer and lower part of the cerebral hemisphere.

Afternoon, 3 to 6.

1. Describe the parts (excepting the bones and ligaments) as they are successively exposed in dissecting a portion of the anterior region of the thigh, bounded above by Poupert's ligament, and below by a transverse line corresponding with the lower limit of the insertion of the adductor brevis; the dissection to be carried down to the anterior edge of the glutens medius, the hip-joint, the obturator membrane, and anterior surface of the adductor magnus.

2. Give an account of the structure and properties of mucous membrane in general; and describe that of the stomach, and of the small and large intestines, in particular: the description to include an account of the ultimate arrangement of the blood-vessels, the epithelium, the follicles of Lieberkühn, and the glands of Brunner and Peyer.

Friday, August 15.—Morning, 10 to 1.

Chemistry.

Examiner, Professor BRANDE.

1. Enumerate the combinations of chlorine with oxygen, giving their respective equivalents and symbols, the modes of obtaining them, and their characteristic properties.

2. Explain the construction of "Grove's

Battery," and the theory of its action in reference to the changes which the fluids employed in it undergo during the passage of the electric current: compare it in these respects with "Daniell's Constant Battery," and with the voltaic battery upon the common construction.

3. How would you separate and determine the quantities of the respective metals in an alloy composed of platinum, gold, silver, copper, lead, and tin?

4. The proximate organic components of wheat flour are starch, gum, sugar, fat, glutine, fibrine, caseine, albumen, lignine. How would you separate these substances, and what is their ultimate composition?

• Friday, August 15.—Afternoon, 3 to 6.

Materia Medica and Pharmaceutical Chemistry.

Examiner, Dr. PEREIRA.

1. State the botanical origin and chemical composition of officinal camphor, as well as of Borneo or Sumatra camphor. Describe the method of procuring artificial camphor, and mention the chemical composition of this substance.

2. How would you proceed to detect the presence of arsenic, of lead, and of nitrous acid in commercial oil of vitriol?

3. What are the proper specific gravities, at the temperature of 62° Fahr., of the following substances, according to the London Pharmacopœia: *Acidum sulphuricum*, *Acidum nitricum*, *Acidum hydrochloricum*, *Acidum aceticum*, *Ammonia liquor*, *Ammonia liquor fortior*, *Spiritus rectificatus*, *Alcohol*, and *Aether sulphuricus*? State, in the language of Sykes's hydrometer, the density of *Spiritus rectificatus*, Ph. Lond.

4. Forty grains of diluted hydrocyanic acid yield, with a solution of nitrate of silver, a precipitate weighing 7.3 grs., only 5.6 grs. of which are soluble in boiling nitric acid. What is the percentage strength of the diluted hydrocyanic acid?

5. You are requested to describe the method of preparing *Sulphur precipitatum*, and to explain the chemical phenomena which ensue; also to point out the nature of the substance with which the officinal preparation is frequently contaminated, the mode of its introduction, and the best method of distinguishing between the pure and the impure article.

6. Describe the effects of strychnia on man and other animals; name the diseases for which it is applicable; mention the circumstances which permit or contra-indicate its use; and state what you conceive to be a proper dose of it, as well as the cautions to be used during its employment.

Medical Trials and Inquests.

CASE OF POISONING BY HYDROCYANIC ACID, WITH REMARKS. BY T. NUNNELEY, ESQ. LEEDS*.

Retention of consciousness and volition—Death in three quarters of an hour—Detection of the poison in the blood and serum of the ventricles of the brain—Its detection in the contents of the stomach after twenty-three days' exposure.

On the 27th May, 1845, an inquest was held at Leeds, before J. Blackburn, Esq. on the body of a person who had died from the effects of prussic acid. It appeared from the evidence given on the occasion, that the deceased procured from a druggist an ounce of the acid. He entered an inn which he was in the habit of frequenting, went up stairs, and was shortly afterwards found on a sofa labouring under the effects of the poison. The witness who first saw him, a non-professional man, thought from his appearance that he was intoxicated. On his entering the room, deceased was lying on his back, but he immediately sat up when he saw witness, although he did not say anything. Witness went down stairs, but from a communication made to him by the house-keeper, he returned to the room, and found the deceased sitting in the same position, with the exception that he was reclining on the right side with his head on the sofa cushion. On witness addressing him, deceased made an attempt to answer, thereby showing that he retained his consciousness, but he was not intelligible. When he was subsequently asked, whether he would have medical assistance, he said, "Oh, no! it is too late—it is too late!" About three minutes had elapsed from the time of deceased's entering the house to his being first seen on the sofa. Mr. Nunneley arrived in about twelve minutes after this, so that not more than a quarter of an hour, and probably a shorter period, had elapsed from the time at which the deceased entered the inn, when he was first seen by a medical man. He was then lying on the sofa on his right side; he was alive, but unable to speak, and did not appear to be conscious; although the dashing of cold water upon him immediately roused him, causing him to make a deep inspiration. Mr. N. suspected that deceased had taken prussic acid:—he administered ammonia, chlorine, used cold affusion, and placed the feet in a pail of hot water containing a quarter of a pound of mustard. The deceased gradually sank; his legs, arms, and chest, were slightly convulsed,—the upper extremities more than

* Abridged from the Provincial Medical and Surgical Journal, July 23d and 30th, 1845.

the lower. The jaw was fixed, the eyes were glassy, prominent, and staring, and the pupils widely dilated; the countenance puffed up, bloated, and rather purple; there was foam about the mouth; the breathing slow and convulsive, like violent sobbing; the hands were partially contracted, the fingers rigid, and about the nails of a dark colour. Death did not take place until after the lapse of half an hour, making the whole duration of the case from the time of the deceased entering the inn, three quarters of an hour, or probably from the time of his taking the poison *forty-two minutes*.

An ounce bottle was found in his left hand coat-pocket, with the stopper in it. It was labelled *Scheele's acid*, but it contained two and a half drachms of an acid of one and a half per cent.;—therefore of about one-third the strength of the acid for which it was sold! A glass was found in the room, but there was no smell of prussic acid in it. The deceased was sufficiently acquainted with chemistry to know the effects of this acid as a poison.

Inspection.—The body was examined while still warm, five and a half hours after death. The depending portions were livid, and the superficial veins filled with blood; countenance placid and turgid; eyelids closed, eyes prominent and glassy. Of the four medical men present at the inspection, two could perceive an odour about the body, and two could not. On opening the abdomen, however, the odour was instantly perceptible in every part of the room, evidently proceeding from the stomach. This organ contained rather more than half a pint of half-digested matter, having a sour smell,—the odour of the acid being, however, exceedingly strong. It appears that deceased had eaten a hearty breakfast, about two hours and a half before taking the poison. The mucous membrane of the stomach, which was covered with a thick layer of mucus, was red and injected; but perhaps this was not more than the usual turgescence of the vessels observed during the process of digestion. The mucous membrane of the large and small intestines was natural, and no smell (of prussic acid) could be detected in any part of the canal. *Thorax.*—Odour of the poison slight; lungs healthy, except the lower portions, which were gorged with fluid blood. The larger bronchial tubes were filled with a reddish frothy mucus. The heart and large vessels were distended on both sides with dark fluid blood. *Head.*—The vessels were filled with fluid blood; there was venous effusion on the pia mater, and in the ventricles; the brain was healthy, firm, and elastic. *Verdict.*—"That the deceased destroyed himself by taking prussic acid, while labouring under temporary insanity."

Analysis.—This was performed by Mr. West. The contents of the stomach twenty-four hours after death reddened litmus intensely, and had a strong smell of the poison. A drop of solution of nitrate of silver inverted over a portion soon became covered with a film of precipitate, white and soluble in ammonia. Another portion distilled in a water bath, yielded an abundant precipitate of Prussian blue. The quantity of anhydrous prussic acid contained in the stomach was 0.4 grains, equal to 27 grains of the acid found in the bottle (at 1.5 per cent.) It gave a precipitate of cyanide of silver when a solution of the nitrate was added. This precipitate, on being heated, yielded cyanogen, and dissolved without heat in cold nitric acid. Mr. West considers it an error to state that cyanide of silver is insoluble in cold nitric acid,—“the supposed insolubility is at most a matter of proportion, and should not be described as a characteristic of the cyanide.” The fluid taken from the small intestines, the arterial blood, as well as the serum of the ventricles of the brain, produced a white film on a solution of nitrate of silver inverted over them. No prussic acid could, however, be obtained from the two latter by distillation. One person who was present thought he could perceive the odour of the poison in these liquids. The venous blood produced no change on the nitrate of silver. Mr. West subsequently found the usual evidence of the poison on distilling a portion of the contents *twenty-three* days afterwards. “This case is therefore,” he observes, “opposed to the common notion of the rapid decomposition (?) of the acid.”

REMARKS.—Mr. Nunneley appends some judicious observations to this interesting case. One question at the inquest was, whether the poison was taken below stairs, or in the room where the deceased was found. Mr. N. thought that it had been taken down stairs, and that the deceased had gone up stairs afterwards. He assigned as a reason, that there was no odour in the glass found up stairs; and it was suggested that there were the means of rinsing it out in the room below, but not in the room above. It appears, however, that the rinsings in and about the spittoon found below, had no odour, nor do we find it stated that there was any smell of prussic acid in that room. The deceased may not have used the glass at all, but have taken the poison out of the bottle. The evidence, therefore, entirely fails in showing *where* the poison was swallowed. The *dose* of the poison is also conjectural. If the deceased took the whole of the five and a half drachms missing from the bottle, he must have swallowed, according to Mr. West's analysis, about four and

a half grains of anhydrous prussic acid. On this showing, as there was no vomiting, more than four grains of anhydrous acid must have become lost by absorption and diffusion before the analysis was made;—but some may have been spilled, especially if the poison were swallowed from the bottle: hence there are no sufficient data for forming a correct inference respecting the fatal dose.

What the case loses in interest in these points, it gains in others. For instance, as Mr. Nunneley observes, consciousness and volition remained for some minutes. The deceased was capable of being roused, and even answered a question rationally before Mr. N's. arrival. The symptoms preceding death were accurately observed:—there were no violent convulsions, and there was no shriek. "This reliance upon the shriek," says Mr. N., "has always surprised me; for even in animals there is nothing more uncertain even in the same species. Out of the great number of dogs and cats which I have destroyed by the acid, I believe the majority did not shriek." Mr. N. thinks that the quantity necessary to produce death has been somewhat under estimated. With regard to the post-mortem appearances, the appearance of the eyes was very characteristic,—the cornea was perfectly distended and glistening,—they were fixed, and more brilliant and animated, than during life. The rigidity of the body took place as under ordinary circumstances, and in this case certainly, the decomposition of the body was not accelerated. Mr. Nunneley places more reliance in the *treatment* by cold affusion than upon any other plan. "In this instance, more effect was produced by the dashing of cold water than by any other means." He objects to bleeding in the first instance, but thinks it may be serviceable in relieving congestion, when the system has become roused. In relation to the chemical analysis, Mr. Nunneley observes, that the poison was here detected, not only in the stomach, but in the small intestines, the blood and the serum of the brain: its non-detection in the venous blood may have been accidental. Further, he continues, "it is worthy of remark, that the statements made with regard to the action of nitric acid upon cyanide of silver, and which in toxicological works is much dwelt upon as characteristic of this substance, are not correct." This is a very heavy charge made by Mr. West and Mr. Nunneley against Berzelius, Orfila, Christison, Brande, Turner, and every other chemist without exception, who has written on the properties of cyanide of silver, and we cannot help thinking that the mistake, if any, lies with themselves. Orfila says of the cyanide of silver, that it is "insoluble, ou excessivement peu soluble, dans l'acide

azotique à la température ordinaire, facilement soluble dans cet acide bouillant."* No one who has performed any experiments with this compound, can for a moment doubt the literal correctness of Orfila's statement. Use a very minute portion of cyanide of silver and a proportionally large quantity of strong nitric acid, the precipitate will become dissolved in the acid without boiling; but under no other circumstances. Besides, it appears to have been forgotten that cyanide of silver is to a certain extent dissolved by nitrate of silver itself. We are surprised that any question should arise upon so simple a fact, which it is in the power of every one to settle by direct experiment. In all cases, solubility is a relative term, "*i. e.* a matter of proportion." Compared with the oxalate, and some other salts of silver, the cyanide may be considered as insoluble in nitric acid. Iodide of silver is said to be insoluble in ammonia, and is thus distinguished from other salts; but although strong ammonia will dissolve a minute quantity, this cannot impugn the correctness of the common chemical description of its properties.

It is a curious fact, that in this case the acid should have been still detected after *twenty-three days*, by distilling some of the contents of the stomach, although, as Mr. Nunneley states, it was "mixed with a mass of partially digested food; the weather being sultry, and no pains taken to ensure its preservation." Mr. West omits to state whether the odour was then perceptible in the contents; but he observed it in the distilled liquid, and obtained from it by the usual tests cyanide of silver and prussian blue. This is still more remarkable, when we consider that there were only *four-tenths* of a grain of anhydrous acid originally in the contents of the stomach; and we have the evidence of its continually escaping, in the fact, that nitrate of silver suspended over it was, in the first instance, rendered milky. This persistence of so highly volatile a poison in the contents of a stomach is unexampled, and is perfectly inexplicable. Mr. West observes, "This case is therefore opposed to the common notion of rapid decomposition of the acid." We were not aware that the acid was said to be lost by *decomposition*: its disappearance has been generally attributed to its great volatility. Prussic acid is antiseptic, and we have found it to possess the property of actually preventing organic liquids from becoming mouldy.

Mr. Nunneley adverts to the uncertainty of the strength of this acid, as it is commonly sold by druggists. Here is an acid labelled Scheele's acid, and having only one-third of its strength. We believe this to be

* *Traité de Toxicologie*, tom. ii. p. 305.

very common, and that specimens procured from different shops will rarely be found of equal strength. This practice requires regulation, or dangerous consequences must ensue from the medicinal use of this substance.

The report of this case does great credit to Mr. Nunneley, from the accuracy with which the facts were observed and are recorded; it adds much to our knowledge of the subject of poisoning by prussic acid.

Correspondence.

ON COPAIBA INJECTIONS IN GONORRHŒA.

BY P. OATES, ESQ.

I AM desirous of recording, through the medium of the *MEDICAL GAZETTE*, the following case, as one of rare occurrence, and interesting, as affording a peculiar opportunity of studying the mode of action of the remedy employed for its cure. The patient was a man in the Veneral Hospital at Paris, and the case fell under my observation while attending hospital practice in that city: it was as follows:—When a lad, this patient, while playing with himself, had tied a piece of string round the middle of the penis, and so tightly, that from the sudden and great swelling induced, the urethra and corpus spongiosum were both nearly divided, and an opening into the canal was left at this point, through which the whole of the urine was voided in micturition from this time. The appearance of the penis, when not erect, was as if broken; the anterior portion hanging down almost at right angles with the posterior. The gonorrhœa was violent, with a profuse discharge from the meatus urinarius, as well as from the false opening or fistula, if one may so term it, showing that a great extent of the urethra was the seat of the inflammation. After a few days of palliative treatment, by diuretics and diluents, during which the discharge remained in statu quo, M. Ricord ordered for him the balsam of copaiba, under the use of which, the portion of the urethra posterior to the fistula, viz. so much of the canal as was traversed by the urine, got completely well, while from the anterior portion the discharge was as profuse as ever. The indication was here clear; the copaiba was continued, and a syringe given to the man, with which he was directed to inject his urine into the meatus urinarius after each micturition, and in a few days the cure was complete. This case shows very clearly the *modus operandi* of the balsam of copaiba in gonorrhœa to be, by impregnating the urine with its principles, and being so applied to the inflamed membrane, and not by being in any other

way determined to the part. This is further shown in similar affections in the female, where the urethra is more implicated than the vagina; it also points out the use of injections of copaiba in gonorrhœa, and although they have been tried with partial success, it is by no means a general way of using the remedy; if, however, a formula could be found in which it could be so combined and modified as when eliminated with the urine, all the advantages of the medicine might probably be secured. There is no doubt the copaiba is the most powerful resource we possess in gonorrhœa, and where it does not succeed, it is generally from its nauseating the stomach to such an extent as to be inadmissible, or otherwise deranging the system; and could it be used in an appropriate form as an injection, the patient might be spared the disgust and unpleasantness consequent on a course of this nauseous drug.

17, Tavistock Place,
August 1845.

SPONTANEOUS AMPUTATION OF THE ARM IN THE FÆTUS.

BY WILLIAM POLLARD, JUN.

I WAS called at 5 A.M. July 16th, ult. to attend A. H., a healthy woman, æt. 26, in her third confinement: last menstruation the latter part of October 1844. Labour had scarcely commenced; os uteri dilated large enough to admit the point of the finger. Head presentation. There being no pains for some time, I left her, and directed the nurse to send as soon as labour should come on. About 10 A.M. pains followed rapidly in succession, and the child was born in half an hour, about ten minutes before my arrival; the placenta had also come away, but was separated from the child. After attending the mother, I examined the child, and found it had but one perfect arm; the humerus of the left was about two inches long, terminating in a sharp point, almost protruding through the skin, which appeared to be contracted over the bone, but perfectly cicatrised; there was also a small nipple-like fleshy growth at the end of the stump contracting each time the arm moved; in every other respect the child was well formed, and took the breast before I left the room. Thinking it a case of spontaneous amputation, first described, I believe, by Montgomery, of Dublin, I examined the coagula, &c. but could find no trace of the missing arm. The child up to this time is doing well.

Torquay, August 1845.

Selections from Journals.

SURGERY.

UNUNITED FRACTURE OF THE TIBIA AND FIBULA SUCCESSFULLY TREATED. BY DR. EDMUND SHARKEY.

MAY 28, 1844.—An old woman who, while drunk, had fallen and broken both bones of her leg about the middle, twelve weeks ago, was brought to hospital, where she remained ever since. Her leg was put in splints, and absolute rest enjoined; no more than usual reaction was evident, and the limb was perfectly *in situ* from the commencement. On examination at the usual time, the bones were found not to have united, there being distinct motion at the fractured part. A ring of callus seems to have been thrown out round the fracture in the fibula. The fractured ends have been rubbed together, but no advance towards solidification seeming to have taken place, the bone at the fracture was laid bare by an incision. The lower fragment seemed slightly to project, while there seemed a loss of substance in the upper corresponding end. A probe could not, however, pass through the fracture, nor could any loose spicule nor frænum be discovered; neither could the apparently overlapping end be reduced. No deformity of the limb was observable. It was perceived that, when the incision was made, a small quantity of an oily fluid escaped. A tent of lint was introduced, and left in the incision.

July.—The limb has become nearly solid.

August 27th.—Was able to walk by help of a stick, and soon after went out quite well.—*Dublin Medical Press.*

WOUND OF ABDOMEN.

At the Sheffield Medical Society, Mr. Law exhibited a portion of ilium, and the abdominal parietes, of a man aged 65, who was admitted into the Infirmary, having about twenty-six hours previously had a piece of hot iron, fresh from the furnace, forced into the abdomen. One inch from the median line, and to the right side, and an inch and a half above Poupart's ligament, there was an irregular horizontal wound, of an inch in extent, through which about twenty-eight inches of the gut protruded, together with a portion of mesentery. The protruded intestine was thickly coated with lymph, and slightly adhered where it folded on itself, and was strangulated. It was of a dark-brown colour, and appeared to be seared in several places. In one part was a ragged circular opening, about the size of the tip of the little finger, which allowed the fæces to escape freely. The wound of the parietes was dilated, and all the intestine except the seared and perforated portions returned.

Prostration was extreme; pain very acute; the patient quite rational up to the last moment. He died in about thirteen hours after admission.

Post-mortem, 58 hours after death.—A pouch was found under the integument, extending from the wound downwards into the scrotum, filled with coagulated blood; peritonitis extensive; the ileum was highly inflamed, and the injured portion gangrenous. There was only the perforation above named; the other viscera were healthy. Great congestion of the brain and dura mater, and slight opacity of the arachnoid. The injury was inflicted by his son, in a moment of passion.—*Provincial Med. and Surg. Journ.*

TREATMENT OF BED-SORES IN FEVER.

The most you can do is to apply cushions of curled hair in chamois leather under the hollows of the body, to equalize its weight on every part. Local applications to the mortified parts are worth nothing; but when they first become red, you might apply spirits, either alone or mixed with vinegar, and this will often stop the progress of the local affection. When the cuticle is abraded, lay a thin sheet of gold-beaters' leaf on the part: white of egg spread on linen will be found useful to prevent these abrasions. After the fever has subsided, and the patient is getting well, perhaps getting fat and walking about, still one of those gangrenous spots may show no disposition to heal. Should the part be the prominence of the sacrum, and the slough be attached to the tendinous aponeurosis covering it, don't be in a hurry to take your instruments to cut it off; if you do, tetanus will in all probability be the consequence.—*Dr. Colles's Lectures on Surgery.*

TREATMENT OF SCALDS.

DR. GROSSKOPF speaks strongly in favour of the Ung. Plumbi Acetat. as a local application in cases of scalds, stating that if applied at once, it invariably prevents the formation of vesicles, speedily allays pain, and diminishes redness and swelling. In cases where vesicles have already formed and burst, its application quickly promotes the healing of the exposed surfaces. No evil effects on the system have followed its employment.—*Schmidt's Jahrbücher*, 1845.

SPECIAL PATHOLOGY.

COLIC FROM COPPER AMONG THE WORKERS IN THAT METAL.

M. BLANDET has written a memoir on this subject, wherein he proposes to demonstrate that there exists a colic occasioned by copper—a malady to which those who work in that metal are liable, as the workers in lead are to lead colic.

The author rectifies the mistake which has led to the belief that the colic suffered by the workers in copper, arises not from the effects of the copper, but from the lead which is also used; an error which has caused the two diseases to be confounded, and led to the idea that the copper has no injurious effect in these instances, whereas it is really highly deleterious. From Dr. Blandet's observations, made both in the hospitals and in the workshops, he has become convinced of the existence of a form of enteritis produced by copper, of which the chief symptom is a colic, with remissions. The workman bends himself double to relieve it; the belly is tender upon pressure; there is headache, and inclination to vomit; diarrhoea or constipation; the vomited matters consist of bilious fluid; the first alvine evacuations are often of a green colour; fever is frequent, but there is often lassitude. The affection, says M. Blandet, arises from two principal causes—slovenliness, and the inhaling of copper dust. The workers in copper, who are careless of their persons, have their hair coloured green; the perspiration is green, and the teeth are coated with a crust of sulphuret of copper. M. Blandet recommends certain prophylactic and therapeutic measures, of which the principal are, the use of albuminous drinks, and the administration of saline purgatives to prevent constipation. M. Blandet has also made a second observation relative to the accidents occasioned by zinc among the founders and moulders of copper. The symptoms produced by the vapour of zinc, are, a sensation of weight at the stomach, nausea, oppression, pains in the head, aches in the limbs, as if from the effects of bruises, &c. It is especially the fumes of brass which produce these accidents; they have not been found to arise from copper alone, but they must be attributed to the admixture of that metal with zinc. Among the symptoms complained of by the workmen, are, a painful weight at the stomach, inclination to vomit, want of appetite, cough, oppression, occasional fixed and oppressive pain in the head, buzzing in the ears, which continues during the night; general debility; tetanic stiffness, and pain in the limbs; shivering; cold trembling, which continues several hours; nightmare during sleep; the patient experiences a feeling of distension, and there are cold sweats preceded by hot fits, &c.—*Gazette Médicale*, 1845.

CHEMISTRY.

SEPARATION OF LIME FROM MAGNESIA.

BY M. BACK.

ONE of the methods recommended for the separation of these two substances, is to heat to redness the mixture of the chlorides of

calcium and magnesium: the chloride of calcium remains unchanged, and may be separated by water from the caustic magnesia, which is set free during the process. M. Back has lately examined this method, Berzelius having already stated that it was incorrect. In one experiment, 0.221 grm. of fresh calcined magnesia were dissolved in muriatic acid, and during evaporation 2 grm. of dry chloride of calcium were added, the surplus acid driven off, and the whole mass afterwards incinerated in a platina crucible. When cold, the dry residue was moistened with water, and again heated. By a repetition of this operation muriatic acid continually escaped, and finally the mass was digested in water, and a residue obtained which weighed 0.401 grm. (indicating about 0.18 grm. of magnesia more than could possibly be present.) This method of separating the two alkalies gives therefore incorrect results.—*Heller's Archiv für Physiol. und Pathol. Chemie*, 1845.

[REMARKS.—In employing this process we have found it exceedingly difficult to drive off all the chlorine from the magnesia, so that a portion has been lost by water dissolving some of the chloride of magnesium with the chloride of calcium. The latter becomes strongly alkaline during calcination, and remains so on deliquescence: it therefore probably loses part of its chlorine. Mitscherlich long since remarked, that chloride of magnesium, obtained by evaporating and heating a mixture of the muriates of ammonia and magnesia, would resist a melting heat; while the salt obtained by digesting pure magnesia in muriatic acid and evaporating, was decomposed by heat, muriatic acid passing off, and caustic magnesia being left as a residue.—ED. GAZ.]

ANIMAL CHEMISTRY.

SINGULAR PROPERTY OF ALBUMEN.

PROF. WUNDERLICH remarked that any albuminous fluid loses the property of coagulating by heat, when the free alkali contained in it is neutralised by a few drops of nitric or muriatic acid. Even if a slight turbidness should result from the addition of the acid, this disappears on heating the liquid.

[REMARKS.—We have observed a similar effect on the addition of acetic acid to an albuminous liquid: but it appeared to depend on the quantity of albumen present. It was long ago shewn by Magendie, that when acetic acid was added to serum, the mixture might be heated without coagulation taking place. It merely became opaque; and on cooling, if not too diluted, it became solid; on again heating it, liquid.—ED. GAZ.]

Lectures.

CLINICAL LECTURES,

Delivered at University College Hospital,

By DR. C. J. B. WILLIAMS, F.R.S. &c.

[Taken in Short-Hand by our own Reporter, and revised by the Professor himself.]

LECTURE III.—May 22d, 1845.

Obstruction, inflammation, and gangrenous perforation of the colon—Post-mortem examination—Remarks—on stricture high up in the rectum—on the cause and nature of the attack—on the detection of peritonitis by percussion—on the pathology and treatment of the case—on old partial consolidations of the lung, and their effect, emphysema.

THERE is another fatal case to record to-day, and we shall find in it several instructive points. It is that of a woman named Mary Carney, and as the history is short, I will read it, and then make some comments upon it.

Mary Carney, aged 55, admitted Wednesday, May 14th; of middle stature; rather dark complexion, and ruddy; a washerwoman, which occupation she has been following uninterruptedly for ten years; previously to that chiefly engaged as a servant. She married in 1808, has been a widow thirty-one years, and she never had any children. Her habits and modes of life are stated to have been very regular; for several years she has not obtained sufficient food, but generally took a pint of porter daily, and has been tolerably well clothed. She resided in a small back room in Middlesex Street, Somers Town; it is quite dry, and the situation open; has lived there eighteen months; before that she lived in Drummond Crescent, has lived in London the last twenty-two years. Her parents died when she was quite young, but she does not know of what disease. She states that her general condition of health has been good, except that lately she has felt great weakness and oppression at the chest, but she has never had any serious illness for years. At the age of seventeen she had rheumatic fever, which did not entirely leave her for two years. She was at that time salivated, and took a great deal of medicine; she also had a blister applied to the knees.

The present attack commenced on the evening of Wednesday, the 7th inst., whilst washing, the weather being very cold at the time. It began with pain in the lower part of the abdomen; she did not, however, leave her work till the evening, and as the

pain was no better, she called at a druggist's shop on her way home, and obtained a couple of pills. The next day, Thursday, the pills had not operated, the pain was severe, and there was constant vomiting: she took three pennyworth of brandy without any relief. In the evening of the same day she went to another druggist, and he gave her two more pills. (This is a fair instance of the *safety and efficiency* of "counter practice.") On Friday the pills had not operated; the pain and sickness continued. Saturday evening, took an ounce of castor oil, which did not operate, but she thinks the greater part of it came up again. From this day she kept her bed till coming to the hospital. On Monday night she took a black draught, which was vomited immediately. Tuesday, being worse, she sent for a medical man, who did not visit her, but prescribed some medicine and pills, all of which she believes came up again. On Wednesday (the day of her admission) this same medical man saw her, and on finding her so ill, recommended her to the hospital—it was, indeed, a bad case to take charge of—in the meantime he ordered her to use turpentine injections: she had five administered without any relief.

On her admission, the skin was of a dark colour, dry, and hot. She has lost a good deal of flesh since the commencement of the attack; has not felt chilly, but rather hot; she lies with her knees elevated, and legs drawn up; but the pain does not compel her to this position, as she is quite as easy when they are horizontal. The head is heavy and painful, chiefly in the occipital region; she is not giddy; has had no sleep since the attack commenced; countenance is anxious, and expressive of distress; lips rather livid; cheeks flushed. Pulse 96, soft, and weak; mouth very dry and parched; tongue coated with a yellow tenacious fur; no appetite; extreme thirst; slight nausea, but she had not vomited since coming to the hospital. The abdomen is much swollen, tympanitic, and painful, most around the umbilicus, but there is slight tenderness over the whole abdominal region. The temperature on applying the hand feels rather higher than natural. The catamenia ceased about nine years ago without particular inconvenience: she can assign no reason for this attack. The bowels had always been regular before; in fact, were open on the morning of the first attack on the 7th.

She was seen on the day of admission by Dr. Quain, who ordered the bowels to be constantly fomented with warm water, and prescribed a dose of calomel, creosote, and croton oil, to be taken immediately, and to be repeated in three hours if the bowels were not opened.

The report on the 15th, when I saw her

the first time, is:—She had taken both the pills; the bowels still were not open; she has had no vomiting; the abdomen is still very tympanitic, and tender about the umbilicus in particular, and on careful examination fluid could be detected in the abdominal cavity. It was to be detected by superficial percussion; that is, being dull with superficial percussion and very slight pressure, and not being dull with stronger percussion and a greater amount of pressure. This proved the presence of a thin layer of liquid, which was also indicated by fluctuation being perceptible in particular parts, especially in the flanks and the lower part of the iliac region; the greater part of the abdomen sounded tympanitic. The urine was very scanty; the pulse upwards of 120, but the skin of the abdomen was cool, the urine scanty, acid, but not albuminous.

Twelve leeches were prescribed for the abdomen, after that a large poultice; and a grain of extract of belladonna and eight grains of calomel were to be given in a pill immediately, to be followed in three hours with a pill of two drops of croton oil, one drop of creosote, and a sufficient quantity of bread crumb. This last pill was to be repeated every two hours till the bowels should be opened; if the bowels were not opened in the evening by these pills, a turpentine injection was to be administered. On the 16th the report is, that the pills had been taken regularly; the pain is much easier, and there is no sickness, but the bowels have not been opened. The injection was administered, and the greater part of it returned immediately, and with it a little faecal matter. The pulse still 120, weak, and intermittent, obviously failing in its power: the abdomen not nearly so tender. Mark the difference in the tenderness since the application of the leeches—she could not bear the abdomen to be touched the first day; the second day it bore handling without complaint. It is stated that, "The abdomen is still tense and tympanitic; superficial fluctuation still evident; the face is not pale, but still expressing uneasiness. A large turpentine injection was then prescribed, consisting of two ounces of turpentine, one ounce and a half of castor oil, the yolk of an egg, and two pints of gruel." It was ordered to be administered with a long flexible pipe, under the idea that this would carry it on beyond any spasmodic contraction that might exist in the rectum.

There was a further order, if this injection should have no effect, to exhibit an injection consisting of a scruple of tobacco-leaves infused in eight ounces of hot water for ten minutes. The time was fixed in order to ensure a given strength. Tobacco being a very strong poison, therefore any excess

being capable of producing prostration, it is necessary to be cautious not only in the quantity used, but likewise in the time employed in making the infusion, so as not to give it too strong.

The report at 4 P.M. is:—The turpentine injection was administered with a long India-rubber tube by Dr. Quain, but some obstruction prevented the introduction of the pipe more than eight inches up the gut; therefore little of the enema was received, and the greater part returned again immediately. After this she began to sink rapidly, so much so that the tobacco enema was not used, and very properly so: for it is too depressing an agent to be employed in such a state. Tobacco is itself a very powerful sedative, and it should be reserved for cases in which considerable power remains.

She died on the following morning at 8 o'clock.

The body was examined seven hours after death; it was not much emaciated; there was a tolerable thickness of fat over the muscles of the abdomen and chest; numerous livid spots of purplish discolouration about the neck and posterior parts of the body generally.

The surfaces of the pleuræ were adherent at the upper part of the chest on the right side. The lung at the same part was very irregular; at its apex emphysematous prominences projected around a deep contracted scar, which on incision was found to consist of a dark, grey, dense texture. Near the root of the lung was another dense tough patch, puckered and depressed like a cicatrix; the lower lobe also had several emphysematous projections at its base connected with an adjoining portion of tough contraction. The weight of this lung was fifteen ounces. The left lung has also similar tough puckerings and partial emphysema at the apex and towards the root. Weight of this lung, twelve ounces.

The pericardium perfectly transparent, and not adherent. There was a thin patch of opaque deposit on the left ventricle of the heart, and another on the right. The walls of the left ventricle were slightly thickened; no disease of the valves. Weight of the heart, nine ounces.

Abdomen much distended, chiefly by gas in the intestines, corresponding with that tympanitic state which we had marked during life. No gas in the cavity of the abdomen. The peritoneum was adherent to the intestines near the umbilicus by recent lymph: on either side and below there was altogether about an ounce of muddy serous fluid. There might have been a little more, certainly very little more, and you will observe that even that small quantity had been indicated by the signs before alluded to—

superficial percussion and fluctuation. The peritoneal covering of the intestines was generally injected and coherent with slight films of soft lymph. The omentum was closely adherent to the colon, and partially to the small intestines. The stomach was healthy. The cæcum was greatly distended, and reached from the right iliac fossa to above the umbilicus. Its peritoneal surface was of a dark chocolate colour, with some patches of dark iron grey; and on separating its upper surface from the adherent omentum, feculent matter was found to have escaped from several small perforations in its coats. The peritoneal and mucous coats of the intestine, to the extent of the size of half-a-crown around these perforations, had sloughed away, leaving only the muscular fibres and a portion of the connecting texture. There were four or five similar sloughing patches, of a dark grey colour, and very soft, in other parts of the cæcum, and another of these patches was found perforated by several minute openings. The arch and descending portion of the colon were generally injected, the mucous membrane much softened, with a few patches of superficial ulceration. The colon was throughout much distended with liquid feculent matter, and some scybala; but at its termination in the rectum was a contracted point, with much thickening of the mucous and sub-mucous membrane, so that it would scarcely admit the end of the finger. At the upper end of this stricture was a circular ragged ulcer with indurated edges; the red indurated edges bore marks of recent inflammation; below the stricture the rectum was empty; and no inflammation, no disease, below the spot. At the upper part of the duodenum Brunner's glands were enlarged and very distinct; Peyer's glands, also, towards the termination of the small intestines, were beautifully marked: there was no appearance of ulceration.

The liver was small; left lobe remarkably so; slight appearance of cacoplastic deposit on the surface; the texture soft, but the structure distinct. The gall-bladder much distended with bile of a dark colour, and of the consistence of treacle. Weight of the liver, two pounds and three quarters.

The right kidney rather rough and granular upon the surface, particularly at the lower part; the capsule adhered firmly; the weight five ounces and three quarters. The left kidney has some granular appearance, but is less in size than the right; this is contrary to what is usual. There were two cysts on the surface containing muddy fluid. Weight, three ounces and a quarter. Bladder much contracted; contained no urine. Uterus shrunk, and very dense in structure; the os uteri was red, and slightly injected.

The case as it presented itself after her admission was one of much obscurity. Without any clear history of previous disease, without any adequate cause for the present attack, there were the various symptoms of obstructed bowels, passing speedily on to inflammation and exhaustion. Now that the post-mortem examination reveals the full nature of the lesion, we can understand pretty well the manner in which the attack took place, and can explain the symptoms.

The stricture could not have been produced in the short period of time from which this attack dates; it must have been an old disease, and the attack seems to have been dependent upon an obstruction of the bowel connected with that stricture. The stricture itself very much contracted the caliber of the gut, so that it would not permit the finger to pass, and I think it is fair to suppose that some of the scybala which were found in the colon would be enough to complete the blockade, and thus a state of entire obstruction to the passage of the feces from the intestines took place. But there seems to have been from the commencement of the attack something of inflammatory symptoms. There was pain, not remittent but constant, and from the time of the first occurrence of pain, after she was exposed to cold, until the time of her death, the bowels were never properly opened. Such a stoppage takes place in cases of ileus and fatal enteritis, and the effect of that obstruction, whether from scybala only, or from scybala with some inflammation superadded, was to cause an accumulation in the colon, and consequently continued irritation and increasing distension of the colon first, and subsequently of the other intestines which evacuate their contents into it, without its having the means of emptying itself. The consequence of this continued irritation and distension appears to have been deep-seated inflammation of the whole colon, which went on to gangrene in some parts, particularly in the cæcum, and produced further disorganization, namely, abrasion of the coats, and perforation. Perforation necessarily led to the production of peritoneal inflammation. The symptoms which she presented when brought to the hospital might be considered to be those of the advanced stage of all these lesions—excessive irritation, distension of the colon, inflammation, ulceration and gangrene, and perforation of the coats, with consequent peritonitis.

There are several remarkable points in this case, to which it is well to draw your attention.

In the first place, the nature and situation of the stricture. The stricture was one of a non-malignant kind, apparently consisting of a limited somewhat dense caco-plastic

deposit in the submucous texture of the colon, and accompanied by a thickening or hypertrophy of the mucous coat itself. This is the common character of non-malignant stricture; it was not accompanied by so much thickening as we often see in cases of this description. Another point of interest is the *situation* of the stricture; it was quite low down in the colon, or, as might be said, high up in the rectum—about the termination of the one in the other. Unfortunately the stricture was accidentally cut through, and it was not easy to determine the precise position it occupied, but it appeared to be about eight or nine inches from the anus; therefore it might be said to correspond with a stricture high up in the rectum. I mention this, because I know it has been stated on very high authority that such strictures of a non-malignant kind do not exist. Here is a proof to the contrary. But it is another question whether a stricture in that situation is capable of benefit by surgical interference. Those who deny that such strictures exist, deny it, I believe, partly with a view to maintain that surgical interference with a stricture high up in the rectum is unnecessary or dangerous; and although this case distinctly proves that a stricture may exist high up in the rectum, yet it does not prove that a stricture in that situation would be materially benefited by passing bougies, or other mechanical means; a sort of interference which is a favourite and profitable practice with certain practitioners, and which is equally decried by some of the most respectable surgeons of the present day. But it is not mine to enter into this question.

However, I think we must consider this stricture as the origin of the attack; and perhaps you will be led to wonder that the patient had not any symptoms of the previous existence of the stricture. She declares that the bowels had been regular before, and nothing had led to the suspicion of there being any disease there. Now I have known several cases in which there has been stricture of the intestines, in which for months the patients have gone on very well without experiencing any inconvenience, the feculent evacuations being in a semi-fluid state, and the bowels being easily evacuated even through the constricted portion of the gut. But these persons are liable to severe attacks of illness, when either the feces become more solid than usual, and may therefore become impacted, so as to form a total obstruction in the stricture,—or else when an inflammatory attack of any kind increases the thickening about the stricture and completes the obstruction. These attacks of illness are accompanied by obstinate constipation, and often endanger life.

I think it is exceedingly probable that the attack which this patient had was of a com-

plex character—that it was partly inflammatory, the effect of cold, and partly mechanical, from an accumulation of scybala, and the impossibility of that passing the intestine. The bowels having been opened every day before the attack, is no proof that scybala had not remained there. To have the bowels *opened* is one thing; to have them *emptied* is another. I have known many cases of feculent accumulation in the intestines to a very enormous amount taking place when the bowels had been regularly opened every day for a long time before. In these cases, the cells of the colon particularly, and sometimes other parts, retain a portion of feculent matter. We have the proof of it here. From the first attack, till the time she died, she took little or no nourishment, or, what little she did take, did not remain in the stomach; yet a large quantity of feculent matter was found in the intestines, partly in a liquid state, owing no doubt to the operation of the medicine, but partly retaining its scybalous condition, showing the feculent accumulation which I consider to have been a part of the cause of the attack.

I was confident, at the time she was brought to the hospital, from the tympanitic state of the bowels, and from the persistence of signs of intestinal irritation and pain, that there was feculent accumulation. But I was in doubt as to the cause of the obstruction; I thought there might be intussusception, or internal strangulation, or a stricture, or it might be—though it was not at all probable—simply the result of inflammation. There are cases on record in which deep-seated inflammation only, has produced obstruction by paralysing the portion of the intestine most inflamed, and allowing such an amount of accumulation in the paralysed portion as to constitute a physical obstruction to the passage of the feces: such a case is recorded by Dr. Abercrombie. In most instances, however, there is an additional mechanical cause of obstruction. My opinion was, that there was such an obstruction; that if it depended on spasm and impaction of feces chiefly, we might overcome it by the means employed, and the patient would recover; but the patient died, and we found an abundant explanation of our failure and of the cause of death, in the post-mortem examination.

The third point to which I draw your attention is, the signs of peritonitis. When she first came under my notice, it was a great object to determine whether any inflammation was present; for you will observe sometimes, when the bowels have been blocked for several days, and there is a distension from feces and gas, the parts are bruised and sore, yet there is no active inflammation developed, and in many such

cases all the pain and suffering will go off in two or three days after the bowels are effectively opened, and under such circumstances no antiphlogistic treatment would be necessary. Antiphlogistic treatment was not indicated by the general symptoms. Although the pulse was frequent it was very weak, and the heat of the skin was subdued by the time I saw her; the obstinate vomiting, which before had been so distressing, had also subsided; therefore, unless we could find some unequivocal signs of inflammation, I hesitated about the detraction of blood, and confined my attention to the great indication of getting the bowels open, under the idea that if it were a mere accumulation accompanied by pain this would be an effectual cure, but if it were connected with inflammation some antiphlogistic treatment might yet be practised, although there was little prospect of its being of any avail. It was an object, therefore, to determine the presence of inflammation, and I resorted to percussion to ascertain if there was peritonitis. I did so by ascertaining that there was superficial fluctuation and dulness on percussion. Fluctuation accompanied by pain is a proof of the presence of serum arising from inflammatory affection of the peritoneum. I think this case illustrates very well how delicate these means of physical investigation are when applied to the abdomen. Fluctuation should be sought for on a circumscribed portion of the abdomen only, the most dependent part being preferred, and the striking and feeling fingers applied very delicately. Percussion should be used also very gently, both with regard to the pressure of the pleximeter or finger applied, and the stroke to be given. And if the sound thus obtained is much duller than when more pressure and force are used, the presence of a thin layer of liquid is proved. Such was the case here; and proving as it did the presence of inflammation, it determined me on the application of leeches. If the pulse had been stronger, her strength greater, and the attack more recent, instead of applying this dozen leeches, which would be comparatively inefficacious for curing the whole disease, I should have used antiphlogistic measures far more extensively; but the general symptoms quite forbade it.

The general symptoms, besides being dubious as to the presence of active inflammation, were likewise equivocal as to the supervention of gangrene. It is commonly described in books, that when gangrene supervenes on enteritis, the whole symptoms undergo a change,—the pulse becomes very weak, and often intermittent. So far it was the case here: but it is also said that the whole surface becomes bedewed with perspiration; the face loses its colour, and the

features collapse: these symptoms were not present here, nor was there that marked mitigation of pain which often occurs on the supervention of gangrene. The best indication we gained was from the physical signs. The peritonitis was indicated by the effusion; the condition of the intestine by the exploration of the gut. Dr. Quain tells me that in the administration of the enema he found a difficulty in the introduction of a long tube six or eight inches up the rectum. This fact, and that the contents of the enema were returned almost immediately, might be considered a conclusive proof of mechanical obstruction. I did not learn these facts till after death, or I should have pronounced more strongly on the existence of the stricture.

The next point to which I would allude is the entire failure of all the treatment employed. I believe that you will readily acquit me of all blame for not curing a patient brought in, in the condition revealed to us after death. It is pretty plain that the extensive inflammation of the intestines had been going on several days previously, and that the gangrenous patches in the cæcum existed at the time she was brought to the hospital; I think it most likely, too, that the perforation had already taken place.

There is one point with regard to the perforation which I wish to explain, namely, why it was not accompanied with the sudden and severe symptoms which usually indicate its occurrence. You will remember that although there was some feculent matter effused into the abdomen there was no great quantity of it, and there had been no gas effused into that cavity. I think we must consider that the peritoneum had become inflamed before the perforation took place, and that by inflammation, the sloughing parts of the colon, or those parts adjoining them, had become adherent to the omentum and intestines, so that, when perforation did occur, feculent matter was not effused to any extent. Hence it was only an aggravation of the previously existing disease, and not like that attack which occurs when an ulcer suddenly makes its way to the exterior and pours out into the peritoneal sac and abdomen a considerable amount of irritating feculent matter and gas, producing violent irritation first, then extensive inflammation. This, I believe, was the reason why we had not those distinctive marks of perforation that occur in other cases.

With regard to the case in its earlier history, I think there is good reason to believe that if she had been put under treatment at once she might have been saved from this attack at least; that the bowels might have been opened before disorganization was produced, the inflammation subdued, and the gangrene and perforation prevented. I may point this out as one of the *excellent* re-

sults of the counter practice of druggists, which it seems was the only advice sought by this woman during the first seven days of her illness—the very time when treatment would have been effective. She was attacked on Wednesday the 7th. and was not seen by a medical man until the following Wednesday—a whole week; it was a regular druggist's job until that time. It is just an illustration of the enormous mischief that happens to the lower orders by this substitution of what is little better than quackery, for proper advice. There is very good reason to believe that had proper means been used early, she might have recovered, although the stricture would not have been curable. You will find numerous cases where a similar attack connected with stricture has occurred, and if the inflammation be early subdued, the feculent matter reduced into a liquid state by medicines and injections, and the bowels evacuated, the symptoms subside; and the more intense irritation does not take place. The reason why the cæcum suffered more than any other part is, that it is the place where feculent accumulations are most likely to occur; it was here that irritation reached its acme and did its worst.

The only other point arising out of the consideration of the post-mortem examination is the state of the lung. We found this lung exhibiting in a remarkable degree the very common combination of emphysema with partial consolidation of the lung. We do not find from the history that she had had any further symptoms of disease of the lung than a difficulty of breathing accompanied with a general oppression and weakness of the chest. Her general health did not seem materially impaired. There are a great many persons with emphysema to the amount which existed here who maintain a tolerable state of existence without falling into active disease. I presume this must have been one of such cases. But if her history had been more closely sifted, if she had been in a state of body and mind in which we could have inquired more narrowly, no doubt we should have found that some years ago she suffered from a severe cold and cough, something like an inflammatory affection of the chest, that it lasted longer or shorter, that perhaps two or three winters it recurred more or less, that she had symptoms that were put down to an obstinate cold or chronic bronchitis—the names under which these attacks often pass. Such attacks, in bad constitutions, are the commencement of consumptive disease; but where the general health is good they do not advance to this degree; nevertheless, they leave effects behind them. We found the traces of these old lesions in the consolidations dispersed in different parts of the

organ, at the apex particularly, but also at the base,—these consolidations consisting chiefly of tough dark grey structure in the internal part of the lung, but where it came on the pleura, appearing as dense white fibro-cartilaginous patches. In cutting into these parts they exhibited the appearance of old tuberculous disease, without any traces of recent tubercle. In many instances of such lesions we find with these remnants of old disease, other parts of the lung in a more or less emphysematous state. This case is a very good illustration of the views which I have frequently brought before you as to the most common origin of emphysema of the lung. It depends upon consolidations in the interior of the lung, generally at the apex or root, which interfere with the expansibility of those parts, and inasmuch as the respiratory process still introduces air into the bronchial tubes, and atmospheric pressure reaches the interior of the lung, the amount to which these contracted portions cannot be extended is made up by an increased distension of the adjoining portion. This is the origin of emphysema of the lung: it is the most efficient of any of the causes that induce emphysema of the lung—not only partial emphysema, as in the present case, but also the more general forms of that disease. This observation I have made for eight or ten years past, and increasing experience confirms me in it to such an extent, that I believe the common pathological cause of emphysema of the lung is not what has been described by preceding writers, but that it almost exclusively arises from induration and contraction at or near the root of the lung. This may be considered to be a specimen of an old lesion cured—that is, the consolidation of the lung—consolidation which in other instances runs into tubercles; and of a new lesion induced by that very cure—expansion and permanent dilatation of the adjoining air-cells.

TRACHEOTOMY.

WHEN the operation of tracheotomy is to be performed, you will find things in a different condition from what you might suppose from performing it on the dead subject. It is all very well to say, throw the head back and give yourself room; but you cannot put your patient into the position you would wish, on account of the difficulty of breathing; it is so great that he cannot bear such a position an instant, and that in which you find him is generally a bad one, for he is leaning forwards; and you must put up with the inconvenience.—*Professor Colles' Lectures.*

CLINICAL LECTURE,

Delivered August 20th, 1845,

By BRANSBY B. COOPER, ESQ.

Surgeon to Guy's Hospital.

Femoral Aneurism—Operation for tying the external iliac artery.

It may be thought premature to give a clinical lecture, when the patient is not yet out of danger, which our patient cannot be considered until the ligature has separated from the artery; still, there are some circumstances which induce me to direct your attention to the case in this early stage.

H—S—, æt. 51, a healthy-looking man, of spare habit, ordinary stature, but of rather a phlegmatic temperament, was admitted August 4th, 1845, into Lazarus Ward, for aneurism of the right femoral artery. He is by occupation a carpenter; a married man, with a family of four children. With the exception of an attack of fever about twenty years ago, he has always enjoyed good general health. About four years since ulcers broke out upon both legs; that upon the right is not yet entirely healed, being only scabbed over. He has been accustomed to take four or five pints of beer daily, but has never drank spirits.

He dates the commencement of the disease from April last, and ascribes its origin to stumbling over a stone whilst carrying a heavy piece of wood. After this accident it appears he felt a slight pain in the right groin, followed in about three or four days by the appearance of a pulsating tumor about the size of a hazel-nut. This tumor gradually increased in size, becoming firmer, and pulsating less visibly, until it has attained its present magnitude. Although soon after its appearance he was advised by his medical attendant to enter the hospital, yet he continued to follow his occupation as long as he was able, merely applying cold lotions to the part. The tumor at the period of his admission was raised about two inches above the level of the thigh, and it was about five inches in diameter, entirely occupying that triangular space, the apex of which is formed by the junction of the sartorius and rectus and the base by Poupart's ligament, which the tumor slightly overlapped. The pulsation is equally distinct in every part, and can be checked by pressure upon the external iliac artery, but the tumor, from the solid nature of its contents, cannot be emptied. Upon auscultation a loud whizzing sound is heard accompanying each pulsation, which also communicates a vibratory sensation when pressure is made with the fingers. He complains of pain in the tumor, especially at night; and of numbness down the forepart of the thigh and inside of the knee. His chest upon examination by Dr. Addison and

Dr. Hughes, and myself, was pronounced to be sound. His pulse is perfectly natural both as to quality and frequency.

Aug. 6th.—He was bled to six ounces.

The operation was not performed on the 7th, the day fixed for it, as the patient was labouring under considerable constitutional derangement. His skin was hot and dry; tongue furred; complained of thirst, headache, and feeling of languor. His pulse was 120, compressible, and weak. Bowels costive. Dr. Hughes ordered him—

Hyd. c. Cretâ, gr. iij.; Pulv. Rhei, gr. vj. ft. pulv. statim sumendus.

At 8 P.M. his bowels had not been opened, nor any of his symptoms relieved, and he was ordered—

Spt. Æther. Nitrici, ℥xix.; Spt. Ammon. Co. ʒss.; Træ Opii, ℥xix. ex Julep Menth. statim. Ol. Ricini, ʒij. primo mane nisi alvus soluta fuerit. Three ounces of wine daily.

8th.—The bowels have been freely opened; indeed, rather purged, so as to render a dose of chalk mixture and laudanum necessary to check it.

9th.—Some febrile action was still evinced, and he complained of pain in the head, accompanied with thirst, and some anxiety of countenance. Saline medicines were administered.

11th.—He complained of pain in the arm from which he had been bled, and upon examination a small abscess was found, and matter issuing from the orifice. Fomentations and poultices were ordered.

12th.—Considerably improved in general health, but complained of more pain in the aneurismal tumor, which had somewhat increased in size since his admission. The temperature of his lower extremities was taken (the thermometer being placed in the popliteal regions) and was found the same in both limbs, being 98° F.

He remained much in the same state until the 14th, when it was considered unsafe longer to delay the operation, as the tumor was certainly increasing in size, and becoming more painful.

14th.—At 1 o'clock the operation was performed. Scarcely any blood was lost. He was removed to bed, the knee being slightly flexed, and the limb enveloped in flannel. The temperature of the limb about half an hour after the operation was 95° F. At 9 P.M. the temperature had risen to 99° F.

15th, 11 A.M.—Passed a tolerable night, his sleep being disturbed by dreams. Pulse 100, and all the symptoms of inflammatory fever are present. The temperature of the sound limb was found to be 101° F., of the other 102° F.

At 2 P.M. he complained of pain in the abdomen, for which a poultice was applied.

8 P.M.—Abdominal pain increased; countenance somewhat anxious: pulse 130, and wiry. He made no positive complaint, but his appearance rather indicated general prostration.

16th, 8 A.M.—Slept for short periods during the night. Complains of great debility, speaking in a whisper. The pain in the abdomen still continues. Pulse 100, weak; tongue brown and dry; skin cool.

To continue the poultices to the abdomen, and take immediately *Liq. Opii Sedativ.* gtt. x.; *Liq. Ammon. Acet.* ʒij.; *Mist. Camphoræ*, ʒiiss. statim, and perfect quietude enjoined. Six ounces of wine ordered.

At 1 o'clock he was very much improved; pulse 80, increased in strength.

17th.—Wound dressed, and looking healthy, with a copious discharge of thin pus. Pulse 84; bowels open. Takes his wine and arrowroot, and ate some fish for dinner.

18th.—Continues much the same.

19th.—Remarkably improved, as regards his general aspect. Passed a very fair night. Pulse 88, stronger. Complains of pain about the knee and leg, but upon examination the limb appears perfectly natural, its temperature being if anything rather higher than that of the opposite leg. The tumor, however, has not in the least diminished in size, but is hard, tense, and hot.

REMARKS.—It most commonly occurs in cases of aneurism that the patient attributes his disease to some local exciting cause; this man felt pain immediately after stumbling over a stone; and the individual commonly experiences a sensation as if something had given way at the part. From this fact we might be led to suppose that aneurisms arise generally from a local cause; but this I believe never to be the case in what may be called idiopathic or true aneurism, but only in those of the spurious kind. You are all aware that an artery is composed of three coats, which are as highly organized as the other tissues of the body, and are consequently equally liable to inflammation and its effects. Amongst the most common changes, there is a diminution of the proportionate elasticity of the three coats, so that the force of blood not being equally resisted by the tunics the internal coats yield: a portion of blood immediately becomes coagulated at that part, and a true aneurism is thus formed. In this case the diagnostic marks of the disease were sufficiently obvious; the tumor pulsated over its whole surface; and when pressure was made upon the artery above, this pulsation ceased, but without the tumor becoming as usual flaccid. I had a double object in view in taking away a small quantity of blood from this patient;

first, to diminish his arterial action, and secondly, because it gave me an opportunity of making a chemical examination of that fluid. You may perhaps consider, gentlemen, that such an occupation is scarcely within the province of a surgeon's duty, but I believe myself, that if any great advance is to be made in the science of surgery, it will be effected through the medium of a chemical examination of the secretions and excretions of the body in health and disease. We are, indeed, fast going back to the doctrine of humoral pathology; and how can it be otherwise, when we take a physiological view of the healthy or diseased actions of the living body? There can be no doubt that the performance of healthy functions depends as much upon the integrity of the chemical constituents of the blood as diseased action does upon their deterioration: it is out of my present object, however, to dwell longer upon this subject.

I need not give the exact analysis of the blood of this patient, as it differed in no respect from that of health, beyond containing rather a larger quantity than usual of water; a fact according with the appearance and constitutional symptoms of the patient. I should form a favourable prognosis in this case, but for the appearance of the tumor, which instead of becoming flaccid, as usually occurs after the application of the ligature, retains its original firmness, form, and size. It generally happens that the serum and red particles of the clot become absorbed, leaving only the fibrin, which more slowly and gradually diminishes in size; and when this change does not take place, there is danger of this fluid becoming decomposed, thus causing great irritation and subsequent suppuration of the tumor,—a process so protracted and debilitating that I should fear this patient would be scarcely able to sustain so severe a trial of his strength.

You may perhaps expect me to make some remarks upon the steps I followed for securing the external iliac artery; and, indeed, I feel induced to do so, as the plan was somewhat different from that which I have adopted upon former occasions. It is of great importance in all operations to have the commencement and precise extent of your incisions well defined. In this operation an incision is made through the skin and superficial fascia of the abdomen, commencing immediately on the outer side of the external ring, and terminating within an inch of the anterior superior spinous process of the ilium, and no part of this incision should be more than half an inch above Poupart's ligament. In depth it should extend only to the tendon of the external abdominal oblique, without dividing any of its fibres. In this step some hemorrhage may occur from the circumflex ilii, external

epigastric, or external pudic branches, which although naturally small may have become distended from the obstruction of blood through their parent trunk; and should the bleeding be troublesome the vessel ought to be at once secured.

The next object is to lay open the inguinal canal, which is effected by cutting through the tendon of the external abdominal oblique to the full extent of your first incision. The spermatic cord is then to be drawn upwards and inwards towards the linea alba, and the cremaster muscle pressed downwards towards Poupart's ligament. When this is effected the fascia transversalis is completely exposed, partly passing down beneath Poupart's ligament to form the anterior layer of the sheath of the femoral vessels, and on the outer side firmly attached to that ligament. The next step is to open the cavity of the abdomen, and this should be effected by dividing the fascia on the outer half of your incision, where it will be found that the peritoneum is very easily pushed upwards; while, on the contrary, if you make your opening on the inner side of the internal ring, the peritoneum in its course to the scrotum, where it forms the tunica vaginalis, is so firmly united to the fascia as to be with difficulty separated, and liable to be torn in the attempt. All that remains now to be done is to separate the artery from the vein, by dividing with your finger-nail the fascia iliaca which covers them; and then, passing your aneurismal needle between the two vessels, its point is directed from within to without, and the ligature tightened with that degree of force necessary to cut through the two internal coats of the vessel. What is the precise degree of force to be employed is impossible to be described by words, and is only to be acquired by practice. I would dwell particularly on the necessity of passing the aneurismal needle from within to without, for if an attempt be made to pass it in the opposite direction, the vein is almost sure to be wounded. The edges of the wound are now to be brought together, either by ligature or strapping, and the patient placed in bed with the aneurismal limb well wrapped in flannel. Some surgeons recommend hot water to be applied to the foot, which in my opinion is wrong, as it excites too rapid a flow of blood through the capillaries. The great diminution in the temperature of the limb after the operation was unusual both as to the period of its occurrence and the degree. I shall take some future opportunity of drawing your attention to the progress of this case*.

* Aug. 28. We are authorized to state, that the patient, up to the present date, is progressively improving, and in every respect there is the promise of a happy termination to the case.

Original Communications.

ON

THE NATURE AND TREATMENT OF FLOODINGS AFTER DELIVERY.

By FRANCIS ADAMS, ESQ.
President of the Aberdeen Medico-Chirurgical Society*.

As the exposition of the doctrines which I am prepared to advocate, on a highly important point of obstetrical practice, will involve various principles in pathology about which some diversity of opinion subsists, I consider it indispensably necessary to take a preliminary view of the general subject of which flooding after delivery constitutes a portion. Avoiding, then, all minuteness of detail, I shall now state very succinctly what I hold to be well-ascertained facts and established principles,—first, regarding the causes of hæmorrhages in general; and secondly, regarding those which take place from the uterine region.

I. The instrumental causes, as they have been called, that is to say, the causes connected with the condition of the instrument or vessel which contains the blood, have been differently arranged from the earliest ages of medical science; but perhaps the following division of them, which is borrowed in a great measure from Cælius Aurelianus, will be found pretty complete, and less liable to objection than any other which has ever been proposed†:—1st, Rupture; 2d, Erosion; 3d, Exhalation; and 4th, Exudation. The nature of the first class, namely, of those which originate in external lesion of the vessel, are now so well understood, that little need be said here in illustration of them. I would call attention, however, to the important fact, that very small vessels, which in ordinary circumstances would scarcely pour out any portion of their contents, sometimes acquire the hæmorrhagic diathesis. The following simple case will illustrate what I am treating of. Some years ago, in making an incision in a boy's temple, in order to extract a small piece of needle which had lodged in it, I cut a very insignificant branch of the temporal artery, from which scarcely two tea-spoonfuls of blood were discharged at the time. But about ten days afterwards, while he was walking in a strong sun, a violent hæmorrhage took place; and when I looked at the wound soon after, I found it much engorged, but could not detect the vessel which poured forth the blood. I attempted at first to

* Read at a meeting of the Society on the 3d of July last.

† Tard. Pass. ii. 10. There is also a curious passage on this subject in Galen, Meth. Med. v. 1.

prevent a recurrence of the bleeding by means of graduated compresses, but still at times the *molimen hæmorrhagicum* became so violent as to burst through all the apparatus used to restrain it. It is deserving of remark, that what stopped the bleeding effectually, was keeping the head constantly cooled by means of a cold solution of sulphate of zinc. It is a well-known fact, that blood-vessels in the perineal region, when wounded, manifest a strong disposition to bleed: thus the opening of a small artery or vein in the operations for stone, fistula in ano, and hæmorrhoids, has often proved fatal. Cases in point are related by Sir Astley Cooper and Lisfranc. In one instance, which I met with some years ago, after opening a very superficial abscess in the posterior perineum, although there was no bleeding at the time, such a hæmorrhage took place a few hours afterwards, as to bring the person into imminent danger. For reasons also never very satisfactorily accounted for, a discharge of blood from the perineum, to an amount which would not have been reckoned dangerous from other parts of the body, has proved fatal. 2. Erosion, under which I include ulceration and sloughing, is well known to be the ordinary cause of hæmorrhage in dysentery and typhus fevers, and it sometimes, but rarely, is the cause of hæmoptysis. Sloughing, I need scarcely remark, is the common cause of hæmorrhage, in the bursting of aneurisms, and also, according to my own observation, in secondary hæmorrhages after amputation. 3. Exhalation, that is to say, an excited action of the exhalants, is now well ascertained to be the ordinary cause of hæmorrhage in epistaxis, hæmatemesis, hæmoptysis, and, in short, in all active hæmorrhages where there is no rupture of the vessels. 4. The nature of hæmorrhages connected with exudation is much more obscure than that of the others, but there seems reason to suppose that the escape of the blood must be referred either to laxity, that is to say, loss of tone in the vessels, or to the abnormal fluidity of their contents.* Bleeding of the gums in scurvy, and in purpura hæmorrhagica, may possibly be referred to this class; but still, so far as my own experience warrants me to draw inferences in these cases, I am disposed to attribute the bleeding, when copious, to excitement based on debility, that is to say, to the excessive action of enfeebled vessels; and the practice which of late years has been most successful in purpura, tends strongly to support this opinion. Even in passive hyperæmia, although the general action of the arterial system be reduced, there would appear to be increased activity of the capillaries in the part from which the

bleeding proceeds. In most of the cases which have been related of late years, it is also distinctly stated that there was decomposition of the blood*. In fine, exudation scarcely ever occurs, except in cachectic states of the system, or from idiosyncrasy.

II. I now proceed to apply the facts and principles which I have stated, to illustrate the nature of hæmorrhages from the region of the uterus. In the first place, then, with regard to the menstrual discharge, we need have no hesitation in determining (without involving ourselves in the question regarding the expulsion of the Graafian vesicle) that it proceeds from exhalation, that is to say, from enlargement and increased activity of the exhalant vessels of the uterus. This is clearly established from the cases related by M. Gendrin.

"CASE I.—A woman, æt. 30, hung herself at the epoch of menstruation. The mucous membrane of the vagina and the cervix uteri were very vascular. The substance of the uterus was much injected," &c.

"CASE II.—A girl threw herself out of a window while menstruating, fractured her skull, and died in an hour. The mucous membrane of the vagina and the os tinæ were deeply injected. The inner surface of the uterus was covered with villi, which, when viewed with the microscope, were red and fungiform†."

These cases, then, and several others related by the same author, put it beyond a doubt that the menstrual discharge is connected with exhalation, or increased vascularity of the uterine surface, and excitement of the exhalants. Having thus determined the state of the parts in natural menstruation, we can have no difficulty in further concluding, that in menorrhagia the increased discharge proceeds from a preternaturally increased action of the same vessels. Chronic cases, indeed, are, no doubt, often connected with organic disease, and ulceration about the os tinæ, or on the inner surface of the womb‡. That the hæmorrhage which accompanies miscarriages is usually of the same kind as ordinary menorrhagia, we are fully warranted in inferring, from the fact now established by the best obstetrical authorities, that miscarriages almost invariably occur at the period

* See London and Edinburgh Monthly Journal, No. 6.

† *Traité Phil. de Méd. Pratique*, t. ii. 18.

‡ No writer has given so accurate a description of this class of hæmorrhages as M. Boivin. She divides them into active and passive hæmorrhages, meaning by the latter, chronic. In those long protracted "the blood becomes pale and serous, both that which flows from the uterus and that which supplies the rest of the system." (English edition, p. 400.) Soranus, the great ancient authority on this subject, refers those cases of uterine hæmorrhage in which the discharge is small and attended with much pain, to erosion. (*Op. cit.* 105—see below.)

* Galen's remarks on bleeding by exudation are very ingenious: *loc. cit.*

of menstruation. The hæmorrhages which take place in the latter months of pregnancy are connected no doubt with a variety of causes; often with engorgement of the os tinctæ, and exhalation from the vessels thereof; sometimes from a ruptured vessel either of the fetal appendages, or of the uterus itself, which has acquired the *molimen hæmorrhagicum*; and sometimes, although, judging from my own experience, less frequently than is generally stated by our late authorities, from separation of a portion of the placenta. In the latter case, it is a most important question to determine whether the blood proceeds from the ruptured vessels of the placenta, or from those of the uterus. Until very lately all our obstetrical authorities, as, for example, Ingleby, De-wees, Davis, Ramsbotham, Burns, and the author of the London Practice of Midwifery, held that the source of the bleeding in this case is from ruptured vessels which pass from the uterus to the placental cells. The late Dr. Hamilton, of Edinburgh, in his last publication, was the first, so far as I know, who held, on the contrary, that the hæmorrhage in these cases proceeds from the separated portion of the placenta*. I need scarcely remark, that his successor in the Chair of Midwifery in the Edinburgh University has lately introduced a very important improvement in the treatment of these cases, founded on the views previously advocated by Dr. Hamilton.

The most common cause of hæmorrhage during parturition has been generally supposed to be an abnormal attachment of the placenta to the cervix uteri; but this is not in accordance with my own experience, since, after nearly thirty years' extensive practice, I never met with a single well-marked case of placenta prævia, and never heard of more than one case having occurred in the district where I reside; but, at the same time, I have met with several cases in which there was alarming hæmorrhage from engorgement of the os uteri, and it is deserving of remark, that in these cases the feel of the os uteri was such as at first to convey the impression that it was a portion of the placenta.

I called the attention of the profession to this complication of uterine hæmorrhages in the MEDICAL GAZETTE, October 30, 1840. My communication was followed by several others, in subsequent num-

* Hamilton's Practical Observations, p. 227. In looking again into Gendrin, I find the same doctrine most explicitly taught by him; and as his work and Dr. Hamilton's appeared about the same time, it is difficult to say which of them has the merit of priority (p. 269, and British and Foreign Review, xix. 91.) Indeed, considering how far behind his age Dr. Hamilton was latterly, both as regards physiology and pathology, it is not likely that a new idea on this subject should have suggested itself originally to him.

bers of that periodical, from other members of the profession who had met with similar cases of engorgement of the os uteri, simulating the appearance of placenta prævia. I may here mention, that I have often been inclined to suspect that many of the uterine hæmorrhages which of late years have been indiscriminately referred to separation of the placenta, may have been owing to the cause now adverted to. In a large proportion of the cases related by Dr. Rigby, in his celebrated essay on Uterine Hæmorrhage, I see no proof that they were connected with separation of the placenta, and I doubt very much if he was warranted in laying it down as a general rule, that "the separation of the placenta from the uterus before the delivery of the child, and the consequent opening of its vessels, must be looked upon as the proximate cause of every considerable discharge of blood from the womb at that time*." In 64 cases out of 106 which he relates, he admits that the placenta could not be felt; and in these, at least, there is no evidence that the placenta had anything to do with the flooding. Altogether the subject of placental presentation, and its connection with uterine hæmorrhage, still stands in need of further elucidation. Much more enlightened views now prevail, both with regard to embryology and hæmorrhage, than those held at the time when the elder Rigby pursued his investigation of the subject.

When the hæmorrhage does arise from separation of the placenta, it would seem that the blood is poured forth from the vessels of the placenta being ruptured, and acquiring the hæmorrhagic diathesis; and not from those of the uterus, as until lately was almost universally taught. The cases formerly related by Smellie and Gendrin are sufficient to establish this fact; and the cases and views so lucidly brought forward lately by Dr. Simpson seem to confirm it.

Before quitting this part of my subject, I may mention that Soranus refers all copious and sudden discharges of blood from the uterus either to rupture or exhalation (anastomosis); and the more scanty and painful ones to erosion†. This, I need scarcely say, agrees very well with my views.

III. Having thus briefly stated what I hold to be well-ascertained facts, and the best established opinions with regard to the general subject of uterine hæmorrhages, I now proceed to the consideration of the nature and treatment of the hæmorrhages immediately subsequent to delivery. The following extract from Burns's Midwifery, a work which has contributed more perhaps than any other to form the professional opinions on obstetrical practice during the

* Op. cit. p. 13.

† C. 235.

last thirty years, will put in a clear point of view the doctrines now maintained on this head:—

“In natural labour, after the expulsion of the child, the uterus contracts so much as to loosen the attachment of the placenta and membranes to its surface, and afterwards to expel them. The process is always accompanied by the discharge of blood, but the quantity in general is small. If, however, the uterine cavities should not duly contract after the delivery of the child, *so as to diminish the diameter of the vessels*, and at the same time accommodate the size of the womb to the substance which still remains within it, then, provided the placenta and membranes be *wholly* or in part separated, *the vessels which passed from the uterus to the ovum* shall be open and unsupported, and will pour out blood with an impetuosity proportioned to their size and the force of the circulation. This flow will continue until syncope check the motion, or coagula stop the mouths of the vessels. *It is evident that the cause of the flooding is the torpor of the uterus*. The fibres may become inactive, or have their tonic contraction impaired, immediately after the pain which expels the child.” p. 387. 3d edit. He adds, in a foot-note:—“When the uterus contracts properly after the delivery of the child, it will be felt, if the hand be applied to the abdomen, like a hard and solid mass, but when torpid, it is not so distinctly felt, for it is softer, being destitute of tonic contraction. A similar view of the subject is given in *The London Practice of Midwifery*, p. 237, 4th edit. and other popular works on midwifery.

It appears, then, that the doctrine which has prevailed in the schools of medicine for some time past is founded on the hypothesis that blood-vessels pass from the substance of the uterus to the placenta; that these are ruptured by the separation of the placenta; that in ordinary cases the discharge is stopped by the tonic contraction of the uterus, whereas, in cases of flooding, the uterus, being in a torpid state, does not contract, but allows the blood to exude from the open or ruptured mouths of vessels which formerly passed into the placenta.

To this view of the matter, I object, in the first place, that it is founded on an erroneous hypothesis regarding the structure of the placenta.

I need scarcely say that my present limits utterly preclude me from entering upon any discussion of the *questio vexata* regarding the connection between the mother and the fœtus in utero. I shall content myself, therefore, with giving a bare enumeration of my reasons for holding that there is no vascular communication between the mother and the vessels, or membranes of the fœtus.

I. Because it is contrary to every analogy in the animal and vegetable kingdoms of nature. 1. There is no vascular connection between the acorn in its germinal state and the tree which produced it. 2. There is clearly none in all oviparous animals, comprehending insects, most of the amphibia, and fishes, and all the birds. 3. There is none in viviparous reptiles, as I can attest from careful dissection of vipers with young. 4. It is admitted that there is none in any of the mammalia which have been carefully examined, as, for example, the doe, the cow, the mare, and the sow. See Harvey, De Graaf, Carus, and others.

II. In extra-uterine pregnancy a regular placenta is formed, and yet it is impossible to suppose that any portion of it can be maternal.

III. The placenta has been found attached to polypi, and to hardened portions of the uterus. See Velpeau's *Embryologie*, &c.

IV. In separating the placenta by the introduction of the hand into the uterus, there is no sensation that one is breaking up a vascular band.

V. Having repeatedly examined the uterine surface of the placenta after delivery, with the microscope, I never could detect any orifices in the chorion, nor the extremities of any ruptured vessels which had entered it.

VI. It is well known that in general the contraction of the uterus which accompanies the expulsion of the child completely breaks up the connection between the mother and the secundines, which would not be the case if this connection consisted of arteries and veins passing from the uterus to the placenta.

VII. If there were a communication by vessels between the mother and the placenta, the separation of the latter in performing the Cæsarean operation must always be attended with fatal hæmorrhage. (See below.)

VIII. It is well ascertained that the fœtus *in utero* has life independent of its mother's, and that it can live for some time after the death of its mother. In a case which happened about twelve years ago in the district where I reside, a woman, far advanced in pregnancy, died suddenly of *œdema glottidis*; and I was informed on the most unexceptionable testimony that the persons who were putting on her grave linen two or three hours after expiration, distinctly saw and felt the fœtus move. The same fact has been repeatedly observed in the brute animals.

IX. The following description of the placenta, given nearly 200 years ago, by the celebrated De Graaf, is so distinct, and of so high authority, that it cannot fail to carry conviction to any unprejudiced mind:—

"*Placenta a chorio nascitur.* * * probant observationes de foetibus extra uterum repertis, in quibus minimè hæc placenta desiderabatur, quod non contingeret nisi chorion vi efformandi placentam præditum statuamus: quæ etiam clariora fient, post quam modum, quo illa cum utero unitur, explicnerimus. * * Ad vasa quod attinet, venam unam et duas arterias ab umbilico obtinet, quæ totam ejus substantiam perreptant, quarum propagines utero non aliter, ac arborum radices terræ inseruntur: quemadmodum in glanduliferis ad oculum apparebit, si revulsis ab utero moleculis, liquorem siphonis beneficio versus eas per umbilicalia vasa propoleris; nam vasorum umbilicalium ramusculi ex uteri poris retracte eriguntur, ac belle admodum conspiciuntur: contra vero protuberans uteri portio exiguis foraminibus perforatur, quæ vasorum umbilicalium propaginibus ex adverso correspondent nec ullum uteri vasorum in moleculas sese insinuantium revelat indicium: quapropter non immerito ambigitur num placentulæ illæ ulla ab utero vasa recipiant; eoque magis cum in suis, equabus chorii vasa ad nutrimentum humorem qui inter illud et uterum deponitur, assumendum satis apta videantur: hinc etiam patet, haud opus esse ut umbilicalia et uteri vasa per anastomoses uniantur quarum disruptione puerperæ magnum vitæ discrimen incurrerent." De Mulierum Organis, c. 15.

X. Though the Hunters, founding their opinions in a great measure upon certain anatomical preparations in their museums, advanced a very different hypothesis, namely, that advocated in the above quotation by Dr. Burns, the views of De Graaf have in the main been amply confirmed by the recent investigations of Breschet, Velpeau, Weber, Wagner, Lee, Dalrymple, and others.

Taking all these considerations into account, I have no hesitation in stating it as my decided opinion, that it has now been satisfactorily shown that (to use the words of Mr. Dalrymple) "any direct communication between the uterine vessels and those of the placenta is impossible." (Med. Chir. Trans. xxv.) In short, I hold it to be now satisfactorily ascertained, that in natural delivery nothing is expelled but the foetus itself, with its own proper membranes, vessels, and fluids, and that this rule applies to the human subject as well as to every other animal with which we are acquainted.

It appears, then, that the prevalent doctrine is founded upon a mistaken hypothesis;—that not only do no vessels pass from the mother to the placenta, as has been assumed, but that the existence of patulous mouths of vessels, as taught in a recent modification of the hypothesis, is disproved by well-ascertained facts regarding the struc-

ture of the placenta.* I have to add, that, in my opinion, the symptoms of flooding have been sometimes inaccurately stated to suit the hypothesis; and this, by the way, but too frequently occurs in medical inquiries, namely, that the symptoms of a case are given distortedly, by being viewed, as it were, through the spectacles of hypothesis. Instead of there being any defect in the contraction of the uterus, I must say that my own experience leads me to state, that, on the contrary, the first announcement of the external flooding is generally made by the contraction of the uterus and forcible expulsion of the placenta. Lest I should be suspected in the present instance of doing what I have blamed in others, that is to say, of twisting and altering symptoms to suit my own views, I shall give here, from an eminent authority on the other side, a detail of the symptoms which usually accompany flooding after delivery. The following cases are taken from the late Dr. Hamilton's work, already referred to. "After the birth of the infant he waited for the natural separation of the placenta, but to his horror, in less than five minutes after the birth of the infant, strong bearing-down pains took place, the placenta was thrown off, followed by a deluge of blood, by violent convulsions of the muscles of the face, and by apparent expiration." p. 271. Ultimately, however, she recovered. Again, he writes of another case:—"On giving her stimulants the labour throes increased in power and frequency, and were accompanied with a discharge of a few drops of blood. Within less than an hour a still-born infant was thrown off, followed instantly by the expulsion of the placenta, and a profuse discharge of blood. She sank within half an hour." p. 280. Once more, at p. 281, he gives a case of hæmorrhage during labour, proceeding, he says, from detachment of the edge of the placenta, in which "instant delivery was had recourse to. The extraction of the infant, which was quite dead, was followed by the discharge of the placenta and a considerable quantity of coagulated blood. As the uterus contracted, and the strength and spirits of the sufferer somewhat rallied, hopes were entertained that the event would prove favourable. In a few minutes, however, there was a sudden gush of blood, and

* See Ramsbotham's Principles of Obstetrical Medicine, p. 458, *et seq.* His words are:—"It must also be noted that hæmorrhage from the uterus under labour is of a passive character, that the blood escapes, not as a consequence of any forcible rupture, produced by the excessive action of the heart and arterial system, as is generally the case in hæmoptysis, but merely by being allowed to exude through orifices rendered patulous by the separation of a substance which had formerly closed it. He adds:—"In the separation of the placenta from its uterine attachment there is no solution of the continuity of the vessel itself. There is no injury sustained."

although its progress was quickly checked, groaning supervened, and in a short time the event proved fatal."

These cases, then, put it beyond a doubt, that contraction of the uterus is no safeguard, as has been generally supposed, against floodings either during or after delivery. It further appears to me, that what has given rise to the supposition that the hæmorrhage is connected with torpor and imperfect contraction of the uterus, is, that that when floodings takes place, and the accoucheur introduces his hand into the uterus, he finds it in a relaxed state, because the woman has already got into a fainting condition. The flabbiness of the uterus, then, is not the cause but the effect of the flooding. Thus, also, I would account for the circumstance, that in cases of flooding, if the hand be applied to the abdomen, the uterus is not felt like a hard ball as in ordinary cases. I cannot help remarking in this place, that it appears to me very extraordinary that torpor of the uterus should be supposed likely to lead to an escape of blood, seeing it is a well-known fact that when any part of the body is in a state of collapse it is scarcely possible to abstract blood from its vessels until its heat and vascular activity be restored. And why, in cases of delivery in which there is no rupture of the vessels, relaxation of the parts should occasion hæmorrhage, I can see no good reason, since the same thing never happens after the operation of paracentesis. In a case of ovarian dropsy, I lately removed more than thirty imperial pints of fluid by tapping, and in consequence of the sudden change of circumstances, or some other cause, the woman became faint for a time, but I need scarcely add, there was no hæmorrhage into what is called the cavity of the peritoneum. Had this been a case of delivery, I have no doubt but the faintness would have been generally referred to internal hæmorrhage, occasioned by *inertia* of the womb, and *vigorous* means taken to check the bleeding. I repeat, then, that analogy is very much against the supposition that the blood would rush forth from the vessels of the uterus merely because it is in a state of torpor, and there is general collapse of the system.

Another of the fallacies by which the present erroneous doctrine of uterine torpor has been upheld is this, that as floodings occur most frequently in cases of sudden delivery they are connected with imperfect contraction of the uterus; that is to say, that the blood escapes because the placenta has been separated before the uterus had time to contract so as to stop the mouths of its vessels thus laid bare or ruptured. But if this view were correct, there can be no doubt but that in performing the Cæsarean operation the separation of the placenta would

have been always followed by an immoderate discharge of blood, whereas the very reverse is the fact, as any person may satisfy himself who will study the history of this operation. It would serve no purpose to quote particular cases here, and I shall merely state that the general result is, that in no instance has the separation of the placenta in the Cæsarean operation been followed by hæmorrhage. This I hold to be a perfect *experimentum crucis* to prove that sudden emptying of the womb does *not* occasion hæmorrhage.

I consider it of importance, also, to direct attention to what happens when the uterus is inverted with the placenta attached to it. In this case it will hardly be denied that there must be complete inertia of the womb, and that in its unreduced state it is so situated that any contraction of its cavity must be impossible. And yet the following case will show that even under these circumstances the separation of the placenta is not followed by hæmorrhage.

"Inversion of the uterus.—D. Humphreys Storer, M.D. reported to the Boston Society for Medical Improvement, April 11, 1842, the following case of inversion of the uterus.

"He was called to a woman in labour. In ten or fifteen minutes there came two smart pains, and the child was born. In five minutes the placenta was thrown off. The cord was not touched except to divide and remove the child. On putting his hand under the clothes to take away, as he supposed, the placenta, he found that he had hold of the uterus, with the placenta attached. He removed the placenta, put his fingers to the fundus of the uterus, and passed it up without the slightest difficulty. There was some flowing from the uterus when the placenta was detached, but not great, and none after it had passed up. The woman was very much prostrated, and for an hour appeared as if she was dying. She, however, revived, and next morning was comfortable. * * Drs. Dewees, Burns, and Gooch, in cases of inversion, advise, when it can be accomplished, the return of the uterus before the removal of the placenta, on account of the dangerous hæmorrhage which is otherwise liable to ensue. Dr. Bark recommends the previous removal of the placenta. * * In a case of inverted uterus, related by Dr. Meigs, of Philadelphia, in his Practice of Midwifery, he was unable to return it with the placenta, and, at the suggestion of Dr. James, the after-birth was removed from its attachment. Afterwards, with considerable difficulty, a reduction of the organ was effected. The little blood which was lost after the placenta was removed, in the case reported by Dr. Storer, showed, he thought, that the great

dread of uterine hæmorrhage which is felt by physicians from the removal of the placenta, when should no uterine contraction immediately occur, is not well founded. As soon as the placenta was detached, the hæmorrhage ceased; and although the uterus was so completely relaxed as to allow the hand to pass with perfect freedom without the slightest muscular contraction being perceived, there was no bleeding."—*American Journal of Medical Sciences*; quoted in the *London Medical Gazette*, No. 785.

The results, then, of separating the placenta in cases of inversion, prove demonstrably to my mind that the doctrine generally maintained on this subject, namely, that contraction of the uterus is indispensably required to prevent the escape of blood from the uterine vessels, is utterly unfounded. The following case, which occurred in my own practice, leads decidedly to the same conclusion. In the year 1828, I was called to see a poor woman who had been upwards of two days in severe labour, accompanied with constant pain in the lower part of the abdomen, and latterly with low delirium. From the Hippocratic expression of her countenance, "I knew there was but one way;" but as the pains of labour had expelled the head of the child just as I entered the room where she lay, I drew down the body of the child, which was dead, and, introducing my hand into the uterus, I found it flaccid, and perfectly powerless, so that I could move about my hand in it without feeling the least resistance. I immediately brought away the placenta, the separation of which was not followed by the slightest hæmorrhage. The woman, however, as I had foreseen, sank in the course of three hours—no doubt from the effects of peritoneal inflammation.

And here I may just be allowed to remark that, reflecting upon the circumstances of this case, I have been long disposed to agree with Galen* and the older authorities, in thinking that it is mainly, if not entirely, by the action of the abdominal muscles, that the expulsion of the child is accomplished. In short, I incline to the opinion that the uterus is not possessed of any contractile power except tonic, or what the French physiologists call *contractilité par défaut d'extension*. Many other facts confirm me in this opinion. I am further inclined to think that the notion which I have reason to believe generally prevails, that the uterus after contraction is possessed of a considerable power of resistance to any force applied to dilate it, is altogether erroneous, and that this is one of the false premises upon which the present doctrine of uterine hæmorrhage is founded. From my own

observation, I concur in every point with the following account of the matter given by one of the best of our obstetrical authorities. "It is not until the uterus is nearly reduced to its natural volume that it recovers its firmness, and becomes capable of resisting any considerable effort. In the first weeks, and especially in the first days, the uterus, though contracted, is yet so dilatable, that internal hæmorrhage might reproduce the dimensions which existed during pregnancy, or nearly so; and the mere inflation of the uterus after death leads to nearly the same result on the second or third day after parturition."—*Boivin on Diseases of the Uterus*, &c. In connection with this view of the subject, I may take the present opportunity of illustrating a class of cases which frequently occur in obstetrical practice. When the uterus, after delivery, is partially separated, that is to say, when part of it adheres to the womb and part is separated, the uterus is found greatly dilated with coagula, which form on it in consequence of the escape of blood from the ruptured extremities of the placental tufts. That these tufts are often ruptured in delivery, and that part of them is left on the surface of the uterus, is distinctly shown by Dr. J. Reid, (Ed. Med. Surg. Journ. Jan. 1841.) And that the blood escapes from the placental vessels in this case is proved from the vessels of the cord being flaccid and empty, and also from coagula of blood being found on the uterine surface of the placenta after its delivery. A stickler for the prevalent hypothesis of uterine inertia will hold that in this instance it is the cause of the retention of the placenta, and that the blood exudes from the patulous mouths of the uterine sinuses. But, as I have stated above, the empty state of the placental vessels proves that the blood must come from another source. I am satisfied, then, that preternatural adhesion of a part of the placenta is the *origo mali* in the present instance. But I must proceed to the consideration of the treatment as presently laid down by our best authorities.

The principle upon which the treatment has been conducted for some time past is entirely based on the hypothesis which we have been endeavouring to controvert—namely, that the flooding is occasioned by torpor of the uterus; and accordingly it has been generally held that the great indication is (to use the language of Dr. Burns) "to excite the uterus to a brisker action." The means usually had recourse to for this purpose has been the introduction of the hand into the uterus, aided by external pressure, and, in some instances, laying heavy weights upon the abdomen.

The following is the description which the late Dr. Hamilton has given of his mode of

* Op. cit. t. ii. p. 132, Ed 1858.

procedure in cases of flooding :—" He guards against it by introducing his right hand (immediately after all the uterine contents are expelled), and by applying his left hand to the surface of the abdomen, he compresses strongly the uterus between the two hands. In a short time he finds the os uteri begin to contract, and he does not withdraw his right hand until he has literally, by pressure, brought the parietes of the cervix and os uteri into contact." p. 259.

Now this, it must be admitted, is sufficiently vigorous practice, and the important question is—do the dangers of the case warrant such rough interference, and have its results been of a satisfactory nature?

To determine these points would be no easy task under any circumstances; but, situated as I am, without proper access to statistical authorities on this subject, it is absolutely impossible to settle them in a convincing manner upon the principles of the numerical analysis, or to draw up tables to show whether or not there be fewer fatal results under the present rough mode of treatment, or under the milder system which prevailed until a comparatively late date.* I must content myself, then, with drawing a probable conclusion from the practice of one very eminent authority of the old school, who flourished between seventy and eighty years. The truly honest and trustworthy Dr. Smellie, while compiling a collection of cases illustrative of every important point of obstetrical practice from his own ample stores, accumulated during a long and active life, with every opportunity that can be imagined for making observation, was able to relate only one fatal case of flooding after delivery from his own personal observation, and even in that instance the death of his patient would seem to have been owing to the mismanagement of the nurse in attendance during his absence. After relating it in the most candid manner, he concludes with the following remarks :—" Such fatal accidents seldom happen, except in extreme weakness of constitution, or from great floodings before and in time of delivery." Vol. iii. 330.

It thus appears that the most experienced accoucheur in London about eighty years ago, had only met with one fatal case during a most extensive practice of forty years. I fear Dr. Hamilton could have given a much

larger collection of unfortunate cases from his own personal observation. Judging also from my own experience, and from the result of such cases as have happened in the district where I reside, and the surrounding districts of the country, during the last thirty years, I would say that I never heard of a fatal case occurring in which, upon inquiry, I did not find that the vigorous plan of treatment had been pursued*. A professional friend, a good many years ago, related to me the following case :—He and a neighbouring practitioner had delivered a woman instrumentally after a protracted labour, and his colleague was in the act of removing the placenta, when he turned round and said, "There is a great discharge here!" The gentleman who related the case to me said, "I immediately introduced my hand into the uterus and made pressure on all sides, while my assistant applied cold, and made counter-pressure externally. At one time I flattered myself that I felt a contraction of the uterus, but the woman sunk in the course of a few minutes." He added, "I went home in low spirits, and consulted *Burns's Midwifery*, to see if we had done right"—and no doubt he would have the satisfaction to find from it that the case had been treated *secundum artem*. The particulars of the following case I also had from the persons who were in attendance on the occasion. A woman was delivered of a living child by a midwife; but as the placenta did not come readily away, a surgeon, who lived about eight miles distant, was sent for. He arrived in about two hours and a half after the birth of the child, during which time there had been some slight hæmorrhage occasionally. The surgeon

* I have asked several aged *sages femmes*, some of whom had been in extensive practice in rural districts during forty or fifty years, whether they ever met with a fatal case of flooding after delivery, but (with the exceptions about to be mentioned in the text) they all assured me they never had. They all uniformly told me that what they did in such cases was to apply cold vinegar and water to the parts, and give some drops of laudanum. The older class of midwives had evidently been taught to follow the practice of Smellie, who, in the latter part of the last century, and the beginning of this, was the great obstetrical authority in this country. Smellie's practice is, in almost every point, copied from Mauriceau, for whose opinions he evidently entertained the highest respect. (See Mauriceau, III. 5.) As tight compression of the abdomen has been very much in vogue of late years, in cases of uterine hæmorrhage, it may be worth while to quote what this sensible authority says of such a practice :—"The upper part of her belly must likewise not be swathed or bolstered, for such straitness augments the evil." (l. c.) It is deserving of notice that, instead of compressing the abdomen, the ancient authors recommended us to apply very tight ligatures to the extremities with the intention of determining the blood to them. (See Soranus, l. c.) Altogether, I cannot but think that if the bandage applied to compress the abdomen produce pain, it cannot fail to do more mischief than good.

* The following list is taken from Dr. Churchill's Tables of the Results of Flooding Cases.

	Flooding cases,	Mothers lost,	Children lost,
Collins . . .	131	12	17
Ramsbotham . .	69	30	13
Churchill . . .	25	—	—

The difference between the result in Ramsbotham's cases and in Churchill's is certainly very singular, and shows the danger of trusting too much to numbers alone when unaccompanied by a minute detail of collateral circumstances.

introduced his hand into the vagina and extracted the placenta, when the woman flooded excessively, fell into a state of collapse, and almost immediately expired. The following history I had from the midwife who was concerned in it, and a near relative of the poor patient. The woman had been delivered of her child more than an hour before the arrival of the midwife; but as the placenta had not come away, the midwife introduced her hand to extract it, when the woman fell into a state of collapse, with profuse hæmorrhage, and almost instantly expired. And although, I am happy to say, the results of my own practice do not enable me to speak of fatal cases in consequence of introducing the hand into the uterus after delivery, I could relate several in which the procedure was followed by very alarming symptoms. About twenty years ago, I attended a woman in her first delivery, and after the birth of the child, as the placenta did not follow, and there was slight hæmorrhage, I introduced my hand into the uterus, which was getting contracted to the state falsely called the hour-glass contraction, when the woman fell into a sort of convulsive fit, so that I removed my hand, and the placenta with it, as quickly as possible. She lay for some time in a critical state, but gradually recovered. I once delivered a delicate-looking female of twins; and as there was some hæmorrhage afterwards, I introduced my hand into the uterus, when the woman uttered a convulsive scream, and fell into a state of collapse. I immediately removed the placenta, and although I distinctly remember having felt a powerful contraction of the uterus, as I removed my hand and the placenta, there was the most immoderate discharge of blood I ever witnessed on such an occasion. Her condition, for a considerable time, seemed perfectly hopeless, but eventually she recovered. This case, which occurred eight years ago, was the last instance in which I introduced my hand in cases of flooding, and it tended to confirm me in the opinion which had been gradually arising in my mind for some years previous, that the introduction of the hand into the uterus, when the woman is in a highly excitable and reduced state from flooding, is a much more formidable and dangerous operation than I at one time had been taught to believe. This, however, is in accordance with a general law in the animal œconomy very well ascertained, namely, that when blood has been lost to a considerable amount, the great nervous centres receiving an inadequate, and the rest an irregular supply, their excitability becomes largely and irregularly developed*. Dr. Ramsbotham very candidly relates a

case which illustrates in a very striking manner the danger of introducing the hand into the uterus after a great loss of blood. He attended a woman in convulsive fits, and bled her to an enormous amount; the convulsions ceased, and delivery took place naturally. He adds, she then looked quite well, and he had no doubt but that if the placenta would have come away, all would have been well: unfortunately, however, it was not cast off, and he having introduced his hand to remove it, the woman fell into a convulsive fit and expired.

I regret that I have not leisure and opportunity at present to investigate when, and with whom, the practice of introducing the hand into the uterus, with the intention of stimulating it to contraction, originated. Certain it is that it is condemned by Denman, whose excellent work on Midwifery was published in 1801. He sensibly remarks, "Of any advantage said to be derived from this practice I am very doubtful, or whether it may not be suspected to renew or increase rather than to suppress the hæmorrhage. I have never attempted it." p. 512. Even when the hæmorrhage is connected with retention of the placenta, and the existence of coagula in the womb, he is chary of the introduction of the hand. p. 499, 500. If not the originator, certainly one of the most strenuous advocates of this practice, was the late Dr. Hamilton. I need scarcely say that the general character of his writings and lectures is to convey the impression, that in the delivery of a woman Nature is not to be much trusted to, and that a great deal is to be expected from art. Certain it is, that not many years ago the introduction of the hand into the uterus was reckoned a very slight thing indeed, and almost an every-day occurrence in a Scotch accoucher's practice. And yet I have reason to know, from the information of women who have been subjected to such treatment, that it is attended with the most excruciating pain imaginable. Several women have told me that all the other pains connected with parturition are slight when compared with this. One of them lately expressed herself to me in forcible language: "The feeling of a hand in her inside," she said, "was a most unnatural one, and nearly took away her heart."

It will now be asked,—seeing that I thus deny that flooding after delivery is connected with torpor of the uterus, and so pointedly condemn the practice founded on this hypothesis,—what views do I hold respecting the nature and treatment of this species of hæmorrhage? I have no hesitation, then, in stating it as my own belief, that the ordinary cause of flooding is the rupture of vessels from lesions occasioned during the delivery of the child; sometimes, no doubt,

* See Dupuytren's *General Therapeutics*: Philadelphia, 1843.

about the os tincæ, but more commonly about the os externum. The first question to be settled is, what facts have we to prove the existence of lacerations in such cases? Now we have the authority of M. Gendrin, (l. c. p. 92), that in the common cases of parturition, there are generally slight lacerations about the cervix uteri, and that from them in part the lochial discharge proceeds. Since, then, it is clearly established that the common discharge of blood after delivery is produced by slight lacerations, it is surely a very legitimate inference that larger lacerations, arising from instrumental interference, or other causes, must give rise to more profuse hæmorrhages. But it is also well known that lacerations about the os externum are very common occurrences after delivery. Lest I should again be suspected of straining facts to support my own views, I may mention, that the Messrs Campbell, in their late publication on Midwifery, broadly affirm, that "laceration of the perineum is one of the most common accidents connected with the puerperal state," and Dr. Clay, of Manchester, fully confirms this statement, and further, does not hesitate to give it as his opinion, "that this accident is more frequent now than formerly, when the efforts of nature were left more to themselves," (Medical Times, June 18th, 1844). These lacerations, it is true, are generally so slight that they pass unnoticed, but when, as is sometimes the case, the vessels about the os externum are in a state of preternatural development, is it to be wondered at, that sometimes a small branch is torn across, and pours forth its contents with great force for a time? But about five years ago, I met with a case in point, which put the question beyond dispute. I delivered a stout healthy woman of her first child, after a natural labour of about twelve hours. The birth of the child was followed by some slight discharges of arterial blood from the os externum, but not such as to excite any apprehension on my part, until about five minutes afterwards, when the placenta was cast off along with an enormous quantity of blood. While I was applying cold cloths to the parts, I happened to separate the *labia pudendi* slightly, when I saw an artery spitting blood to a distance. By means of the cold applications, I succeeded in stopping the hæmorrhage; but I have seldom seen a stout woman so shaken by a flooding after delivery. And yet, it is most deserving of remark, so slight was the laceration, that the woman was never sensible of its occurrence, and in the course of a week the wound was completely healed without any treatment.

I do not hesitate, then, to give it as my decided opinion, that the rupture of vessels is the common cause of hæmorrhages which

occur after delivery. We can now account satisfactorily for their occurring most frequently after rapid deliveries, whether instrumental, or connected with violent action, as in such cases there can be no doubt that the lacerations must be larger than usual.

Dr. Edward Rigby thus describes "*the effects of precipitate labour*. Besides the mischief which may result from the rapid expulsion of the child causing prolapsus uteri, *laceration of the vagina, perineum, and hæmorrhage*, from inertia coming on in consequence of the uterus being so suddenly emptied, dangerous syncope and even asphyxia may follow." (Midwifery, v. 8). It shows the force of preconceived hypothesis, when so able and intelligent an authority refers the hæmorrhage in this case to an imaginary cause, like "inertia of the uterus," instead of the concomitant symptoms mentioned by himself, namely, laceration of the soft parts. We have shown above that even in performing the Cæsarean operation, where the process of emptying the womb is as rapid as can well be imagined, there is seldom or never any hæmorrhage from the uterus. But however I may venture to question Dr. Rigby's *hypothesis*, as I attach the greatest possible weight to his statement of *facts*, I here gladly avail myself of his authority to prove the connection between floodings and laceration of the soft parts. Treating of placental presentation he says: "Cases have occurred where the os uteri has been artificially dilated, where the child was turned and delivered with perfect safety, and *the uterus contracted into a hard ball*; in fact, every thing seemed to have passed over favourably; a continued dribbling of blood has remained after labour; which resisted every attempt to check it; friction upon the abdomen, and other means for stopping hæmorrhage by inducing firm contraction of the uterus, were of no use, *for the uterus was already hard and well contracted*; the patient has gradually become exhausted, and at last died: on examination after death, *Professor Naegele has invariably found the os uteri more or less torn*." l. c.

Having settled that rupture of vessels is the most common cause of floodings, it remains to be determined whether or not it be the sole cause. Certainly analogy would lead us to suppose that as exhalation, that is to say, a preternatural activity of the exhalant vessels, is the cause of hæmorrhage in menorrhagia, miscarriages, and other cases, that it must also appear likely to prove an occasional cause of hæmorrhage after delivery; and, in fact, several cases are on record where it was supposed to have been the cause of the hæmorrhage; but in all such instances it is impossible to prove that there

may not also have been some rupture of the vessels. Fortunately it is not a question of much practical importance, as on either supposition flooding must be referred to the class of active hæmorrhages, and not of passive, as it has heretofore generally been, and the indications of treatment will be much the same.*

Having now stated my views with regard to the nature of the hæmorrhage, there can be little difficulty in applying the proper rules of practice. Among the remedial means, exposure to cool air, cold applications to the parts, with the removal of all excitement of body and mind, and laying the head lower than the pelvis, are those upon

* The late Dr. Gooch, at a time when *inertia* of the uterus was almost universally held to be the sole cause of floodings, had the merit of drawing the attention of the profession to "some circumstances in which a uterine hæmorrhage may occur, sufficient to produce alarming symptoms, though the uterus feels contracted in the ordinary degree." (Med. Chirurg. Trans. xii. p. 1.) The cases which he relates were evidently connected with strong action of the exhalants of the uterus, but whether there was also laceration of the soft parts cannot now be ascertained. The following extract is from his description of one of his cases: "I cut the cord, placed my hand on the abdomen, and felt the uterus contracting in the usual degree, yet a few minutes afterwards the blood burst forth with prodigious impetuosity, &c." It is particularly deserving of remark, that similar symptoms having occurred in two other deliveries of the same woman, he prevented their recurrence in the fourth pregnancy by bleeding her beforehand. Venesection, by the way, is no new remedy in uterine hæmorrhage; it was recommended anciently in such cases by Themison, but rather condemned by Soranus, (c. 106). Mauriceau speaks favourably of it, and Smellie barely mentions it. Considering the soundness of Dr. Gooch's views as to the nature of the hæmorrhage, one part of his practice seems most extraordinary: he says—"My belief now is, that when hæmorrhage occurs after the removal of the placenta, the shortest way to stop it is to introduce the *left hand closed* within the uterus, apply the *right hand* open to the outside of the abdomen, and then between the two to compress the part where the placenta was attached, and from which chiefly the blood is flowing, &c." This horrid practice of pushing the clenched hand and arm up to the elbow in a poor woman's vitals, and keeping the hand there for hours, while strong pressure is made externally, either by the other hand or by means of heavy weights, has been repeated frequently during the last twenty years, and I could refer to several cases, both published and unpublished, in which the consequences were dreadful in the extreme; but I forbear doing so, as I am sure the members of my profession who followed this irrational plan of treatment, must now be heartily sorry that they subjected a fellow-creature to such torture. And what can be imagined more absurd than to suppose it possible to detect the bleeding point in such a case by groping about with the hand through "the dark chamber?" The other object in this practice is scarcely more rational, namely, to endeavour to stop the bleeding by re-producing contraction of the uterus with artificial means, after natural contraction had proved utterly ineffectual in preventing the hæmorrhage. And surely there is no escaping from the dilemma, that the means used to stimulate the uterine fibres to contraction, whether it produce this effect or not, cannot fail to stimulate the uterine vessels to pour forth their contents.

which I place the most reliance; and I do verily believe that when these are properly applied, they will very seldom be found ineffectual. Opium in moderate doses is an approved remedy in uterine hæmorrhages from the days of Avicenna downwards, and its mode of action in this case is satisfactorily accounted for, on the views we have advocated, but is utterly inexplicable on the supposition that the blood rushes forth owing to torpor of the uterus. Should the patient get very low and faint, of course brandy and water, with other analeptics, should be had recourse to, as in all other cases of sudden evacuation, and should the hæmorrhage continue to be very profuse, it certainly would be proper to open the parts in order to see if the bleeding point could be detected and secured by the ligature or torsion, but of this practice I have no experience, and cannot suppose that it will be often necessary. I cannot see that much reliance can be put upon external pressure, as there is no firm point upon which it can be based, and if the actual situation of the bleeding vessel be not detected the pressure would be applied very much at random*. The introduction of the hand, with the intention of stimulating the parts, it will readily be understood that I wholly disapprove of. It is a true and most important observation made by an ancient authority, that nothing excites a flow of blood more than pain:† and upon the acknowledged law of the animal economy—"ubi dolor ibi fluxus"—the irritation occasioned by the hand punching the uterus, or squeezing it against the other hand laid forcibly on the abdomen, cannot fail to increase the determination of blood to the spot, while the impression thereby produced on the nervous system, rendered highly excitable by exhaustion, and the awful shock conveyed to the mind of the poor sufferer by the sudden conviction that her life must be in imminent jeopardy, when such means are thought necessary, may bring on convulsions and sudden collapse. The only circumstance which in my opinion could justify the introduction of the hand, is a coagulum which can be felt in the vagina or os uteri, and in such case I have been in the practice, even of late years, of introducing the hand so far into the vagina as to accomplish the removal of the clot. Without doubt hæmorrhage is often kept up by such clots, and the removal of them is then indicated upon general principles, and the efficacy of the

* Soranus remarks that the hæmorrhage is difficult to stop, as it can neither be restrained by compression with the fingers, by torsion, by graduated compresses, by ligatures, or by sutures—in short, he means to say that the means used for stopping bleeding from a wounded artery are of difficult application in this case, *i. e.* He speaks however of using the speculum. *Ibid.*

† Paulus Ægineta, vi. 53.

practice is proved by ample experience. But when the hand is introduced for such a purpose it ought to be done as gently as possible, our object being not to excite irritation, but to remove the source of it.*

But the limits to which I feel I am restricted on the present occasion compel me to draw to a hasty conclusion. I am not insensible that I may have exposed myself to unpleasant animadversions, by advancing doctrines some of which are at variance with those which now regulate the profession on a most vital point of practice, and by venturing to question the opinions of contemporaries of much higher standing than myself. If the soundness of my views were to be tested by the published sentiments of living authorities, there can be no doubt that mine would be found wanting; but as the careful study of the revolutions of medical opinion for the last two thousand years has led me to remark that every preceding age has been subject to the epidemical prevalence of some false hypothesis, and mistaken mode of treatment, founded upon it I trust my contemporaries will not take it amiss if I have ventured to insinuate that they have not altogether escaped the contagion of error. In an art not founded upon strict and immutable principles, it does not by any means follow that progression is always an advance in the right direction. It has often happened that new doctrines, which had been raised into favour under the influence of a distinguished name, have come in the course of time to be rejected as unsound, and that discarded opinions have again risen into confidence in their place. I shall notice an example which is not inapplicable to the subject now in hand. Towards the end of the seventeenth century, the celebrated Deventer promulgated the doctrine, that obliquity of the pelvis is the cause of tedious labours, and that the remedy for this is to drag the uterus from the oblique into the central position in the time of labour. This singular doctrine being supported by so distinguished an authority, was at one period taught and received in all the medical schools of Europe,—and, what is most remarkable, as Denman remarks,

* Mauriceau is a decided advocate for the practice of “fetching away or causing the speedy expulsion of any clotted blood remaining behind.” I have had no experience of ergot of rye in such cases, but I can well conceive that it may be of use, either by acting as a styptic or by promoting the discharge of the coagula. Some authorities of the present century have forbidden any interference with the coagula, on the supposition that they prove a check to the bleeding. Mr. Liston, treating of the suppression of bleeding in recent wounds, makes the following very striking remark: “The smallest portion of coagulated blood will encourage the effusion as much as would a bit of sponge steeped in hot water.” From ample experience I can state, that irritation occasioned by a coagulum is a very common cause of flooding after delivery.

after the hypothesis had been completely exploded, the practice founded upon it, although highly prejudicial, continued to be pursued for a considerable time afterwards. I need scarcely say how very applicable this example is to our present case. Some eminent authorities in midwifery towards the beginning of this century, founding their opinion on the mistaken hypothesis that vessels of a considerable size passing from the uterus into the placenta are ruptured at the time of delivery, first promulgated the doctrine that non-contraction of the uterus is the sole cause of floodings, and that the sovereign remedy for the same is the introduction of the hand into the uterus, in order to stimulate it to greater activity. The hypothesis of ruptured placental vessels is now pretty generally exploded, but the practice founded upon it, as in the instance we have just quoted, seems destined to survive it for some years. That professional opinions will change, sooner or later, on this subject, I feel fully confident.

At present, I suppose, there can be no doubt that the rough plan of treatment is the prevalent one, but, if I am not much mistaken, there has existed in the profession for some time past an under current of opinion, which by and by will acquire the ascendant. Many experienced practitioners of the art, who have devoted a large portion of their best days to the attendance on woman “in the hour of nature’s sorrow,” I have reason to believe now feel disposed, “*vergentibus annis in senium*,” to question the soundness of the instructions which they received from their masters thirty or forty years ago, for regulating their conduct in one of the most trying emergencies in which they have been called upon to act.

I shall now briefly recapitulate the principal inferences which I wish to draw from the facts and arguments brought forward in the course of the present disquisition.

1. That the doctrine generally taught, namely, that in floodings after delivery the blood escapes by exudation from the placental vessels of the uterus, is founded on a mistaken hypothesis regarding the construction of the placenta; while the symptoms of the case which were supposed to uphold the doctrine of uterine torpor, that is to say, the flaccidity of the womb when felt externally, and its distension and relaxation as discovered by the introduction of the hand, are to be regarded as the effects, and not the causes of the flow of blood.

2. That all the phenomena of the case are satisfactorily accounted for upon the supposition that the hæmorrhage proceeds from lesions which are proved to be of no uncommon occurrence, about the uterus and perineum after delivery, but that analogy would lead to the conclusion that they

sometimes proceed simply from violent action of the uterine exhalants.

3. That there is no reason from analogy to suppose that blood would flow from an organ or member, merely because it is in a relaxed state, provided it had sustained no solution of continuity.

4. That it has been demonstrably proved that contraction of the uterus is no safeguard against flooding, and that flooding is not necessarily the consequence of non-contraction after delivery.

5. That the facts and circumstances connected with the Cesarean operation, and the removal of the placenta in inertia of the womb, militate strongly against the established opinion, that flooding is apt to arise from the non-contraction, or sudden emptying, of the womb.

6. That, beyond all dispute, instrumental and precipitate deliveries are those in which floodings are of most frequent occurrence; and it is well ascertained that lacerations are common in both these cases.

7. That the introduction of the hand into the uterus, with the intention of stimulating the organ, or of compressing the bleeding point, is a practice highly dangerous, tending to produce increased determination of blood to the part, syncope, and convulsions; and that the only circumstance which could justify the most gentle modification of this practice is the existence of a coagulum in the vagina or womb.

8. That, agreeably to my own experience, laying the head low, exposing her to a current of cool air, applying cold cloths to the parts, with small doses of opium and gentle compression of the abdomen, are means which will rarely fail to arrest the flow of blood; but that in extreme cases it may be warrantable to try to ascertain the situation of the bleeding point, and secure it by surgical means.

9. That, as far as can be ascertained, fatal results under this mild system of treatment in former ages were of much more unfrequent occurrence than they have been under the harsh mode of treatment pursued for some time past.

Finally, that the flooding which follows delivery has none of the characters of a passive hemorrhage, as has been generally taught of late, but is to be referred to the class of active hemorrhages, and treated upon the principles applicable to them.

SALIVATION IN TETANUS.

It is difficult to salivate tetanic patients, and we are told that if we succeed in doing so they will recover; but I have seen patients die of tetanus while under profuse salivation. It has been found more serviceable in the idiopathic than the traumatic species.—*Professor Colles's Lectures.*

ON PUNCTURING TUBERCULOUS CAVITIES,

WITH OBSERVATIONS ON SOME REMARKS OF DR. CAMPBELL;

By JOHN HASTINGS, M.D.

Mr. STORKS and myself reported in the MEDICAL GAZETTE for Dec. 20th, 1844, a case of perforation of a tuberculous cavity in the lungs.* Considering the fatal nature of phthisis, when it has proceeded to the formation of large cavities, and accompanied by great constitutional disturbance, which in this case presented itself in a marked degree, it is surprising so little interest was created by its narration; for from the manifest improvement which had then taken place, some hopes were entertained of the ultimate recovery of the patient, aided by other remedial means, which had been found to possess a controlling power over the disease. It is difficult to understand why this apathy pervades the minds of the profession on the treatment of consumption, which certainly must be regarded as the great wholesale destroyer of mankind; whilst the treatment of other diseases, of far less moment, serves to amuse the readers, and fill the pages, of medical journals for weeks together.

No one who has advanced opinions, or propounded statements which embrace novelties in medical science, ought to shrink from their full and free discussion; indeed, he who is desirous of eliciting truth should be the first to encourage this means of investigation. But hardly an inquiry has been made on the subject. Dr. Campbell, in a candid and gentlemanly article, which appeared in the *Lancet*, June 14th, 1845, objects to this method of treating phthisis, chiefly on the grounds that "it deals with an effect and not a cause." No one who has reflected on this painfully interesting disease can believe for a moment that its first imperceptible beginning is to be found in the lungs, although it is difficult, nay, impossible, in the present state of our knowledge, to demonstrate where it commences, or of what its

* Although very weak, the patient has latterly been able to get out when the weather has been fine. His expectoration for the last two or three months has not averaged more than two drachms in the twenty-four hours.

actual nature consists. If, however, phthisis is only to be recognised by the presence of tubercles, then I believe it is not incorrect to state, that it has its origin in the lungs, for hitherto the spherical globules found in tubercles have not been detected in the blood, or any of the secretions or excretions of the body, except in the sputa; consequently, we may assume that if the disease exists in the blood, of which there is great probability, it does so in another form. Notwithstanding this admission, I believe phthisis is sometimes present in the lungs as an independent disease, or how are we to account for the health of those individuals, whose functions, mental and physical, are performed with that force and order consistent only with perfect health, although tubercles had existed many years before in the lungs, without being suspected, and at death,—occasioned by some other disease,—revealed by a post-mortem examination. Authors on this subject are generally of opinion, and I agree with them, that tubercles are commonly deposited in crops in the lungs. These crops, I believe, sometimes so completely purify the blood for a shorter or longer period, by a removal of its poisonous qualities, that the constitutional disorder, if the deposit is small, merges into a local affection, and eventually the lungs become so accustomed to the foreign bodies that respiration is in no perceptible manner impeded. Conditions not unlike this are continually witnessed in severe constitutional derangement, which terminate in gout, skin affections, and purulent deposits. But, even regarding the disease, according to Dr. Campbell's own showing, as one at all times of a constitutional nature, I have never recommended this operation as alone sufficient for its treatment, but have called to my aid those remedial agents which experience has taught me to rely on as most useful in the treatment of this affection.

The difficulty of diagnosing cavities, and also of ascertaining that their sides are adherent to the costal pleura, is regarded by Dr. Campbell as a serious obstacle to the successful performance of the operation. I can hardly believe, that any one accustomed to the use of the stethoscope, could find it difficult to point out the presence of such a cavity as would justify the performance of the

operation; and although no precise rules can be laid down for showing that its sides adhere to the parietes of the thorax, dissections innumerable have proved that, where *large cavities exist at the periphery of the lung*, the walls are there found in firm and close connexion with the costal pleura. The exceptions to this condition are very rare indeed. Even were it found, after the puncture had been made, that a want of adhesion existed between the pleuras, the case would resolve itself into one of pneumo-thorax, not necessarily fatal; nay, it remains to be proved, whether that might not be beneficial in effectually shutting up the cavity by compression, or be less injurious to the constitution, than the evils arising from the successive enlargement of a cavity; remembering always that the lung on the opposite side must be healthy or nearly so, the only condition which admits the performance of the operation.

In doubting the expediency of the operation, Dr. Campbell observes, "persons who die of phthisis do not die because they have one or more empty cavities in their lungs." With one or two exceptions of acute phthisis, I never witnessed a death from this disease without excavations in the lungs; but as to their emptiness, that is a condition by no means constant. The cavern which is empty to-day, may, through change of temperature or some other cause, contain a considerable amount of secretion to-morrow. If, then, the progressive enlargement of cavities, through the gradual destruction of the lungs, enfeeble and destroy life, any method of treatment which tends to stop the growth of these excavations, or close them altogether, ought to be one of considerable interest to the physician who is desirous of lessening the catalogue of fatal diseases.

Dr. Campbell endeavours to controvert my theory, "that the value of the operation consists in allowing the free escape of air from the cavity, so that the irritating effects arising from the distension and contraction of its sides are avoided," by stating: "all know that the atmosphere presses with an average weight of fifteen pounds on each square inch of surface, and that it is by the influence of such pressure that air permeates the lungs, when by an inspiratory muscular effort their

containing cavity is augmented in capacity. Now the very same amount of pressure which acts through the wind-pipe distends the lungs, or the abnormal excavation with air, equally acts through an opening artificially made." The fallacy of this reasoning, I think, will be rendered apparent, when the relative circumstances of the lungs and a punctured cavity are considered. The lungs form a sac with one opening—the perforated cavity having two. The lungs, besides being filled by the pressure of fifteen pounds on each square inch of surface, have additionally a suction power increased or diminished at will, the result of inspiration. Whilst the punctured cavity is only exposed to the passive pressure of these fifteen pounds on each square inch of surface, the suction power, if its two openings be of equal magnitude, is obviously unavailable.

Albemarle Street, July 23d, 1845.

QUACKERY ON THE DANUBE.

MR. PATON mentions that the major of the town of Panesova, on the Danube, after swallowing countless boxes of Morison's pills, died in the belief that he had not begun to take them soon enough! The consumption of these drugs at that time almost surpassed belief. There was scarcely a sickly or hypochondriac person, from the Hill of Presburg to the Iron Gates, who had not taken large quantities of them. Being curious to know the cause of this extensive consumption, he asked for an explanation, and was told that whatever came from England, whether Congreve rockets or vegetable pills, was considered to be perfect. "Dr. Morison," observed his informant, "is indebted to his high office for the enormous consumption of his drugs. It is clear that the President of the British College must be a man in the enjoyment of the esteem of the Government and the Faculty of Medicine, and his title is a passport to his pills in foreign countries!"—*Travels in Servia*.

[REMARKS.—We believe that the title of "College" has also some influence on the diffusion of these vegetable medicines among the lower classes of this country,—the lion, which is the symbol of the College, being emblematic of the destruction which they occasion! If unlicensed practitioners are to be punished under the 33d clause of the new Bill, for assuming the title of "doctor," we do not see why these self-styled "Colleges" should not also be put down, as they obviously imply, by assuming this title, that they are what they are not, and thus give a spurious kind of authority to their proceedings.—Ed. Gaz.]

OBSERVATIONS ON GENERAL AND ANEURISMAL DILATATIONS OF THE AORTA,

ESPECIALLY WITH REFERENCE TO THEIR
PATHOLOGY AND TREATMENT.

By NORMAN CHEVERS, M.D.

[Continued from p. 732.]

PART II.

Loss of Tone in the Arterial Tissues.

A Loss of the vital elasticity proper to the middle coats of the arteries was formerly regarded as one of the causes of aneurism. A considerable degree of widening of the large arterial trunks is certainly an attendant upon many cases of chlorosis, anæmia, and some other states of chronic depression of the functions of innervation and nutrition; but, although attended by severe palpitations and other distressing symptoms (as in the instance of the violent hypogastric pulsation from which weakly and nervous dyspeptics occasionally suffer)* such yielding of the vessels does not seem to be, in itself, at all liable to lay the foundation of aneurismal disease; and probably for this reason,—that the muscular power of the heart is here generally diminished in an equal ratio to the weakening of the arterial tissues. It appears very certain that, in cases of this kind, arteries, which careful examination has decided to have been considerably dilated, may recover their due calibre as the tone of the system becomes restored under appropriate treatment. The abnormal sounds so frequently noticed in the region of the left cavities of the heart in cases of chlorosis and chorea, are, in all probability, chiefly dependent upon alteration in the capacity of the aortic and mitral orifices, in consequence of a loss of tone in all the structures of

* There appear to be two forms of "nervous" or "functional" epigastric pulsation: one, in which there is not more derangement of the general health than is commensurate with the degree of hysteria or dyspepsia from which the invalid principally suffers; and where the attacks of palpitation are occasional and transient:—and a second, in which the pulsation is nearly constant, and the patient's health has become so completely broken, that it is, at first, difficult to perceive that he is not the subject of a severe organic disease. In the first class of cases, the vascular system is, in all probability, but little affected; the pulsations mainly depending upon various kinds of temporary derangement in the stomach, colon, or liver: in the second, there is good reason to believe that the tissues of the large vessels are suffering from loss of tone.

the heart. These sounds, it is scarcely necessary to say, usually disappear entirely as the power of the nervous and muscular systems becomes renewed by tonic medicines. It must be observed, however, that although a vessel which has lost its tone, and has thence undergone a certain amount of dilatation, may, in all probability, under altered circumstances, recover its proper dimensions, and although a perfectly healthy artery will, to a remarkable degree, adapt itself to a diminished condition of the circulating fluids, this adaptation will not occur where an artery has previously become at all altered in structure, or dilated to that extent which deprives its tissues entirely or almost wholly of elasticity: in a case of this kind the cavities of the heart may become contracted to a surprising degree, in consequence of diminution of the volume of the blood, but the aorta will remain preternaturally dilated. Still, this fact must not be considered as opposed to the system of lessening the quantity of the circulating fluids in cases of aneurism.

Forms of Aneurismal Sacs.

Some of the distinctions which have been drawn by authors between the several kinds of aneurism, are extremely arbitrary, in being made to depend chiefly upon the varieties in the shapes of the sacs, their manner of formation, and their true pathological differences being comparatively little regarded. The distinctions existing between some of the forms of aneurism, such as the true, spurious, or diffused, and dissecting, are apparent and requisite enough. But it seems that rather unnecessary divisions have been made between the true and some forms of false aneurism—distinctions which are scarcely warranted by any material pathological difference; it is certainly true that there is no resemblance whatever between a circumscribed dilatation of all the coats of a vessel and a false aneurism produced by perforation of the three inner tunics, but careful observation will always confirm the remark of Dr. Hope, that the greater number of partial dilatations of the aorta commence as true aneurisms,* and it may

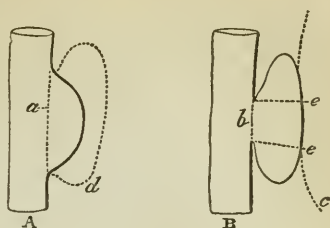
be further traced out that these frequently pass into the false species of the disease. The middle coat of the vessel is usually greatly thinned and indistinct in structure at the part where it assists in forming the sac of a true aneurism, but wherever an aorta has become generally and permanently dilated without being positively aneurismal, its middle coat is found to be undergoing absorption. Frequently, as the sac of a true aneurism enlarges, either the fibres of the middle tunic are completely absorbed, and the posterior surface of the thickened sub-serous tissue becomes apposed to the outer coat, or, what is perhaps more usual, the portions of the internal and middle coats, at the most prominent part of the sac, become thick, soft, and friable, and crack in many places. A surface of coagulum adheres to this roughened spot, and becomes the basis of a concentric clot; the outer coat, much thickened, now forms the enlarging portion of the aneurismal sac. The disease is now false aneurism. This yielding of the proper tissues of the vessel sometimes occurs early in the formation of the aneurismal pouch, in other instances not until after that cavity has attained a very large size. This may be inferred from the fact that, in some large sacs, the proper tissues only form a sort of narrow rim to the pouch, extending some inch or two from its orifice, the remainder of its walls being made up of the outer coat and other condensed tissues lined with a firm membrane of new formation. In other and more numerous specimens, nearly the whole interior of the sac is defended by the tough and thickened layers of the sub-serous fibrous tissue, over which the lining membrane still retains an almost unbroken continuity of surface, all the structures bearing traces of having long resisted the impulse of the blood. The fibrous sub-serous tissue of the arteries has an extraordinary property of stretching, and becoming increased in thickness and resisting power, when the vessels have been long exposed to causes of dilatation. I believe that no previous writer upon the subject has ever recognised the very important part taken by this structure in strengthening dilated aortæ, and often in assisting to form the interiors of aneurismal sacs. The middle tunic of the aorta is capable of bearing strong impulses, but

* "Almost all aneurisms of the ascending portion and arch of the aorta are originally of the true species." *Diseases of the Heart*, p. 421. The observations of Dr. Peacock have also confirmed this fact.

becomes thinned under long-continued pressure, especially when its fibres are rendered so tense as to be incapacitated from exerting their elastic power, which is always more or less the case where the vessel dilates under the protracted distension consequent upon fixed obstruction. The layers of the sub-serous tissue, on the contrary, become thicker and tougher, under pressure and traction, in proportion as the other tunic wastes. It is not unusual to find thickened and dilated aortæ owing the greater bulk of their walls almost entirely to increased thickness of the sub-serous layers, the contractile coat being, at the same time, excessively thinned, so that, in these instances, the sub-serous tissue appears to supply, in a very great measure, the situation and functions of the contractile coat.

It may readily be demonstrated that the lining membrane and sub-serous tissues of many aneurismal aortæ enter into the composition of the walls of their sacs; this is ascertained by observing the appearance of the interior surface, and by tracing out the fibrous structure of the latter tissue as it extends far along the walls of the cavity; it is also proved by the frequent presence of large bony plaques (which, demonstrably, never form in any of the arterial tissues except the sub-serous) within the recesses of old aneurismal sacs. That these deposits are of a date subsequent to the formation of the aneurismal pouch is also made apparent by the remarkably great extent of surface which they occupy, as compared with the size of the orifice of the sac. Indeed, it is singularly interesting to observe the degree to which the naturally delicate structures of the lining and sub-serous tissues become thickened and extended in the interior of aneurismal sacs, for it will often be noticed that, where the orifice of a large sac is not of greater diameter than a half-crown piece, (evidently showing that the whole of the sac has been formed by the dilatation of some or all of the tissues of the small surface of arterial structure which occupied that spot), within the sac the lining and sub-serous tissues are spread over an extent of many square inches.

There is a great apparent difference between two very common forms of aortic aneurism, the description of which will be more easily recognised by reference to the diagrams A and B.



Their only anatomical distinction, however, appears to be that the sac of A is formed by the yielding of a considerable extent of arterial wall (as indicated by the dotted line *a*); that of B by the dilatation of a comparatively small portion (*b*). The sac of A, therefore, continues to have a wide orifice, and generally retains an almost hemispherical form up to the time of the patient's death: the orifice of B always remains narrow, but, as its walls dilate, the sac at length assumes a nearly globular shape, often having a tendency to press backwards upon the artery, and this liability is increased whenever it meets with any resisting surface (as represented in the dotted line *c*). The dotted line (*d*) shows that continued equal dilatation of the sac A would, in course of time, give it the same form as the sac B. The manner in which B enlarges accounts for the sharpness of the edge of the orifice of the sac (*e e*) which forms so characteristic a feature in this description of aneurism. The sole difference, then, between these two forms of aneurismal sacs depends originally upon the circumstance of a larger extent of arterial surface having yielded in the one instance than in the other:—A generally remains in the state of a true aneurism longer than B, apparently from having its sac composed of a larger proportion of the proper tissues of the vessel,—hence aneurisms of the former kind seldom prove fatal by rupture; those of the latter class, although they often attain an immense size, most commonly burst.

The difference, however, in the symptoms which attend these two forms of aneurism, and in the effects produced by them upon the heart's action, are often very remarkable.

To a certain extent aneurism of the thoracic aorta must be regarded, pathologically, as a disease of the heart; for, in a considerable number of cases, that organ suffers most. But this fact must

be taken with limitation. It has been remarked by a high authority upon this subject, Dr. Addison, that, occasionally, aortic aneurisms, although situated very near the commencement of the vessel, interfere but little with the heart's action. Observation has led me to the conclusion that, in cases of aneurism of the upper part of the aorta, it is probable that death never occurs from failure of the heart unless the aperture of the sac be very large, or the delay to the circulation from other causes extremely great. Where the orifice of the sac is *narrow*, however capacious its interior may be, the impediment which it offers to the circulation is comparatively small, and the power of the heart is not expended in futile efforts to propel the blood through a greatly widened space. The heart usually becomes dilated, and, at length, fails, in cases of true aneurism, where the communication with the sac is *wide*, or where the whole arterial tract has become dilated to the utmost, and has lost its elasticity in consequence of some general cause of obstruction to the arterial circulation. Under these circumstances, the passage of blood through the aorta becomes greatly delayed, and hence ensue inefficiency of the aortic valves, dilatation of the left ventricle, sometimes attended with stretching of the mitral valve and permanent widening of its orifice, followed by the most severe pulmonary, venous, and hepatic congestions. I have seen the liver enormously gorged with blood, and the venæ cavæ much dilated, in consequence of the delay to the circulation through the heart and lungs occasioned by fusiform dilatation of the aorta.

Occasionally an aneurism communicating with the artery by a narrow orifice forms so near the heart as to encroach upon that organ, or to compress some of the other large vessels. In such cases the symptoms referrible to the heart are usually of a severe nature. In cases where the ascending aorta is greatly dilated, the absence of severe heart symptoms, and the duration of the patient's life, will, in a great measure, depend upon the length of time during which the aortic valves remain efficient. In most of these instances the sigmoid curtains, after a time, become depressed, shallowed, and thickened, and soon afterwards fail to

close the orifice against regurgitation;—then the case (although life is, in some instances, considerably prolonged) becomes one of great suffering and imminent danger. But, in other cases, the widening of the aorta is accompanied by a proportionate increase, in width and capacity, of the sigmoid curtains, which, without losing their form or pliability, not unfrequently attain nearly double their natural size, and appear to act efficiently to the last. It may be observed that life is generally much protracted in these cases; the pulmonary circulation remains comparatively free, as evidenced by the almost entire absence of dyspnœa; death does not take place until a far greater amount of dilatation has occurred in the aorta than could have been sustained under other circumstances, and the hypertrophy of the left ventricle is always greater, in proportion to the dilatation of that cavity, than it ever is in cases where the valves have been for some time inefficient. Indeed, in some of these cases, although the aorta immediately above the valves is enormously dilated, the heart remains scarcely at all altered in structure.*

Aneurismal clots.

Adherent coagula do not form within those aneurismal sacs which are lined with the proper internal membrane of the vessel until a portion of that tissue

* Instances of this kind are rare (the heart having a tendency to become more or less hypertrophied and dilated in most cases of aortic aneurism), but cases do occur in which, although the main artery has become extensively aneurismal, the heart has not undergone the slightest degree of enlargement. An interesting example of this is afforded by a specimen in the possession of my friend Mr. Robert Gossett. That gentleman inspected the body of a middle-aged man, who died from aneurism of the ascending aorta (which seems to have destroyed life by compressing the lower part of the trachea), and afterwards favoured me with an opportunity of examining the parts minutely. I found that an enormous dilatation involved the whole arch of the aorta, from the upper ascending portion of which arose a very capacious sac filled with massive coagula. The orifice of the aorta was considerably dilated, but the sigmoid valves had also become proportionably enlarged, and—remaining, in all their parts, quite elastic and pliable—must have continued to perform their office with perfect efficiency. The other valves of the heart were healthy. It was evident, both to Mr. Gossett and myself, that the heart was perfectly free from hypertrophy, and was, in fact, rather undersized. Dr. J. Porter relates a somewhat similar case (Dublin Medical Press for April 16th, 1845), but, in his instance (although I believe it fully illustrated the principle which I have advanced), the aneurism of the ascending aorta appears to have been far smaller and more circumscribed than it was in Mr. Gossett's case.

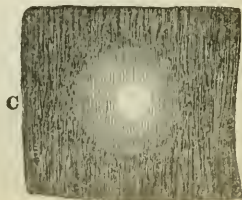
has either become much altered in structure, or has been entirely removed; and perhaps not even then in all cases, for we occasionally see false aneurisms lined with a polished membrane, which remains almost entirely free from adherent clots: but these are exceptional instances. The deposition of a firm elastic sheet of coagulum over a spongy and friable portion of an artery, of course tends greatly to relieve the weakened part from the direct pressure of the blood, and to protect it from rupture, as well as, occasionally, to retard for a time the violence of the hæmorrhage when rupture at length occurs. The gradual accumulation of layers of coagulum within aneurismal sacs has also a tendency, by partially closing them, to relieve the heart from the obstructive influence which aneurism must always exercise in a greater or less degree. The forms of aneurism which most considerably embarrass the heart are those which least frequently contain adherent coagula. On the other hand, the sudden formation of a large soft coagulum within an aneurismal sac of the aorta must be regarded as an unfavourable occurrence, as tending to produce distension rather than obliteration of its cavity.

Considerable danger sometimes attends the too rapid coagulation of blood within aneurismal sacs, even in arteries of the second and third orders. A case occurred within my own observation, some time ago, in which inflammatory action produced coagulation within the sac of an aneurism involving the innominate and subclavian arteries. Suffocative symptoms almost immediately ensued, and caused death in a few days. It was found, upon examination, that the increased impediment to the passage of blood produced by the coagulum had caused the lower portion of the dilated arteria innominate to press some intervening glands against the trachea, and had thus destroyed life. Another ill effect of this sudden coagulation appeared in the commencement of separation of the tissues at the most prominent part of the sac. The records of operations for aneurism of the brachiocephalic and carotid arteries prove that pressure upon the air-passages, under circumstances similar to the above, is by no means a very rare occurrence. It is probable that most surgeons who have operated frequently have met with

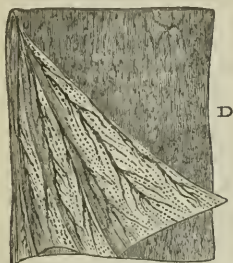
cases in which, soon after the femoral artery had been tied for popliteal aneurism, rapid enlargement of the sac has compressed the other vessels in its neighbourhood, and thus produced gangrene of the limb. It should therefore be borne in mind that the only hope of prolonging life in aneurisms of the aorta must depend upon a plan of treatment which procures the gradual deposition within the sac of layer upon layer of semiorganised fibrin.

The use of this term "semiorganised" requires some explanation. Large aneurismal sacs are sometimes filled with thick coarse layers of partially decolorised fibrine, the surfaces of which, upon being separated from each other, do not present any remarkable appearances, except a few irregular furrows, lines, and spots. But these marks are, in reality, the rudiments of an arrangement which, in other specimens of aneurismal clots, will be found to present some very observable and interesting characters.

Several years since, Dr. Rainy, of Glasgow, entrusted to the author, for examination, a portion of clot from the most projecting part of an aneurismal sac which had formed in the ascending aorta. As this was a very good specimen of the appearances which may generally be found, to a greater or less degree, in all aneurismal clots, a brief description of its structure may not be out of place. It was composed of many exquisitely thin semitransparent laminæ of partially decolorized fibrin. Each of these layers was traversed by numerous branched lines, which all stood out in slight relief from the surface. The whole of these lines were directed towards a central point at the greatest convexity of the clot, but did not reach it, all terminating at a little distance from its centre in such a manner as to leave a small and perfectly circular space, which must have corresponded with the most prominent part of the sac, entirely smooth (Fig. C.)



The main lines all ran parallel to each other, some passing from above, others from below, but none advancing from the sides; their branches did not communicate, but terminated in rows of separate dots. Fig. D.



Dr. Rainy examined these lines microscopically, and found that they were hollow tubes. The accompanying figures will give some idea of the appearances which I have described*. I have since had many opportunities of examining these lines, and believe that their presence indicates the existence of a certain degree of organization in the layers, but it seems impossible to assign them to any of the ordinary classes of vessels. The isolated dots which terminate the lines recall the appearance of the lineally disposed spots which form the first traces of blood-vessels in the vascular area of the incubated egg; but if they have originally been formations of this description, their completion into continuous tubes must have been checked by the firm coagulation of the fibrinous medium in which they are placed. The size of the continuous lines proves that they are not capillaries, the largest of those vessels rarely having a diameter of more than the $\frac{1}{1000}$ th of an inch, while these are mostly from about the $\frac{1}{40}$ th to the $\frac{1}{10}$ th of an inch in width. I believe that if these tubes do communicate at all, it is by lateral contact. They are not cylindrical, but, when divided transversely, are found to have a somewhat angular form; the larger

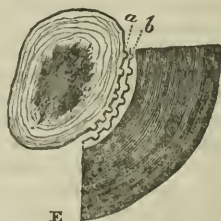


main lines and branches of the different layers nearly correspond with each other, and the acute upper angle of the line below appears to be in appo-

sition with the somewhat indented base of that immediately above it.



The probability that such communication occurs between them is strengthened by an appearance which may occasionally be noticed in the small permanent laminated clots which are sometimes found adhering to parts of the interior of the heart. In separating one of these from its adherence to the endocardium, its attached surface will be seen to be traversed by one or more lineal rows of little mammillary processes (*a*, Fig. E.) which have evidently entered into corresponding minute hollows (*b*) in the surface to which it has been affixed—a condition obviously designed for the maintenance of a certain degree of nutrition in the adherent mass.



Upon whatever circumstance these arrangements in aneurismal clots really depend, it is evident, from the frequency of their occurrence, and the uniformity of the appearances which they present in different instances, that they are the results, not of accident, but of design; and no serious error can arise from the pathologist's encouragement of the idea that his care in endeavouring to effect the spontaneous cure of internal aneurism is aided by Nature's efforts to establish a process of reparative organization in the diseased parts.

General principles of treatment in aneurisms of the aorta.

The following appear to be the chief general indications which it is necessary to fulfil in conducting a rational plan of medical treatment in cases of aneurism of the aorta.

To encourage, as much as possible, the deposition of thin layers of plastic coagula within the aneurismal sacs.

To render the circulation through the visceral arteries, general ca-

* I am not aware that these appearances in aneurismal clots had been at all noticed until they were described by Dr. Rainy, in his lectures, in 1838-9.

pillary system, principal venous trunks, and lungs, as free as possible.

To diminish, as far as is practicable, the volume of the circulating fluids, but in such a manner as to reduce the proportion of their watery constituents without impoverishing the fibrine, or producing debility in the system.

To maintain the muscular power of the heart.

The system of treatment in aneurism recommended by Valsalva appears to have carried with it several great and valuable principles, which, in judicious hands, were calculated to prolong life in many cases of the disease, even when occurring internally; and, in some instances, possibly to effect a cure. But when it came to be conducted by incautious and unscientific practitioners, it fell into disrepute, from being rendered, not, as was originally designed, a means of tranquillizing the circulation, reducing the fluids, maintaining the power of the vascular organs, and preserving bodily quietude, but, on the contrary, a system of injudicious depletion, confinement, and starvation, by which the fluids were impoverished, the heart's action weakened and rendered irritable, the patient's health broken, and the probability of a sudden death exchanged for the certainty of a painful and lingering one.

The only natural process by which the cure of aneurisms of the aorta can be effected is, of course, by procuring obliteration of the sacs by firm layers of adherent coagulum. In aneurisms of the limbs it appears to be merely sufficient that the sac should become completely plugged with clots; it matters little of what form, providing only that they be firm enough entirely to prevent the flow of blood through the diseased part, and to divert its course to the collateral arteries; but in aneurisms of the aorta, or, at all events, of its upper portion, a far more delicate process requires to be effected, as here the sudden formation of loose coagula in an aneurismal sac will always be liable to occasion rupture of the walls of that cavity, for when the pouch has already become filled to distension—the passing current of blood still maintaining its pressure upon the mouth of the sac—every additional drop of fluid added to its contents will begin to act

upon its walls with the distending force of the water in a Bramah's press. Such loose coagulation will also be liable to stop the flow of blood through the aorta (an occurrence which, it is needless to say, is all but certainly fatal, whether suddenly or gradually produced), or, at all events, it can scarcely fail to cause fatal obstruction and embarrassment to the heart's action, as coagulation of this kind would never be limited merely to the interior of the sac. The trial should be, by tranquillizing the circulation and preserving the blood in as highly fibrinized a state as possible, to procure the obliteration of the sac, and of the sac only, by layers of coagulum so firm, organized, and even, that they may resist the infiltration of the blood, and present internally a smooth but resisting surface past which that fluid may glide easily in its passage through the vessel. It is a fact worthy of observation, that while, in one individual, the fibrine of an aneurismal sac is found disposed in thin, expanded, firm, and closely-united laminæ of a light flesh colour, and supplied with numerous and beautifully regular corresponding ramifications, in another subject, where the disease has occurred nearly in the same position, the clots appear thick, irregular, interrupted, and broken, their interstices infiltrated with fluid blood, and their layers coarse and friable, and scarcely presenting the slightest traces of organization. It is impossible not to perceive that this difference has arisen from the process which tends to a spontaneous cure of the disease having been more imperfect in the latter than in the former case.

I have already spoken much of the probable influence of visceral obstruction in producing various forms of aortal dilatation. The importance of removing congestions of the liver, spleen, and kidneys, of avoiding all causes of undue stimulation, irritation, and excited action, within those organs, and of restoring, and as far as possible maintaining the natural play of their functions, cannot be too strongly urged. The precise modes of treatment required to effect these ends must, of course, vary with almost every case; it is often quite sufficient that the practitioner's mind should be directed to the ill effects arising from disturbance in any organ, to enable him to

find means of entirely averting them. In aneurism, as in every other form of organic disease of the vascular centres, the prolongation of life generally, in very great measure, depends upon the maintenance of that degree of rest which, while it prevents the capillary system from suffering the obstruction which is always attendant upon strong muscular action, does not deprive the patient of the benefits of good air and gentle exercise. Attention to the freedom of the cutaneous and pulmonary transpiration; the avoidance of chills and of exposure to a low temperature under any circumstances; the devotion of the utmost attention to the removal or prevention of all additional causes of pulmonary obstruction—(the patient being careful also to avoid breathing a very rarified atmosphere) and the maintenance, as far as possible, of a state of mental tranquillity—are, of course, among the most familiar and important precautions which it is necessary to adopt.

The reduction of the volume of the circulating fluids has long been considered as a necessary means in the treatment of all organic diseases of the heart and its appendages; but, unfortunately, depletion has, too often, been the course adopted to effect this purpose. In a person reduced by organic disease, a full bleeding, to say nothing of its influence in depressing and rendering irritable the functions of the nervous and vascular systems, has the effect of removing from the body a quantity of vitalized and organic matter which, it is probable, the weakened powers of nutrition may never succeed in reproducing; and, so far from this plan of treatment having the effect of relieving the blood-vessels from distension, I doubt much whether, in a weakly person, whose absorbents are active, the vascular system does not, in a few hours after a free depletion, either by the lancet, or by purging, contain as large, nay, it may be even a larger, bulk of fluid than it previously did, much watery matter having been rapidly absorbed to supply the place of that which was removed. Still, in these cases, as much as possible of the thinner part of the blood must be drained off. In every instance of arterial and cardiac disease the weakened structures become oppressed with the load of fluid which

they have to convey, and nature often attempts to relieve them by visceral engorgements, dropsical effusions, and hæmorrhages. The desired effect may be far more successfully produced by gradually diminishing the quantity of the fluid ingesta than by the employment of any system of active depletory evacuation;—and the fact, that the palpitations, lividity of the surface, and difficulty of breathing after eating, as well as the sudden nocturnal wakings and paroxysms of dyspnœa from which the subjects of internal vascular disease so usually suffer, in all probability mainly depend upon the admission of an undue quantity of material into the blood, consequent upon the recent process of assimilation, becomes a suggestion that in such cases every unnecessary article of diet, solid as well as fluid, should be dispensed with. It has been found that the quantity of fluid really necessary to support the body in a state of health is exceedingly small, and the amount of solid food absolutely required by a person who uses but little exercise is very far less considerable than is usually supposed. It is, of course, by no means requisite that a patient suffering from arterial or cardiac disease should be suddenly deprived of either fluid or solid food, or should at any time submit to absolute privation by hunger or thirst, but no injury can be done by reducing the quantity of the ingesta to the smallest reasonable standard, while care is taken that their quality shall be of the most nutritive kind. Very small bleedings frequently repeated have been found of considerable efficacy in cases of aortic aneurism, but, when having recourse to this treatment, it would be well to combine with it the use of mild tonics: I believe that by far the best mode of removing fluid in these cases is by keeping up a gentle action upon the skin and kidneys.

A careful adherence to the course of treatment which I have endeavoured to sketch out will also tend to effect the last mentioned, and probably the most important therapeutic indication in this and in many other forms of organic vascular disease—to maintain the strength of the left ventricle. We have seen that, when life is much protracted in aortic dilatation and aneurism, this cavity is liable to become dilated and to fail in its power

of contraction, while, on the other hand, weakened action of the heart produces increased delay in the dilated arterial tract, which consequently suffers distension and becomes liable to rupture. Diminution of the fluids, rest, and gentle tonic treatment, tend to preserve the muscular power of the heart, and to maintain the due capacity of its cavities, and may, to a certain degree, restore these properties when they have failed in consequence of disease.

The administration, under these circumstances, of digitalis, the acetate of lead, and other medicines which have a direct tendency to lower the action and depress the power of the heart, cannot, I submit, be too earnestly deprecated. I believe that the former of these medicines is generally used, in organic diseases of the heart and great vessels, with very mistaken views of the pathology of those affections. The great error appears to be still often committed of regarding palpitation as though it were itself the disease, and not, what it really is, the sole means by which an obstructed and overloaded heart is enabled to propel its contents,—and hence of employing medicines which check the palpitation without removing its causes. But the rational plan of treatment here obviously is, to remove the causes of the obstruction from which the heart suffers, where they are not of a permanent nature, or, if that be impossible, to diminish the load of fluid which embarrasses the heart, and then the palpitation, being no longer requisite, will abate of its own accord.

Digitalis has merely escaped the odium of being generally considered to exercise a deadly influence in aortic aneurisms and in heart diseases, by virtue of its diuretic effect. Its depressing power is not always sufficient altogether to paralyse the action even of a diseased heart, and the temporary relief of symptoms which it produces, by lessening the quantity of the fluids, has led to the belief that its effects are, upon the whole, beneficial. But there are many other diuretics which may be used in cases of dilatation, which are quite as efficacious as digitalis, and far more safe. It is certainly an unwise measure to administer a remedy which its advocates justly term “the direct seda-

tive of the heart” in a class of diseases where all the worst symptoms arise from the difficulty that organ experiences in propelling its contents; and where, in the natural progress of the structural alterations in its cavities consequent upon protracted obstruction, death eventually occurs from exhaustion of its contractile power.

It will, of course, be requisite to employ a restorative system, and occasionally prompt means of stimulating treatment, in all those instances where the patients are gradually sinking under the violent paroxysms which attend failing power of the cavities of the heart; but it would be well to bring measures early into play which would tend to prevent such a degree of weakening of the heart from ever occurring. It is true that, in cases of aortic aneurism, where the heart long retains its power, the sac occasionally attains an immense bulk, displacing canals and viscera, compressing nerves, absorbing bone, and gradually forcing its way to the surface, despite of every obstacle:—here, it must be granted, the preservation of life is often but a prolongation of agony: but still, the physician's leading duty is to avert the fatal event as long as possible—at every cost.

The plan of treatment which I have now traced out, if taken in its details, will be found to contain many suggestions which have been previously broached by some of those who have written upon the subject: thus it is unnecessary to state that the propriety of reducing the volume of the circulating fluids without impairing their quality was originally recommended, in cases of heart disease, by Dr. Hope; and Dr. Joseph Ridge has insisted upon the propriety and feasibility of attempting to strengthen the cavities of the heart, when their power is about to fail in consequence of organic obstruction, by a far more complete train of arguments and facts than I have succeeded in adducing. Still, I doubt if any writer has laid out the whole system of treatment precisely in the manner which I have adopted, and it must be remembered that to treat with any degree of success a disease which, like aortic dilatation, implicates so severely the most vital centres of the body, and has such extensive influences

upon so many important functions, it can scarcely be sufficient to employ merely one or two simple therapeutic measures, however well-chosen they may be: success can be looked for only in the adoption of some thoroughly comprehensive system of treatment which grasps every aid, and anticipates and averts all sources of danger.

Upper Stamford Street,
April 5th, 1845.

INFLAMMATION OF THE VENA PORTA. BY
DR. FREY, OF MANNHEIM.

CASE.—A man, 62 years of age, of large form and good constitution, began to lose his health after the death of his master, to whom he had been very much attached. He first complained of loss of appetite, weariness, and depression, and feared that he was himself the subject of the same complaint (calculus) which had proved fatal to his master. He continued in this state for fifteen days, taking occasionally purgative medicine, although his bowels were not confined, and fully persuaded that he suffered from a disease in the lower part of the belly, where he experienced a sensation of heaviness: he had also pain in the epigastric region. At length he was compelled to keep his bed and apply for advice. On March 5th, his face was congested, his spirits depressed; he had not slept for some nights, and complained of slight pain in the epigastrium: he had passed two liquid dejections daily from the use of medicine: the hypogastric region was neither tense, swollen, nor tender; the tongue uniformly white, loaded, rough as the tongue of the ruminants, and dry; pulse 95, rather full and strong; anorexia; thirst. On the 7th he had an attack of chilliness, followed by heat, but without perspiration, and the pulse was more frequent, and thirst more intense. (This exacerbation was repeated on the subsequent days, sometimes in the morning, sometimes in the evening.) His sleep was short, and disturbed by unquiet dreams, yet without delirium. On the night of the 9th he had six greyish-yellow, flaky, very foetid motions; in the morning there was evident gurgling on pressure over the region of the cæcum; the tongue remained as before, the intellect was unimpaired, the respiration natural. During the night of the 11th he passed forty motions, and twenty on the preceding day, when there was gurgling, with tenderness, over the whole abdomen, which was slightly distended; each motion was preceded by pain, yet without tenesmus; pulse more frequent, less full, small and feeble; aspect less congested. On being moved he almost fainted. On the 13th, the

diarrhoea had been slightly checked; and on the morning of the 14th, the skin, for the first time, was perspirable. Aphonia afterwards supervened, with short quick respiration, yet without abnormal sounds; the diarrhoea again increased, so that twenty motions were passed during the night, and ten or sixteen during the day. On the morning of the 16th he was exceedingly depressed: pulse small and frequent; skin dry; intellect still unimpaired; yet, shortly after noon, the surface becoming cold and covered with a clammy sweat, and the intellect slightly disturbed, he gradually sank.

Autopsy.—There was not any sign of disease in the thorax. The walls of the ascending vena cava in the region of the liver were healthy. The vessel contained a clot of blood of blueish cast, and soft; the peritoneal cavity contained a flocculent sanious secretion; the intestines were injected, and covered with soft viscid exudations, and were in places adherent to the neighbouring parts. The mesentery of the cæcum, and of the lower portion of the ilium, was thickened; its veins remained open after division, and exuded a thick, purulent, cheesy, greenish-yellow matter. In the mesentery there were deposits of the same substance, of the size of pigeons' eggs, and each communicated with the cavity of a vein. The large veins were distended with the same substance, but contained no coagulated blood; their walls were of a pale yellow, thick and lacerable. The other parts of the mesentery were free from pus, and the veins were filled with deep-red fluid blood. The trunks of the vena portæ and the splenic veins contained a dirty-red fluid. The substance of the liver was generally healthy; but on the surface there were small cones, of the size of nuts, with their apices pointing inwards, of a dark red, and sprinkled with small purulent depôts; the branches of the vena porta were filled with a dirty reddish fluid. The spleen was of natural size, and brownish red colour, lacerable and exsanguine. The lining membrane of the stomach was tumid, of a slate colour, and covered with mucus. The duodenum and the whole of the small intestines were injected, marbled, and tumid. The glands of Brunner were large. The large intestines were covered by a coat of epithelium and an exudation of yellow pus.

REMARKS.—The pus in the vena porta was arrested in the capillaries of the liver, and did not pass into the general circulation; and thus may be explained the absence of the cerebral and thoracic symptoms, which generally indicate purulent absorption. This would also account for the difficulty in the diagnosis. — *Gazette Médicale de Paris*, Janvier 4, 1845.

MEDICAL GAZETTE.

FRIDAY, AUGUST 29, 1845.

SINCE we last directed the attention of our readers to the present state of Midwifery-practice in this country, two cases have occurred which strikingly show that some care is required in granting diplomas for practising in this branch of the profession, to an individual whose knowledge of the subject has not been properly tested. We allude to a case which was tried at the last Norwich Lent Assizes,* and to another of a similar kind, which has become the subject of a Coroner's inquest in the metropolis within the last few weeks. Concerning the latter we shall at present say nothing, as it is still *sub-judice*; but the former is a fair subject of comment, now that all are interested in the improvement of the medical profession.

The defendant in the case referred to, unlike Garland and Gallimore, who were merely practitioners by sufferance under the act of 1815, had undergone an examination, and received a diploma from the Apothecaries' Society. He was, in short, a licentiate, with a legal right to practise. This individual was charged with the manslaughter of a female while attending her during her delivery. The evidence of Mr. Cross, of Norwich, an experienced surgeon, went to show that the uterus, with its appendages and greater part of the intestines, large and small, had been removed from the body, partly by cutting and partly by tearing! He considered that tearing away the uterus at all betrayed professional ignorance, in which, we think, most medical men will agree with him. It was ingeniously urged, in defence,

that removing the uterus and disembowelling a female, was a sort of unavoidable accident in a delivery, and that such an operation was not a proof of inattention, criminal neglect, or any want of skill! The judge is reported to have charged the jury, that the removal of the uterus might have been a "mere error in judgment," and that the defendant probably mistook it for a tumor: there was no case of criminal neglect, nor had the greatest ignorance been displayed! Upon this the jury returned a verdict of acquittal.

Professional men will form their own opinion of the treatment pursued in this case, but we doubt whether they will take that favourable view of the circumstances which led the judge to affirm that the removal of the greater part of the abdominal viscera during delivery is to be regarded as a mere error in judgment! Gallimore was convicted because he performed the same operation by mistaking the uterus for the placenta:* this was decided to be not an error in judgment, but a proof of ignorance and incompetency: it appears, however, that the case is different when the accoucheur mistakes the uterus for a tumor: this is neither a proof of gross ignorance nor of criminal inattention! For ourselves we cannot comprehend why Gallimore should have been convicted and Gaches acquitted, unless it is intended that a diploma should shield a man from all responsibility. We have reason to congratulate ourselves that such a case among regular professional men is extremely rare: but it would be folly to shut our eyes to the fact, which its occurrence unequivocally demonstrates,—that the license of the Apothecaries' Company is no criterion of competency to practise midwifery.

In the reform of the profession it has

been proposed to remove this evil—1, by instituting a control over the curricula of the Colleges; 2, by the appointment of more efficient examiners; and, 3d, by requiring an examination in midwifery from those who take out a diploma. All must admit that these would be considerable improvements on the present plan, which, so far as midwifery is concerned, partakes much of the character of the “voluntary system,” leaving it optional to a practitioner to acquire just so *little* knowledge of the subject as he pleases! But the serious question arises, Do these provisions go far enough? Will they protect society, especially the poorer classes, against such horrible atrocities as those which we have just recorded? We think not, and for reasons which we shall presently state. In the meantime it appears to us that, under a new system of medical education, it is very unlikely that such a case as that which we have here reported will occur in the hands of a *licensed* person. So far society will be protected; for there is the strongest reason to believe that the best results will follow the appointment of more efficient examiners, and the institution, for the first time as regards general practitioners, of special examinations in this department of practical medicine.

It remains to be considered, however, whether the poorer classes of society will be hereafter attended by the licensed or registered practitioners, or by the unlicensed and unregistered. There cannot be a doubt, unless some alteration be made, that the unlicensed will enjoy the same immunities, respecting obstetric practice, which has been hitherto their privilege in England, and that midwifery-practice among the poor will fall, to a great extent, into their hands. The benefit to a general practitioner, who has undergone an examination in midwifery, will be, that

his name will hereafter be placed on a printed register, in order that those who have the knowledge or disposition to consult it may determine whether he has been duly licensed or not to practise that branch of the profession! The poor, however, will look less to a printed register—the nature and objects of which it may be difficult for them to understand—than to the bold professions and the low charges of the unlicensed pretender. In spite of medical reform, the *disembowelling accoucheurs* will still have their range of practice, and the Assize Courts may still have to receive evidence respecting such atrocities as those which we have recorded. Is it to be supposed that poor women, like those whose lives have been thus plainly sacrificed to ignorance and unskilfulness on the part of their attendants, will search a printed register before they call in the aid of an accoucheur? Such a supposition would be a “mockery and a delusion;”—it would argue an entire ignorance of the habits and prejudices of the lower classes of society. Yet this is all the protection which the new measure appears to give. The restriction of this kind of practice is made to depend upon the fear created in the mind of the individual as to the legal responsibility which he incurs by undertaking it; and the records of our Courts of Assize show that this fear operates to a very limited extent. With these pretenders, the numerous chances of future escape, with the certainty of present profit, make them indifferent to the risk which they incur.

We must express our regret that an argument of this kind, in relation to a subject of such importance, should be met by the allegation, that things will not be worse under the *new* than they were under the *old* system *Stare super antiquas vias*, is a good maxim in its way, but it appears to us to be here

entirely out of place. The object of any measure of medical reform is to improve the profession, and benefit society; and yet on the demonstration of the existence of a great evil like this, where the lives of females are wantonly sacrificed to the most criminal incompetency, we are to be told that the profession has no right to complain, because ignorant pretenders are just as numerous without the bill as they are likely to be with it. In this view, reform signifies merely technical change, not substantial improvement!

We are aware that there would have been some difficulty in placing restrictions on the practice of midwifery; but, at the same time, we think that the occurrence of such cases as those of Garland and Gallimore—and how many more occur that never come to light it is impossible to say—should teach our legislators that some protection is really required by the poor, since in such matters they are quite incapable of judging for themselves, and the legislative test of competency, *i. e.* consulting a printed register, will be to them a dead letter.* The difficulty to which we allude, respects the practice of female midwives, of whom it appears there were in 1841, 676 in England, and 641 in Scotland,—numbers out of all proportion to the respective populations, and showing probably some defect in the Returns. There appears to be no control over the practice of these women;—they are not required by law to undergo any preliminary education, although some voluntarily prepare themselves, and there is no test of their competency to practise. It would of course be impossible to put down unlicensed accoucheurs without suppressing this class of female midwives; and the question, then, presents itself, whether the latter can altogether

be dispensed with. Some women, it is well known, prefer being attended by a female practitioner, and it certainly would be an act contrary to English custom, to place any restriction on the wishes of society in this respect:—we doubt whether the question would be seriously entertained for a moment by either House of Legislature. If the truth were acknowledged, we should probably find that female midwives are chiefly selected by the poor, not from any feelings of delicacy, but from the lowness of their charges: and this objection to any restriction on female practice could not be met unless the charges of medical practitioners were regulated, as in certain States of Germany, by a Government tariff. To any interference of this kind, there would undoubtedly be strong opposition on the part of the profession.

The only solution of the difficulty appears to be this. If female midwives, or unlicensed persons, are to be allowed to practise, they should be compelled to undergo a regular course of study, and be examined as to their competency. None should be allowed to practise who have not submitted to this test; for, however high the notions which may be entertained of the liberty of the subject in this country, we must remember that the life of one person is not to be sacrificed for the sake of conceding an unreasonable degree of liberty to another. In England and Wales only, there are about five hundred thousand births yearly, and about *three thousand females die annually in childbirth!* The Legislature appears, at present, to interfere no further in the matter than to publish annual reports of the average number of births and deaths, for the information of the survivors! The proportion of these deaths in childbirth is very great; and the causes are not sufficiently inquired into, or we believe that many of the

* In the case of the female referred to in this article the body had been buried, and afterwards disinterred for the inquest!

deaths would be found referrible to unskilful treatment on the part of midwives, who only call in a medical practitioner when it is too late to render effectual assistance. We should therefore recommend, if it be found inexpedient to suppress female midwives altogether, that they should be placed under the same restrictions as the *sages-femmes* of France. The evil undoubtedly exists, and it ought to be provided for. The present loose mode in which midwifery is allowed to be practised in England calls loudly for a change; and there can surely be no time more convenient for commencing this change, than that which is selected by the legislature for the reformation of the whole profession.

Reviews.

Pulmonary Consumption successfully treated with Naphtha. With Cases from other Medical Men in support of that Treatment. And an Appendix showing the utility of Puncturing Tuberculous Cavities, as an Adjuvant in the Cure of Phthisis. Second Edition. By JOHN HASTINGS, M.D. 8vo. pp. 260. London: Churchill, 1845.

WE cannot help believing that, when he first published this work, Dr. Hastings was too precipitate in placing before the profession, as a highly successful plan, a new mode of treating phthisis, the power of which he had avowedly tested only for the brief space of nine months. We do not think that the merits of the case are at all altered by the stronger corroboration which, as he believes, his views have since received.

All medical men know the difficulty of diagnosing phthisis with certainty in its earliest stages, and are acquainted with the fluctuations which attend its course; the variations of seeming recovery and too evident relapse by which its advance is characterised; the frequently slow and insidious progress of its ravages; and the little dependence which is generally to

be placed upon the apparent relief which its symptoms often for a time undergo. It is therefore not surprising that, when an author professes to have cured confirmed tubercular disease in a few weeks,—nay, in some cases, almost in a few days,—other medical men should be inclined to believe that the great sum of his success has arisen from the removal of bronchial irritation and of pulmonary congestion, or pneumonic induration, and in the improvement of the patient's general health; while the tubercular deposits, which were the essential parts of the disease, remain untouched, leaving the patient still liable to die from phthisis, it may be at no very distant period. Nay, under such circumstances, the author must not be surprised to find, here and there, a knot of obstinate practical men who (quite unmoved by his careful descriptions of rational symptoms, and minute notings of physical signs) have made up their minds to doubt altogether whether, in these easily-remedied cases, tubercular degeneration ever, in reality, existed at all.

In putting forward his conclusions thus hastily Dr. Hastings scarcely did justice to his remedy, as the majority of his readers must have considered that it had not received sufficient trial, and was recommended upon inconclusive grounds. But the author's views appear to gain considerably more importance when he reports that he has watched for more than two years many of the cases in which his remedy was employed, and has found that out of thirty-seven patients in whom he conceives he had good reason to believe that incipient phthisis was present when they first came under his notice, nearly two-thirds are, at present, in good health; while, although the condition of the other third is doubtful (from some of the patients having been lost sight of, and others not appearing to be certainly in sound health) there is no reason to believe that phthisis has become fully developed, or death taken place, in any of the number. We have not had time to read through the whole of these thirty-seven cases; but, from what we have seen of the details of several taken at random, it cannot be denied that many of the symptoms stated to have been present were those which are generally considered to indicate the stages of

phthisis which are antecedent to the formation of cavities, but we also think that the grounds upon which the existence of confirmed tubercular disease was presumed in others were extremely slight. Regarding, however, the apparent success of the treatment in the former class of cases alone, the author's views, confirmed as they seem to be, in some measure, by the test of time, gain much greater weight than they possessed at first.

Any *safe* plan of treatment which appeared to have been the means of removing distinct phthisical symptoms, two years ago, even in one single patient—that patient being, at the present time, perfectly free from any of the symptoms or physical signs of phthisis—is worthy of a fair and careful trial; and we have little doubt that, after reading this work, most practitioners will be disposed to test the efficacy of the author's remedy (naphtha) in their own practice. We perfectly agree with Dr. Hastings that the failure of his prescription in the hands of some other medical men is by no means an indisputable proof of its inefficiency. When a new remedy has been recommended for a disease which has hitherto been considered as little amenable to treatment, both it and its advocate are very liable to gain discredit from the incautious manner in which practitioners test its powers; they give it in a wrong form, or, what is more frequent, in cases where it is inappropriate; indeed, in instances the very reverse to those for which it was recommended. The discoverer finds that he alone can do justice to his prescription, and it is fortunate for him, and sometimes equally fortunate for medical science, if he has the perseverance and the temper to continue its employment himself, and to renew his instructions to others.*

* We have lately seen (in a contemporary journal,—Dublin Med. Press, June 4th) a very forcible illustration of the above remarks, in a report of some cases of phthisis, where the naphtha treatment was adopted by a very able Dublin physician.

In three of these cases there were cavities in both lungs; in a fourth, the physical signs indicated excavation only on one side; in the other two instances the signs of softening tubercles were present. These six cases are detailed as presenting a fair average of the results of the author's use of this remedy; three of the patients died, and nothing has been learned subsequently respecting the other three. The author says, that, "in none of the cases did the naphtha produce the slightest improvement in the physical signs, and in none in which he has exhibited it has he observed the signs of amelioration which are stated

Dr. Hastings ascribes the failure of those medical men who have been less successful than himself in the treatment of phthisis by naphtha to one or all of the following causes.

"First. From a deleterious agent being employed for a medicinal one.

"Second. From its use in cases where it was contraindicated.

"Third. From patients being treated in unfavourable situations."

He proceeds to say, that "Cases are continually occurring in which oily, milky, and coal-tar naphtha, are administered, and most prejudicial results ensue." The preparation recommended by Dr. Hastings is the *pyro-acetic spirit*, which "is obtained by the destructive distillation of an acetate generally of lead or lime, and in its natural form is scarcely distinguished from pyroxylic spirit. Its chemical properties are, however, more spirituous, its density being nearly equal to that of alcohol, and it contains more oxygen than the former." (?) The author's test was its colourless and transparent character, and its agreeable ethereal alcoholic odour; its specific gravity, which is 0.823 to 0.824; (when pure .792?) its increase of temperature consequent upon admixture with water; its preservation of appearance on the addition of nitric acid; and its taste being warm, without the least sensation of burning." Dr. Ure has recently suggested an easy method of effecting this object,

to have followed its employment in the hands of others." Now, in what cases some of the advocates of the naphtha treatment may have recommended their remedy we cannot pretend to say, but those which we have just quoted are certainly not the kind of instances in which Dr. Hastings anticipates benefit from its use:—he avowedly does not consider that it has any power of curing the disease when there are large excavations in both lungs, or when extensive deposits of tubercular matter are undergoing softening. Dr. Hastings, it should be understood, recommends the use of naphtha not as a panacea in all cases of phthisis, but merely as capable of effecting a cure in certain stages and forms of that disease. Surely it is not to be considered that when an author recommends wine in the latter stages of continued fever, every patient with typhus is to be ordered port from the commencement of the attack until the hour of his death; or, because another advocates emetics and bleeding at an early period of the same disease, his plan is to be carried out by the continued use of ipecacuanha and the lancet.

We do not say this from a wish to advocate the naphtha treatment, but because we know that, in adopting a new therapeutic measure, it is but fair to our patients and to the propounder of the remedy to test it, at first, precisely in the manner which he has pointed out as most efficacious.

which is founded on the following facts. If nitric acid of specific gravity 1.45 be added to pyroxylic spirit, the mixture assumes a red colour, but no effervescence takes place. If the same acid be added to pyro-acetic spirit, there will be no change of colour, but an effervescence will slowly be formed, accompanied with an elevation of temperature, and copious evolution of gas, resembling in appearance the action resulting from the mixture of alcohol with nitric acid, but with an acetic instead of an ethereal odour. Pyro-acetic spirit may also be generally distinguished from pyroxylic spirit by its causing no appearance of milkiness on mixing with water, in the state in which it is met with in commerce" (p. 154). Dr. Hocken states that "the most ready test is to be found in litmus paper, which is reddened by the non-medicinal, but is unaffected by the medicinal compound."*

In stating the cases in which he recommends the use of naphtha, Dr. Hastings observes, that "the less phthisis is complicated with other affections the more suitable it is for this treatment; where the pulse is at the ordinary standard, or thereabouts, where the hectic is slight, laryngeal, and peritoneal disease absent, the functions of the stomach and bowels not much impaired, the constitutional disturbance

inconsiderable, and the physical signs denoting only a slight deposit of tubercles in one lung,—the prognosis is favourable, and a speedy recovery may be anticipated. In many cases this mild character of the disease is never witnessed, however early they may be seen; at the same time, for want of close observance, this period frequently altogether escapes notice; hence success often depends upon an early diagnosis of disease. If naphtha is employed in acute phthisis, where the cough is very harassing, with slight frothy expectoration, respirations thirty to forty per minute, pulse a hundred and twenty to a hundred and forty, hot skin, profuse night sweats, great thirst, appetite deficient, or altogether wanting, and the physical signs denoting an extensive crop of tubercles in both lungs, it will be found injurious rather than beneficial. If it be employed in chronic phthisis, co-existing with disease in other organs, its value is diminished in proportion to the extent of the complications and their vitiating influence on the constitutional powers; if it be continued in certain cases where improvement had followed its use, after the appearance of intercurrent pneumonia, bronchitis, or pleurisy, it will do great mischief. Many such cases give way to a short course of treatment with antimony, digitalis, &c., and then the pyroacetic spirit may be again employed with the greatest advantage." (pp. 118—19.) "Where hæmoptysis is present, or where it has recently existed, naphtha is generally contra-indicated. When complicated with dyspepsia little or no benefit will accrue from its use until that affection is removed." The author has also found that the disease is not amenable to this plan of treatment when the patients are in crowded hospitals, or in other situations where the atmosphere is impure.

The dose in which the author appears generally to administer the naphtha is from ten to twenty drops in a small quantity of water three times a day.

Dr. Hastings very fairly states that he has only treated two cases out of sixty-two successfully, after cavities had established themselves, exclusively of one case reported in the first edition of this book. It must be remembered, he adds, that the cavities in both cases

* In a late number of Casper's Wochenschrift, I. E. Simon complains that so indefinite a name has been given to the proposed remedy by Dr. Hastings. He properly remarks, that the term "*Pyro-acetic spirit*" might be applied with equal propriety to the spirit derived with acetic acid from the destructive distillation of wood. That the medicine is procured by the dry distillation of an acetate, proves it, however, to be a liquid which has been long known to chemists under the name of "*Acetone*," a name which, if retained, is not likely to give rise to any confusion. 1845. p. 135. *Pyroxylic spirit* is commonly met with in an impure state; it is highly acid, becomes milky on the addition of water, and has a very offensive smell. Its composition is $C^2 + H^4 + O^2$ —the hydrated oxide of methyle of Liebig. When pure, its specific gravity and boiling point differ but little from those of acetone. It mixes with water, alcohol, and ether, and is quite neutral. In this state it might easily be confounded with acetone, the composition of which is $C^3 + H^8 + O$. Upon the efficacy of Dr. Ure's test in distinguishing the pure liquids from each other, we are unable to give an opinion; but some simple and easily applicable test would be highly serviceable in practice. When nitric acid is added to common pyroxylic spirit, the liquid becomes at first red, and afterwards black, as if carbonised. On heating the mixture, there is at first no apparent change, but in a few minutes there is a violent escape of gas at intervals; the liquid then becomes light coloured, and has an ethereal odour.

were small, whilst the greater portion of the lungs was uncontaminated with tubercle. Every reader of this book must be surprised at the rapidity with which the author conceives the symptoms of phthisis to have been removed by the naphtha treatment in many of his cases. Others may be disposed to agree with us in regarding it with very far less sanguine expectations than he evidently does, but we believe that few will feel unwilling to give the "true naphtha" a fair trial, and if successful to allow the author the credit to which the proof of its usefulness as a remedy would certainly entitle him. Its extended and careful use can alone prove whether it is to be considered as a specific in certain cases of phthisis, or as a medicine which, although of some value, will eventually have to take its level among the host of palliatives from which so much benefit has been anticipated in that disease, and so little permanent advantage gained.

We have now to notice that portion of Dr. Hastings' work which refers to the operation of making an incision into the vomica, in cases of advanced phthisis, and discharging its contents.

The grounds, upon which Dr. Hastings advocates this operation are the following. More than a hundred years ago, Dr. Barry recommended puncturing tubercular cavities as a means of curing phthisis, and published several successful cases as tending to confirm his views. Four of these are referred to by Dr. Hastings, but their details do not contain the slightest evidence that the patients suffered from phthisis. Dr. Hastings admits that "some of Barry's alleged cases of phthisis were merely empyema:"—the first and second quoted by him (pp. 233-34) evidently were; from what disease the other two patients (the soldiers) suffered, the details, as quoted, do not show. Sir Henry Marsh treated two cases upon this plan, in Dublin, about fifteen years ago: "In one," Dr. Hastings says, "complete recovery followed the operation:" he might have added that, in the other, it completely failed,—the patients surviving for some months, but, at length, dying from phthisical disorganisation of the other lung. In the second case, the patient, a little girl, was restored to excellent health. Sir H. Marsh, in his account of the first case, says, "All I can remember

of the dissection is, that in the right lung there were presented the thickened irregular walls of a large tubercular abscess nearly empty, the disease being absolutely limited to the superior third of the lung; whilst, in the left lung, the appearances were those of a recent and abundant deposition of tubercles. It will be observed that, in both these cases, the matter had begun to point externally, and this circumstance alone appears to have suggested the treatment adopted. Sir H. Marsh recommended puncture in one other case; but speaks of the instances of this kind as very rare, and nowhere expresses an opinion that the measure is generally applicable in cases of phthisis; "a year or two after these cases were operated on, Dr. Ramadge adopted the same method of treatment, and one out of the two patients so treated recovered; at least, he states the patient was perfectly well two years after the operation was performed." It would have been an important addition to this fact, had the author informed us whether Dr. Ramadge still continues to perform the operation of puncturing vomicae, and, if not, what were his reasons for abandoning it? Upon the encouragement afforded by these two successful, but not (in our view), by any means clear cases, the author has recently had recourse to this operation twice. In one of his cases the individual died fourteen days after the vomica was opened; in the other, the report appears to indicate that the patient's state was slightly improved at the end of four months after the operation, (the time at which the case was published) and that the author then entertained hopes of his recovery. Cases reported at such a stage of their progress as this last, may be interesting, and, if cautiously reasoned on, to a certain degree valuable; but surely the author cannot conceive that this incomplete case of phthisis—the progress of which has been watched for only four months subsequent to the operation, the patient still remaining with many of the worst symptoms of advanced tubercular disease—can possibly be received by any surgeon as a proof of the curative power of the operation. We much regret that Dr. Hastings should have published this part of his work in so incomplete a form: it remains still to be proved

whether the operation is calculated to be productive of any good results:—the scanty number of examples adduced by Dr. Hastings and its other advocates, do not appear to us to be at all in its favour; and none of the theoretical arguments upon which they recommend it would induce us to employ it in practice.*

Medical Intelligence.

THE "TIMES" ON THE NATIONAL ASSOCIATION 'AND THE FOURTH PHYSIC AND SURGERY BILL.

The bill for regulating the profession of physic and surgery, "as amended by the committee and on re-commitment," has made its appearance almost simultaneously with the second report by the deputation of general practitioners. On reading the two, that which first engages our attention is the discrepancy between the terms of the report and the provisions of the bill. The bill was ordered to be printed on the 28th of July, and the report is dated the 5th of August. We infer from these dates that the authors of the report had not seen the amendments introduced into the bill on its re-commitment, and consequently were somewhat in the dark, when they drew up that report, as to what Sir James Graham really intended to do with the bill. It is clear enough that if the deputation have not been mystified by the Home Secretary, the present bill will have to be very considerably altered before it is again laid before Parliament; for the clauses necessary to render the report any thing like a commentary on the bill are wholly omitted from it. We candidly confess that we do not like the conjoint appearance of these two documents. The report is a sort of laboured apology for giving way to the Colleges of Physicians and Surgeons; and though, if the newly-printed bill had

not accompanied it, one might have inferred from the terms of the report that the conditions of capitulation which the deputation mention had been actually agreed to by Sir James Graham; yet, as the report does not state directly that such was the fact, while the bill leads to an opposite inference, the unpleasant impression is produced that the deputation virtually surrendered at discretion.

The existing colleges made (according to the report) three objections to the scheme acceded to by the National Association. The first was to the name of the proposed new college. The College of Physicians declared against "general practitioners in *medicine*;" the College of Surgeons against general practitioners in *surgery*." The deputation, apparently convinced that "a rose by any other name would smell as sweet," agreed to drop the offensive designations, and stated, that "they would accept a charter of incorporation of the general practitioners by the title of THE ROYAL COLLEGE OF GENERAL PRACTITIONERS OF ENGLAND, the general practitioners being identified in the *charter* with the individual at present combining the legal qualifications of a surgeon and an apothecary." This title is accordingly adopted by the bill. Towards the close of the report an "arrangement" is mentioned, which "contemplates" that general practitioners shall become members of the College of Surgeons, with a right of access to the library of that College and the Hunterian Museum, and of using the title of surgeon; but no provision is made for this by the bill, so that it is left uncertain whether this arrangement was ever more than "contemplated." The second objection was to the power which had been claimed of appointing individuals to the examining board of the new college who were not members of that college; and on this point the deputation seem to have yielded immediately, and not only without the semblance of a struggle, but without even an excuse for giving up a point of so much importance to the efficiency of the new college. The third objection related to candidates for medical offices in the army and navy and in the colonial service.

These were the three objections on which, as they state, the deputation were at a late period of the discussion called upon to decide. Instead of confining themselves to these points, they went further, and gave up for the new college its right, to which the College of Surgeons had objected, "to be co-ordinate in professional rank and importance with the existing Colleges of Physicians and Surgeons." So far as existing general practitioners are concerned, this may be of but little importance. They may be registered in the supplemental register as

* Since writing the above, we have received a communication from Dr. Hastings, dated July 23d, which partly has reference to the above case, (the first report of which appeared in the *Gazette*, of Dec. 20th, 1844.) In this letter (see page 767) the author says, "although very weak, the patient has latterly been able to get out when the weather has been fine. His expectoration, for the last two or three months, has not averaged more than two drachms in the twenty-four hours." No further particulars of the case are given. Whatever may be the issue of this case, we still think that it was not well-judged in Dr. Hastings to give it a place in his work until the result was known. There can be no objection to the publication, in the journals, of remarkable cases at an early stage of their progress, with the understanding that further particulars will be given in due season; but, for obvious reasons, a report of a case the issue of which still remains uncertain, should not be allowed to appear, as a guide to practice, in a systematic work.

surgeons, which they now are, retaining as apothecaries, without being registered as such, all their existing privileges. Except so far as they may be ambitious of acquiring office of influence in the new college, they will have no inducement to become members of it; and as it is not to take equal rank with the existing colleges, it is probable that few besides the London general practitioners will care to belong to it. The fact of the contemplated arrangements, which, so far as they tell *against* the general practitioners, are carefully provided for by the bill, will be to make the new college a superior Apothecaries' Hall—superior to that Hall in many respects, but still a corporation which must be of a lower grade than that of either of the present colleges. Its utility may be great, and it may have the effect of raising the standard of general as well as professional education for its own members, and indirectly for the members of the other colleges; but its rivalry with them will be that of treading on their heels, and the *honourable* designation of its members will be acquired, not from their belonging to it, but from their being mere members of the College of Surgeons. The deputation state, that they assented to the modifications they announce on the understanding that the power was reserved to them of withdrawing such assent if they were not agreed to as a whole by other parties. We cannot, of course, ascertain the secret intentions of the other parties; but it is ominous that the bill contains no provisions for such of the contemplated arrangements as tell *in favour* of the general practitioners; and as the report announces that the deputation were precluded of all hope of the bills being carried without their giving way on a point not mentioned as one of the three objections on which they were required to make up their minds, the reservation to themselves of the power to withdraw their assent seems little better than a matter of form. When a bait is bitten at, the biter invariably reserves to himself, though he may fail to express it, the fullest right to withdraw his head before the trap falls; and, so far as intention is concerned, it is no fault of his that he finds himself no longer a free agent. We suspect that the deputation were a little too eager to get the new college, for they agreed to give the precedence to the examination of general practitioners by the joint board of physicians and surgeons, "in the full hope that their assent to this modification would have enabled the SECRETARY of STATE to have perfected his measure during the present session of Parliament." Now that this hope has been proved to be fallacious, the best thing that they can do will be to draw their heads out of the trap as quickly as possible, and to stand again, if they can, on

the ground which they have conditionally abandoned. The London general practitioners may be satisfied with the modifications agreed to by the deputation; but to the country surgeons they will be much less acceptable. We believe that the deputation have acted throughout with good faith; but it is impossible not to suspect the correctness of their judgment. We give them the fullest credit for honesty of motive and purity of intention, but we think that they have been, unconsciously, somewhat unfortunately biassed by their anxiety to secure a charter of incorporation for the general practitioners. Such a charter they were promised, and while they showed a determination to be righted as surgeons, they found Sir James Graham squeezable. The Council of the College of Surgeons had placed themselves almost at their mercy, and if the National Association had resolved to insist on a full measure of justice, they might have depended on eventually obtaining it. Now that they have entered into a parley for the sake of getting a charter at once, they find that they have given without taking; they have abandoned their vantage ground without having obtained the *quid pro quo* for which they yielded it. They are in a false position, and the sooner they can rectify their error the better. We must postpone to another opportunity our remarks on the consequences of the modifications agreed to as regards the status of future general practitioners, as well as some observations we shall have to make on the re-amended bill. Let the general practitioners be true to themselves, insisting on their rights as surgeons, and refusing to be regarded as mere apothecaries, and they need not despair of succeeding in gaining a full measure of justice. The present bill affords an agreeable contrast to the one which lay on our table this time twelvemonth; and up to the last few weeks everything has been most encouraging to them. Union, steady perseverance, and firm resolve to win the battle, are alone wanted to insure them that victory which justice must award them.

OBITUARY.

DIED of phthisis, on the 12th instant, at Chasewater, Cornwall, Dr. Edward Octavius Hocken, one of the physicians to the Blenheim Street Infirmary and Free Dispensary. Dr. Hocken, although cut off at a very early age, had made himself well known to the profession by his numerous writings, among which were, a "Treatise on Amaurosis and Amaurotic Affections," and the first part of a "Practical Treatise on Ophthalmic Medicine." Dr. Hocken's literary productions indicated a spirit of indefatigable industry, and several of them possess considerable merit.

Correspondence.

ON M. MAISONNEUVE'S METHOD OF EMPLOYING THE CATHETER.

SIR,—In the number of the *MEDICAL GAZETTE* for Aug. 1st, I notice the translation of a paper of M. Maisonneuve, on a new method of catheterism; and in the same paper is a claim by M. Guillon, asserting he had preceded M. Maisonneuve in the supposed novel practice. But if priority in practising the method alluded to were worth contending for, the gentlemen named must yield the palm to me, as I followed virtually the same plan sixteen or seventeen years ago in the following case,—have often used it since,—have mentioned it to many professional friends,—and have for several years described it in my lectures, while neither M. Maisonneuve nor M. Guillon have employed it longer than seven or eight years; but, in reality, in this view, the subject is not worth dwelling on.

1828.—A. P., a man aged 60, has retention of urine. Introduction of any kind of catheter is accomplished with the utmost difficulty. A long time is required; severe pain is suffered; every manœuvre is exhausted; failure is feared; hæmorrhage to a hurtful extent occurs; when, *at last*, the instrument slips in. Five or six days elapse, and prudence calls for withdrawal of the catheter, which is found to be attended with much trouble and suffering, in consequence of copious deposition of large rough crystals of phosphate of lime on the instrument. Replacement of the catheter was found an onerous task, seemingly in consequence of tortuosity of the canal from an enlarged and fungoid prostate; when I bethought myself of the following plan, and by it was afterwards able with the greatest facility, and with comparative exemption from pain, in a few minutes to effect my object.

I took a flexible catheter, with the point cut off, and as a substitute for the point, put into the catheter a brass wire, three times longer than the catheter, and with a small button of tin deposited on one of its extremities; so that when the wire was introduced into the catheter, the little button projected, and occupied exactly the place of the cut off point of the instrument. The instrument thus prepared, once introduced, enabled me to replace another with the utmost ease. I had only to push the formerly described wire into the bladder, through the catheter from which the point had been cut off; withdraw the catheter over the long wire, leaving the latter in the bladder; and then slip a similarly prepared catheter over the external extremity of the wire, which keeping the canal straight, and

guiding the catheter, it ran along the wire, and readily glided into the bladder. So well did this method answer, that in a short time a son of the patient performed all the requisite manipulations.

Wherever the catheter requires to be frequently re-introduced, or retained, then, by leaving the wire as described, the prepared catheter is conducted into the bladder without difficulty, an important matter where such an obstacle exists as in the instance detailed, or where a false passage is present; and particularly in a patient, who, from distance from the surgeon, or other causes, is obliged to pass the instrument himself, or have it done by some unprofessional assistant. The principle is similar in M. Maisonneuve's method and mine, but the details are slightly different.

The method is equally admissible with a properly prepared metallic as with a flexible catheter.—I am, Sir,

Yours most respectfully,

W. LYON.

Glasgow, August 9th, 1845.

APPENDIX TO MR. OATES'S PAPER ON COPAIBA INJECTIONS.

By way of postscript to the remarks I made in your journal of the 23d inst. on the use of injections of copaiba in gonorrhœa, I would suggest the following form, which, in a case lately under treatment, appeared to have considerable control over the discharge, although it was not relied upon exclusively. I suspend 3ij. of the essential oil of copaiba in about a pint of distilled water, by means of a little carbonate of magnesia, and filter through paper, as in the usual extemporaneous way of preparing the essential waters; and I have no doubt that copaiba exists very nearly in this state in the urine of persons under the influence of this medicine;—assuming which, and arguing upon the case I recorded last week, this form of injection appeared *à priori* to be all that was requisite; it is very agreeable in odour, may be made of various strength, and of course should be used frequently, and I have no doubt it will be found serviceable in gonorrhœal affections of both sexes. It will be my care to test further its utility and value as a therapeutical agent, compared with others, in these cases, when I shall report the result.

PROGNOSIS IN PSOAS ABSCESS.

THE prognosis of psos abscess is very bad; not one patient out of fifty recovers of it. I am sure in the course of my practice I have not known five cases in all recover. I never knew a case get well where a surgeon interfered at all with it.—*Professor Colles's Lectures.*

Selections from Journals.

CASE OF TRANSPOSITION OF THE HEART, STOMACH, LIVER, AND SPLEEN—RUPTURE OF THE RIGHT AURICLE OF THE HEART.

DR. LOGAN, in the New Orleans Medical Journal, relates a case under this title, which has been quoted in the Philadelphia Medical Examiner.

The subject of the case, a negro slave, about 25 years of age, of strong muscular development, had frequently come under the writer's care during the last nine or ten years, for diseases incident to the climate. His appetite was always good, and even voracious, and "he was accused by several of dirt-eating, which was rendered extremely probable by the dark gritty matter which he sometimes voided by stool." On every occasion on which he presented himself, the author was struck by a remarkable pulsation on the right side of the chest, while there was no pulsation in the cardiac region of the left side. In October last the patient laboured under intermittent fever, which was prevalent at the time, and presented nothing unusual. He died suddenly on the termination of a paroxysm.

Post-mortem appearances.—The liver occupied the left side, its large lobe extending over to the right; its colour and texture were natural. The stomach occupied the right hypochondrium, its pyloric orifice being directed to the left side. The spleen also was upon the right side; it was small, and divided into four parts, which were connected together by cellular tissue. The other viscera of the abdomen occupied their normal position. The heart occupied the right side; the manner in which the large vessels came off from it (the point of most interest in the case) is not stated. Death had been occasioned by rupture of the right auricle. Extensive adhesion existed between the heart and pericardium.—*Dublin Medical Press.*

LUPUS EXEDENS.

MR. LISTON says that local treatment can alone be depended on in this disease. He thinks chloride of zinc the best application; it is to be mixed dry with an equal quantity of flour, and then moistened with a little water. When of the consistence of bird-lime, it may be spread on some lint; but the better plan is to put it on a spatula, dip your finger in water, and then lay it on with accuracy round the sore, and then over the whole of it. It subjects the patient to some pain, but that ceases after a time, and the paste becomes elevated at the edges. You will then find an extensive slough has formed; and immediately that separates,

instead of the old eating ulcer, you have substituted a healthy granulating surface, the part furnishes good matter, and there is soon the commencement of cicatrization all around. The surface is then poulticed to remove the scabs; and if, subsequently, any portion should continue to present an unhealthy aspect, the cauterization ought to be repeated.—*Dublin Hospital Gazette.*

OPHTHALMIC SURGERY.

EFFECTS OF BELLADONNA ON THE IRIS.

DR. MARTIN, of Portlaw, and Dr. Jacob, have found that the influence of the extract of belladonna on the pupil remains undiminished after the continuance of its application, even for a series of years, its effects being as manifest after half a dozen years' application as the day it was commenced. By its employment, Dr. Jacob has afforded a very useful amount of vision to persons who had extensive opacities of the cornea. In cases where the operation for artificial pupil would be a matter of risk, the daily use of the extract is a remedy of great value. He also finds it useful in central opacities of the lens and its capsule. A lady had come to have an operation performed who had distinct white cataracts in both eyes, and having applied the belladonna he called on her next morning for the purpose of performing the operation, and found her looking out of the window. The lens, in that case, was perfectly transparent round the central nucleus. She lived a long time after, and could see very satisfactorily by means of the continued use of the belladonna, and without the operation. As to the mode of using the belladonna, he thinks the most convenient method is that of solution, the extract being rubbed down in such quantity as to allow all the heavier and insoluble matter to fall to the bottom; a little spirit must then be added to remove any coagulable matter, and to prevent the solution from spoiling. A very small quantity dropped into the eye would dilate the pupil, though it is the custom with many to waste a large quantity in daubing the eyelid or brow, which is quite unnecessary, except in cases where an inflammatory condition of the conjunctiva exists to prevent its internal application.—*Dublin Medical Press.*

[The above facts, although of much interest and value, have long been familiar to many surgeons. In 1822, Dr. Ninian Hill made a communication on the same subject to the Medico-Chirurgical Society of Dumfries, relating the case of a young lady, with capsulo-lenticular cataract in both eyes, the consequence of an attack of purulent ophthalmia in infancy. The margins of both lenses were nearly transparent. She had used the belladonna for eight years, and was

disposed to think that it strengthened her sight, and that its powers had rather increased. But this Dr. H. attributed to her having acquired greater dexterity in the application. She applied a solution of the extract four times a day, at each time dropping two drops from a quill upon the ball of the eye, and its effects commenced in half an hour from its application. She then depended so much upon it that she never left her bed-room till the pupil was dilated. The belladonna was at first applied with the view of examining the state of the lens; the effect was so powerful that she was perfectly satisfied, and declined an operation. Dr. Hill mentions that, unlike other narcotics, belladonna does not lose its power after repeated use. It is also stated in Dr. Hill's communication, that charlatans at that time availed themselves successfully of this property of belladonna, and that the itinerant oculist, Mr. Williams, was in the habit of using it indiscriminately.—*Edinburgh Med. and Surg. Journal*, Vol. 18, p. 845.]

MIDWIFERY.

CASE OF SEPARATION OF THE CERVIX UTERI. BY WM. TURNER REARDON, M.D. OF TIPPERARY.

THE author records this case on account of its being similar to a case, by Dr. A. Davis, published in a late number of the *Dublin Medical Press*, and quoted in the *GAZETTE* a short time since (p. 944). Dr. Reardon attended a young lady in confinement of her first child. He found her in the second stage of difficult and very active labour, with great bearing-down effort. On examination, he found the soft parts dilated to the size of a crown-piece, morbidly rigid, and tightly expanded over the head, which was presenting. Under these unfavourable circumstances, and finding that she had then been twenty-four hours in fruitless labour, and knowing that there was little or no likelihood of the os uteri ever dilating more, Dr. R. suggested to the medical man with whom he attended, that two or three incisions should be carefully made through the os up to the cervix uteri, with a bistoury, as recommended by Burns, in his work on Midwifery; but this was not acted upon. Belladonna was applied locally, nauseating medicines and anodynes used, anodyne enemata, and every other palliative treatment substituted, without (as may be anticipated) any real benefit. Labour began to cease, the woman to sink, delirium, with difficult breathing set in, the os uteri not being dilated or dilatable for some hours before; the perforator was then used, and the head lessened in utero. Under the expectation that it would come away, powerful traction was used, and continued steadily for a long

time; still no advance, when suddenly the foetus came away with the placenta, as in ordinary cases.

When the crotchet was being laid out of the hand, Dr. R. observed something attached to it. This he put aside for examination at some more suitable time. There was profuse hæmorrhage, which, by pressing down the uterus by a pad, a tight binder, &c., was arrested. The substance which came away with the instrument was found to be the os uteri, and a circumference of, at least, two inches all round about from the inner edge of the os, measuring five inches across. The os was found to be incapable of further dilatation. Considerable inflammation and abdominal tenderness followed, more particularly over the uterine region, which yielded to general and local treatment. After two months, on examination, the uterus gave the feel of being puckered up, forming an orifice as if a ligature was passed around it one-fourth or half an inch above. She has menstruated once since the accident. Her general health became as good as ever.—*Dublin Medical Press*.

THERAPEUTICS.

ARSENIC IN ASCITES.

DR. CORMACK believes that when ascites depends upon hepatic or splenic congestion, much benefit will be derived from the administration of small doses of arsenic. He recommends that the dose should not, at first, exceed the sixteenth or twentieth part of a grain; that this should be taken in not less than four ounces of water, and with an empty stomach. The dose should be repeated four or six times—not seldomer—in twenty-four hours. In skin diseases, intermittent fevers, enlarged spleen from intermittent fever, and indeed in every case in which arsenic is known to have specific effects, Dr. C. recommends that it should be given in the method above mentioned; and advises that all other drugs should, if at all possible, be suspended during its administration. In old cases of enlarged spleen and liver, the cure has been hastened by the use of a succession of blisters.—*London and Edinburgh Monthly Journal*.

SUBSTITUTE FOR ALCOHOL IN THE PRESERVATION OF ANATOMICAL PREPARATIONS.

MR. GOADBY has recommended the following solution:—

Of Bay salt	. .	4 oz.
Alum	. .	2 oz.
Corrosive sublimate	. .	2 grains.
Water	. .	1 quart.

It appears to be an economical and useful substitute for alcohol. We have kept in this mixture an egg deprived of its shell by acetic acid, and a piece of muscle, for six months. They have not undergone the least change.

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURE

ON

CASES OF NERVOUS IRRITATION,

Delivered at St. Bartholomew's Hospital,

By DR. GEORGE BURROWS,

July, 1845.

You will find in my wards several cases, examples of that kind of disturbance of the nervous centres which is called nervous irritation. Nothing is more natural, or more common, than for students to suppose that if symptoms of disturbance of the nervous centres are present, that structural changes are going forward in those masses; and, as inflammation is the most frequent cause of structural lesions, so is this process often suspected to exist, when in reality nothing of the kind is present. We are, and have long been, in the habit of describing disorders of the nervous centres as idiopathic or sympathetic; or, as Dr. Marshall Hall has very aptly termed them, cases of centric or ex-centric irritation. Now, I wish upon the present occasion to direct your attention to a series of cases, which have recently been under your observation, and which will impress upon your minds the fact that symptoms of nervous irritation more frequently arise from the latter than the former kind of morbid action. Perhaps chorea and delirium tremens offer some of the best examples of genuine nervous irritation, and it will be from cases of this description that I shall seek for illustration of this subject.

CASE I.—*Chorea occurring during pregnancy, and terminating fatally. Post-mortem examination.*

Sarah T—, aged 18, was admitted June 19th, 1845, into Faith Ward. She was a pale, delicate-looking female, of dark complexion, and was affected with constant twitchings of the muscles of the face, together with convulsive writhings and contortions of the muscles of the whole body, especially those of the upper extremities; one side was not more affected than the other; she was in no pain, but distressed at her condition. Her tongue thickly coated, and moist; when protruded it was suddenly withdrawn. Pulse 80, soft, and feeble; skin warm and moist; bowels confined; urine free.

From her history it was learnt that she had naturally a feeble constitution, and was frequently out of health, and that latterly she had been much distressed in mind. She

married when only sixteen years of age, and about sixteen months ago she was delivered of her first child. She was properly attended during her labour, which was perfectly natural, and she was speedily restored to health. Of late she has been troubled with headaches, and disturbed nights, having difficulty in procuring sleep. Three days before admission she first perceived a kind of numbness in one of her feet, and she was observed to have some difficulty in walking, to drag this foot, and to be somewhat unsteady in her gait. These appearances rapidly increased; she passed restless nights, rambling and tossing about in her sleep, and very shortly the convulsive movements became fully established, occasionally being so violent as to render it necessary to restrain her in bed. She was ordered—

Hyd. Chlor. gr. ij.; c. Extr. Coloc. Co. gr. viij. Ft. Pil. ij. statim sumendæ.
Capiat Tinct. Ferri Sesquichlor. ℥xx. ex Mist. Camph. ʒj. ter die.

June 20th.—She had scarcely any sleep during the night, the convulsive movements of the body being almost constant, and it was frequently difficult to keep her in bed. She appears much excited, and there is no diminution in the frequency or violence of the convulsions since yesterday. Bowels have not been relieved; tongue much furred, moist.

Ol. Ricini, ʒvj. statim. To have 4 ounces of wine, and a pound of beef for beef-tea, and to continue her mixture.

June 21st.—She is more quiet, and improved in other respects, having slept soundly for several hours during the night. Her bowels have been freely opened four times; the first evacuation consisted of hard fecal matter, the others were liquid, and dark coloured. Tongue still furred. Pulse 90, soft and feeble. She relished her wine and beef-tea, which, with her mixture, were ordered to be continued.

June 22d.—She passed a very disturbed, sleepless night, screaming out, and being with difficulty kept in bed, owing to the violence of the convulsive movements. She is more excited, and appears decidedly worse. Her lips are dry, and fringed with sordes. Tongue much furred. Pulse small and feeble, cannot be counted, owing to her constant tossing about. Bowels not moved again. She occasionally refuses her wine and medicines. Ordered—

Sp. Æther. Sulph. Co. ʒss. cum Tinct. Opii, ℥xx. Ex Mist. Camph. ʒj. 4tis horis. To take wine and beef-tea as before.

June 23d, 9 A.M.—She was very violent all night, and is now restless and almost in-

coherent, refusing to take her medicine. She continued in this state through the day, being occasionally more quiet, and dozing a little. Towards evening, her bowels not having been opened, she was ordered some calomel and jalap, and to continue her mixture.

24th.—Was violent during the night, but had a little broken sleep at times. She appears quite exhausted; cannot protrude her tongue. Her pulse is small and feeble, ranging between 140 and 170. Bowels have not been opened.

Being somewhat drowsy, and the pupils contracted, the tincture of opium was omitted, the ether and camphor being given alone. Twelve ounces of wine were ordered; also a common enema.

8 P.M.—A copious evacuation succeeded the administration of the enema, but no improvement of the symptoms resulted. She remained in the same apparently exhausted state through the day, occasionally rousing up, and being excited for a few moments, and then relapsing into her former condition. She died between nine and ten the same evening.

Examination of the body fourteen hours after death.—Limbs generally rigid. Substance of brain quite firm and healthy; bloody points unusually numerous. Substance of spinal cord also firm and healthy. Lungs congested with blood and serum posteriorly, otherwise healthy. Heart firmly contracted. Valves healthy and efficient. Pericardium and pleura healthy. Abdominal viscera generally quite healthy. Left ovary quite large, containing a very large corpus luteum. Fallopian tube of this side much congested. Right ovary healthy. The uterus was about the size of a large pear, and contained a foetus of the second month. The blood was generally fluid, except in the right cavities of the heart, where it was coagulated, but not separated: the parts with which the coagulum was in contact were stained.

REMARKS.—Although the violent and uncontrollable action of the voluntary muscles in this poor young woman, together with the incoherence and wandering, indicated serious disturbance of the functions of the spinal cord and brain, nevertheless a most careful dissection displayed no structural changes in the nervous masses, which could be regarded as adequate to explain the symptoms or the cause of death. We must look for the causes of nervous irritation elsewhere, and we find them without difficulty. This young woman had married at the early age of sixteen years; she had given birth to one child, and was again pregnant, although only eighteen years old; she had suffered from protracted domestic anxiety, and was

naturally of a feeble constitution. It is most important that you should understand that the irritation of utero-gestation as well as actual uterine disease will in susceptible habits give rise to anomalous pains in different parts of the body, as well as to other striking symptoms of nervous irritation. You had a most instructive example of the truth of this proposition in the foregoing case. It is not common for cases of chorea to terminate fatally, and when they do it is generally from exhaustion, and such was the mode of death in this patient.

Dr. R. Bright has related (Medical Reports) a fatal case of chorea, where considerable disease of the uterus and its appendages was discovered after death. Dr. Watson also adverts (Lectures on Practice of Physic) to a case of chorea, which terminated fatally in the Middlesex Hospital, and where the uterus was found intensely congested. It would thus appear that uterine congestion and uterine disease may excite that disturbance of the nervous centres which we call chorea. In reviewing the treatment of the foregoing case, I cannot suppose that another plan would have been attended with a happier result. I have already said that this woman sunk from exhaustion, which was mainly induced by the violence of the spasms preventing sleep; but her death was undoubtedly accelerated by her reluctance, and sometimes positive refusal, to take the remedies prescribed for her.

CASE II.—*Chorea occurring during pregnancy—Rapid improvement.*

A delicate young married woman was admitted into my ward a few weeks since suffering from the most violent chorea, so that it was with difficulty she was prevented from jerking herself off the bed. She was in the sixth month of her pregnancy: the placental murmur as well as the sounds of the foetal heart were plainly audible through the stethoscope applied to the iliac regions. The severe and nearly constant pains in her limbs, as well as the irregular and violent spasms, entirely prevented sleep. She was much dejected in spirits, and very weak. This woman's peculiar condition appeared to forbid the employment of those remedies which are often so successful in the treatment of chorea; I mean, a combination of preparations of iron, of purgatives, and the shower-bath. I prescribed frequently repeated doses of morphia and camphor, with stimulants, and a nutritious diet. Sleep, and a mitigation of the spasms, were procured by these remedies; her condition was so much improved in the course of a week that she was able to be dressed and sit up by the side of her bed. At this stage of her convalescence she became impatient to return home, where she had causes of

anxiety, and she left the hospital before her cure was completed.

CASE III.—Chorea occurring in the course of lactation—Rapid improvement.

A young married woman was admitted into the same ward in the month of May, suffering under the ordinary symptoms of chorea. She had been suckling her first child for some months, but had been obliged to wean it on account of the present attack of chorea. She informed me that she had been under my care for the same complaint about four years ago, and it then lasted for four months. I here supposed that the nervous system was brought into a state of excessive irritability by the exhaustion consequent upon suckling. The patient was treated on the present occasion with preparations of iron, purgatives, the shower-bath, and good diet. She rapidly improved, and returned to her domestic duties almost cured at the expiration of three weeks from her admission into the hospital.

Each of the foregoing cases is worthy of your remembrance. Chorea usually appears at a much earlier age, generally before puberty, and we frequently are unable to trace the attack to any exciting cause. In each of these young women the nervous symptoms apparently were excited by the irritation of pregnancy, or its consequences, and were altogether independent of structural changes in the brain and spinal cord.

I will next direct your attention to another example of nervous irritation, but where the symptoms indicated disturbance of the cerebral and not the spinal functions.

CASE IV.—Delirium tremens (not traumatic) occurring in a female—Recovery.

Ann H—n, æt. forty-five, was admitted into Faith Ward, on June 19th, 1845. She is a large, fat woman, with a bloated face; appears excited, wanders occasionally, and fancies the bed is in motion, and that she is going to die; she complains of vertigo and pain in the head; the forehead is hot as well as the skin of the body; her nights have been disturbed by delirium; pulse 100, full, rather hard; tongue furred on the dorsum; bowels open; the nape of the neck is sore from a blister which was applied two days ago.

Nothing further was elicited concerning this patient's illness at the time of the visit, partly on account of her excited manner, and partly on account of the absence of her friends. I prescribed

Cucurb. Cruentæ nuchæ ad ʒviiij.;
Haust. Sodæ Tart. Efferves. 6tis
horis. Diet of milk and farinaceous
food.

21st.—She was very restless during the night, and could scarcely be kept in her bed,

but is more collected this morning; the cupping has removed the pain in the head; she sees bright spots and different figures floating in the air; skin profusely perspiring; pulse 96, rather full, but easily compressed; tongue furred, not tremulous.

In the interval between the visits the following additional particulars of her history had been obtained from her husband. She is a woman of very irregular habits, has drank large quantities of gin formerly, but latterly has taken more beer. She has had delirium tremens four times, and has frequently been so violent that it was necessary to employ much force to keep her in bed; her limbs occasionally tremble so much that she can scarcely walk. Her appetite is always bad; she has had no children, and the catamenia have ceased for four years.

This information left us in no doubt as to the real nature of her present attack, which was a recurrence of the complaint under which she had already laboured—delirium tremens. We now regretted that the cupping had been prescribed upon the former occasion, and attributed the accession of her more violent symptoms of delirium on the preceding night to the abstraction of blood. We were led into this error of treatment partly from the causes already mentioned, and partly from the extreme rarity of idiopathic delirium tremens in the female. While chorea and other examples of spinal irritation are much more frequent in the female than the male, this variety of nervous irritation, delirium tremens, occurs in its idiopathic form almost exclusively among men. This is a remarkable peculiarity in the susceptibility of the different parts of the nervous system in the two sexes. There are undoubtedly numbers of unfortunate females in this metropolis who by their profligacy and intemperance are fully entitled to suffer from delirium tremens, and nevertheless they escape, while the hard-working mechanic, who habitually indulges in the abuse of fermented liquors, is almost sure to be attacked. The patient was now ordered,

Pil. Saponis cum Opio, gr. x. statim et
hac nocte sumenda.

℞ Sp. Æth. Sulph. Comp. ℥xx. Tinct.
Opii, ℥x. Mist. Camphoræ, ʒiss.; Ft.
haustus, 4ta quaque horâ sumen. Ani-
mal food and some beer for diet.

22nd.—She became noisy, and got out of bed last night; Tinct. Opii ℥xx. were given, and repeated after a few hours, in addition to the opium pills; she fell asleep, but was awake by another noisy patient, when she became very excited, and was obliged to be strapped down in bed. She continues excited in manner this morning

but answers rationally; profuse perspirations; pulse 80, rather full, but soft; tongue covered with a brown dry fur; bowels not open. She was ordered to take one grain of opium every fourth hour, to continue the Ether draught, and to have ℥viij. of port wine with water daily.

23d.—She passed a quiet night, and is much more calm this morning; she feels better since she has taken the wine; perspiration less; tongue cleaner; pulse more natural. The opium pill was now given only twice in the twenty-four hours, and the draughts and wine continued.

From this date the case progressed favourably, and the woman left the hospital convalescent at the expiration of another fortnight.

In its symptoms and in the treatment this case offers nothing further worthy of remark. In this large hospital you will have frequent opportunities of witnessing the same phenomena. The foregoing cases of nervous irritation may be advantageously contrasted with the following case, which was admitted at the same date, and which presents well-marked symptoms of spinal irritation from structural lesions of the spinal cord.

CASE V.—Chas. Henry M—, aged 14, admitted June 19th, 1845; an errand-boy, tall and much emaciated; of feeble general health.

He lies on his back, quite motionless, unable to turn his head or bend his neck; any attempt to do which causes intense pain in the cervical spine. He has constant pain in both arms, with occasional violent spasmodic movements in them, by which the limbs are drawn behind his back and can be with difficulty returned. There is complete loss of power of motion in both arms, with considerable loss of sensation, especially of the right; reflex movements can be excited in both by pinching. He has pains, with partial loss of motive power, and frequent spasmodic movements, in both lower extremities; sensation perfect; reflex movements can be excited in them by pinching. The sensibility of the surface of the trunk is moderately acute, the slightest touch producing pain. He has partial loss of power over the bladder, the urine occasionally escaping involuntarily; perfect command over the rectum. Speech, vision, hearing, and intellectual faculties, are unimpaired. He has severe pains at the back of the head and neck, with considerable tenderness on pressure over all the cervical, and several of the upper dorsal vertebræ; this tenderness is most marked over the lower cervical and upper dorsal ones.

He complains of pain in the præcordial region, increased by inspiration; palpi-

tions of a fortnight's duration; respiration is hurried and laborious; he has no cough. Upon ausculting in the cardiac region a loud rather harsh systolic bellows-murmur was audible at the apex of the heart, becoming fainter as it was traced up to the base; where it was heard slightly.

From his history it was ascertained that about four months ago he was suddenly attacked with pains and swellings in both his feet and ankles, the attack being preceded by shivering and loss of appetite; in the course of a week his knees, wrists, and elbows, became successively affected with pain and swelling. This affection subsided in about three weeks, and he was enabled to return to his employment, at which he continued for two months; ailing nothing, beyond a slight stiffness in his neck, which continued from that time. About a month ago the stiffness in his neck increased, accompanied with pain; at this time there was a return of pain in the hands and arms, together with a partial loss of power and of sensation in them; this was followed in about three days with pains and loss of power in the lower extremities also. These various symptoms gradually became more marked until they attained the degree presented on admission. Beyond purgatives no treatment has been adopted either in this or the previous attack.

On admission his tongue was slightly furred, but quite moist. Pulse 92, small and weak; skin hot and moist; bowels freely open from medicine; urine free, occasionally passed involuntarily; appetite good, no thirst.

REMARKS.—The diagnosis of the seat of disease in this case could hardly be mistaken; every symptom pointed to the cervical and upper dorsal portion of the spinal cord as the affected parts, and from the perfect integrity of the sensorial functions it seemed as if the brain were exempt from morbid action. But what was the nature of the affection of the spinal cord? Obviously very different to that in the cases of chorea which I have detailed. In this case there is centric irritation, a morbid action going forward in the spinal cord and its membranes; and here let me impart to you a suspicion I entertained shortly after his admission, that this morbid action was rheumatic in its origin. The mode in which the boy's illness commenced, viz. with painful swellings of the joints of the lower and subsequently of the upper extremities; the occurrence of pain in the right hip, which was aggravated by pressure and by motion, two days after his admission; the existence of palpitation and pain in the præcordial region, and the detection of a harsh systolic murmur at the apex of the heart,—these latter being as you know the

usual symptoms of endocarditis, and that this cardiac affection is almost invariably of rheumatic origin—all these circumstances taken into consideration in connection with the age of the patient, and his occupation, (an errand-boy) justified me in entertaining a hope that the spinal affection was of rheumatic origin. If my conjecture should prove correct the prognosis of this case is much more favourable than if ordinary inflammation, or some more serious morbid action, had been going on within the spinal canal for so long a period as two months, uncontrolled by suitable treatment. If the disease be rheumatic, it will probably be confined to the meninges of the cord; if it be ordinary chronic inflammation, the cord will probably be implicated, and perhaps partially disorganised; if the morbid action be more specific, as scrofulous, there will be little chance of ultimate recovery. I determined to give the lad the chances of treatment founded on my conjecture, and ordered—

Cucurb. Cruentæ nuchæ ad. ʒvj. Hydrarg. Chlor. grs. ij. cum Pulv. Opii. grs. ¼. 6tis. horis. Milk and farinaceous food.

20th.—The pains in the head, neck, arms, and legs, were all relieved after the cupping, and he has had no return of the spasmodic movements; he passed a more comfortable night than he has done for some time. The impairment of sensation and motion in the upper and lower extremities remains unaltered. He has passed his urine this morning voluntarily. Bowels confined; pulse 92, small; respirations less laborious than yesterday, but the inspiration is still performed by the auxiliary respiratory muscles.

Ordered—Haust. Sennæ stim.; Ung. Hydrarg. Fort. ʒj. inguinibus infricand. omni nocte; Perstet Pilul. 6tis. capilli secantur.

21st.—Slept well. Is free from pain in the neck, arms, and legs, but severe pain has come on in the right hip-joint, which is aggravated by attempts at movement, or by pressure. He is able to move the right forearm a little. There is morbidly increased sensibility of the surface over the left side of the face and trunk, the left arm and leg. Bowels still confined. Urine passed voluntarily. Respirations much less laborious and hurried. The characters of the systolic murmur of the heart remain the same.

Enema commune statim. Perstent Pil. et. Ung. Hyd. Fort.; Empl. Canth. Nuchæ.

23d.—Slept well. Had pain, with involuntary movements, in the right arm this morning, but with this exception he is quite free from pain; that of the right hip has dis-

appeared. Sensation and power of motion in the right arm much improved, so that he is able now to move this hand, and to flex the fingers. Bowels only scantily opened. Urine passed voluntarily only once daily. Tongue moist, thickly furred; gums spongy. Pulse 96, small. Blistered surface discharges freely.

Enema commune vespere; Perstent Pil. et Ung. Hyd. Fort.

26th.—Sleeps well, and is quite free from pain. No change in the power of motion and sensation of the limbs. The morbid sensibility of the left side continues. In other respects he is the same. The systolic murmur continues harsh at the apex, and is, occasionally, a musical note.

Perstet. Ung. Hyd. Fort.; Capt. Pil. omni nocte.

28th.—Is quite free from pain and spasmodic movement. Sensation and power of motion greatly improved. Morbid sensibility of the surface of left side continues. Urine passed voluntarily; some difficulty experienced in retaining it. Gums tender. Respirations improved.

Radatur Caput.; Emp. Canth. pone aures; Pt. Pil. omni nocte.

July 16th.—There has been a gradual improvement; he is now entirely free from pain or spasmodic movements; he can move his head without pain, and turn himself round in bed; he also readily bends and extends his legs; his power over his right arm and hand is considerable, so that he can sometimes partly feed himself. The left arm is still very feeble, although he can raise it to his head slowly. There is still an increased sensibility of the integuments of the left side of the thorax, especially in the cardiac region; the systolic cardiac murmur remains, but less intense. His aspect is much improved; his respiration is natural; mouth affected slightly by mercury; appetite good, and bowels more regular; he sleeps well.

The mercurial inunction is discontinued, but the calomel-pill is given every night.

LUTES FOR CHEMICAL PURPOSES.

1. Plaster of Paris added to water, milk, glue, or thick starch. This will support a dull red heat. The lutes with starch and glue are rendered quite impermeable by covering them with oil, or a mixture of wax and oil, when thoroughly dry.

2. Linseed meal, with a solution of starch or glue, or in common lime water, will stand a heat of about 300°.

3. Equal parts of white lead and plaster of Paris, of a pasty consistency, will form a lute that will stand a very high temperature. —*Berthier*.

CLINICAL LECTURE

ON

DISEASES OF THE TONGUE,

Delivered at St. Bartholomew's Hospital,

By W. LAWRENCE, Esq. F.R.S. &c.

[Concluded from p. 709.]

CASE I.—*Scirrhus of the tongue in an early stage excision; permanent cure(?)*

ANNE FEATHERSTONE, æt. fifty-eight, a person of spare habit and delicate constitution, who had never suffered from any particular illness, noticed, about five months ago, a small hard tumor, unattended with pain, in the substance of the tongue, about the middle of its left margin. She attributed it to the irritation of a carious tooth; which was forthwith removed. The tumor, however, continued to enlarge, and she was admitted into the hospital.

December 27th, 1843.—There is a tumor in the substance of the tongue on its left margin about the size and shape of a large horse-bean, of which one half projects on the surface of the organ. It is hard, but free from pain; there is a small and quite superficial ulceration on the prominent part.

January 12th.—The diseased part was removed. The apex of the tongue being held by an assistant, I took firm hold of the part, by passing the double-hooked forceps through the healthy substance beyond the base of the tumor, and then effected the separation by a single sweep of the instrument. There was considerable hæmorrhage, which was arrested by cold applications and alum gargle; we could not secure any arterics by ligature.

The portion removed was the size of a nut; very similar in colour and consistence to a scirrhus portion of mammary gland, but less hard and tough. The muscular substance taken away with the disease was perfectly healthy.

The wound healed favourably, the patient left the hospital well, and she continues so to the present time.

CASE II.—*Cancer of the tongue in an early stage; removal of the part by ligature; return of the disease.*

Anne Watson, æt. fifty-three, married, mother of twelve children, a person of sallow complexion, but who has had good general health, was admitted into this hospital March 12th, 1844. She had observed, about fifteen months ago, a small tubercle, about the size of a barley-corn, hard but unattended with pain, in the substance of the tongue near its right margin; it enlarged slowly for twelve months, when the mucous

membrane covering it began to ulcerate. There is a hard tumor, about twice as large as in the preceding instance, in the substance of the tongue, on its right margin, about midway between the apex and basis; upon its surface is a superficial ulcer the size of a sixpence. Behind the right angle of the jaw is an enlarged gland the size of a filbert. General health good; catamenia regular.

March 23d.—A curved needle, armed with a stout ligature, was passed through the healthy substance of the tongue at the base of the tumor. The two portions of the ligature, after cutting out the needle, were tied, one in front and the other behind, so as to include the whole diseased mass: she suffered severe pain, which was relieved by laudanum.

27th.—The pain following the operation soon subsided, and has not returned. The discharge from the mouth is copious and extremely offensive, in spite of the chloride gargle. The slough separated towards the latter part of this day; no hæmorrhage followed.

Gargarisma Aluminis.

April 2d.—The wound is healing favourably; the enlarged gland under the jaw remains in the same state. Discharged at her own desire. She presented herself at the hospital for inspection from time to time. In three or four months she was alarmed by uneasy feelings in the part, and return of the disease, soon followed by the development of a hard knot under the cicatrix; the glandular swelling had not increased. Finding that the means employed were merely of a palliative character, and fully aware of the nature and inevitable termination of the disease, she discontinued her attendance.

CASE III.—*Cancer of the tongue—removal by ligature—return of disease.*

A lady, fifty years of age, who had ceased to menstruate in the preceding year, consulted me on account of disease in the tongue, affecting the right side of the organ, and extending nearly to the basis. The diseased portion, about an inch and a half long, and an inch wide, was of scirrhus hardness, the change reaching nearly to the middle of the organ; the surface was irregular, warty, and granulated, red and fissured, slightly prominent, but not ulcerated. The pain was of shooting and burning character; often considerable, but not constant. There was no glandular affection; it was of eighteen months duration, having commenced with a slight warty projection. There was an unhealthy aspect of countenance, with foul tongue, and impaired digestive functions. Regulation of diet and attentions improved her health, and lessened local suffering, which was still considerable.

I applied the ligatures in November so as to include the whole diseased mass, in doing which it was necessary to carry the needle near the middle of the tongue. Drawing the ligatures gave great pain; they completely strangled the mass, which turned black, and separated about the seventh day. The surface healed slowly but completely, and the part regained its natural feel. The pain, however, was not entirely removed, and the patient had always the feeling of a sore place. In March a gland swelled behind the angle of the jaw; in the following May the tongue swelled, and became more painful; other glandular tumors formed in the neck, attained a great size, and suppurated, discharging either a yellow matter or dirty brownish fluid. The primary disease and the glandular affections increased, causing the most severe sufferings, and the patient went into the country to await their termination, in September.

The operation for removing cancerous portions of the tongue does not appear in a very favourable light, as a means of permanent cure, in the cases now related. Ann Featherstone (Case I.) remains free from disease at the end of eighteen months. If this is to be considered a perfectly successful result of the operation, it is the only example of that kind that I could adduce from my own experience. In all the other instances in which I have known of the operation being performed, either disease has returned in the part, or the glands of the neck have become the seat of fatal cancerous affection. In Case I. the operation was performed at an unusually early period; we seldom see the disease so near to its commencement. In Case II. the diseased portion was of inconsiderable extent, and the surrounding substance of the tongue, which was freely removed with the cancerous portion, was perfectly healthy; yet, the disease soon returned in the part. Relapse has occurred speedily in most cases; but I have seen one instance in which a long period intervened between the operation and the return of the malady.

CASE IV.—Cancer of the tongue removed by excision in October—relapse of the disease in December, terminating fatally in May.

A gentleman, sixty-one years of age, was under my care during the past twelvemonth, on account of cancer of the tongue. A physician, to whom he was related, was obliging enough to furnish me with the following particulars of his previous history.

“For six or seven years before his death, Captain C. had experienced autumnal periodical attacks of dyspepsia, accompanied with hypochondriasis to an intense degree. He was a person when in health who pos-

sessed an excessive flow of spirits and as suddenly exhibited a proportionate depression, apprehending a speedy termination of his life. During these attacks he would complain that he had the devil in his stomach, at which times his tongue became aphthous and to a considerable extent raw or excoriated, and so tender that with difficulty he could eat solid food. Under these periodical attacks his body would become diminished a stone or two in weight, and as readily, after a return to his accustomed health, would he increase to his usual size. As he grew more and more careless of his health, always addicted to live in convivial excitement and hilarity, but not to any excess in drinking, his tongue from time to time was more affected with aphthæ, with enlargement of the papillæ and of the whole organ.

The treatment from which he always experienced the most benefit consisted of blue-pill and colocynth at night, and of a mixture of Infus. Rosæ. Sulph. Magnes., with gr. x. to xv. of Acid. Sulph. Dilut. He, in fact, was sometimes very speedily restored to his wonted condition by this simple treatment, and not a vestige of disease appeared to remain in the tongue. About twelve months before the operation he neglected himself for a longer time than usual, refusing to be advised; shortly after, his melancholy temperament was more displayed, even to a slight aberration of the mind. At this period some suicidal expressions escaped him, which led his friends to be more vigilant. He again complained of the diabolus being in his stomach, which circumstance induced me to imagine that some organic affection of the cardiac or pyloric regions existed. The tongue had a more excoriated and aphthous character, for which he took Decoct. Sarsæ and the alterative pill, and a rigid dietary was enforced, from which he again experienced relief. I now lost sight of him for about twelve months, he having resided at Paris. On his return at the beginning of October 1844, his tongue had swelled to so great a degree that with difficulty could he talk. He was persuaded to resume the use of his acid mixture, &c. which proved efficacious; but on this occasion a *tubercle* remained at the right side of the tongue, which also impeded his speech. He now consulted a surgeon, who, after conference with another surgeon, cut out the diseased portion. The operator subsequently informed him that the part had been examined microscopically, and found to be of innocent character, and assured him that the disease which had been pronounced to be cancer was perfectly eradicated.

The wound was never firmly cicatrized: he left town for Southampton without any

precaution as to his danger; he fell again into habits of festivity, and shortly after returned to London to consult me. I accompanied him to the surgeon who had performed the operation, who proposed to cut transversely one half of the tongue away. Being unwilling to submit again to the use of the knife, he consulted you.

I am sorry that I did not propose an inspection of the body. His mother died at the age of seventy-five of cancer in the breast—which commenced at seventy. She did not nurse him; no cancerous disease was characterised before the month of October, about the middle of which the operation was performed: the captain died the 19th of May following."

When I saw this gentleman in December, there was a long cicatrix on the right anterior and lateral portion of the tongue, of which the apex was drawn towards the right side: it was therefore clear that a considerable piece of the organ had been removed. He stated that there had been a most profuse bleeding after the operation, which had ceased under the application of ice. The cicatrix was not closed in the centre. Under the cicatrix, and imbedded in the substance of the tongue, was a hard lump, equal in size to a large nut. There was an enlarged gland under the jaw. I could not recommend an operation, considering that it would have been formidable, if not dangerous, and certainly unavailing as a means of prolonging life. The only alternative was the regulation of diet and of the digestive organs, a quiet mode of living, and attention to general health. Under this treatment the local uneasiness ceased, and the patient became comfortable. The respite, however, was short. The disease again became active, with increased swelling, deep and foul ulceration, and severe suffering. In the course of these changes a violent bleeding came on, proceeding to such extent as to create alarm for the patient's life. It left him perfectly pallid and very weak, but it suspended the progress of the disease for the time, removing the pain entirely, diminishing the swelling, and giving to the ulceration a clean and healthy character. The symptoms returned as the vascular system became refilled; there were other hemorrhages, but to no great extent, and the patient died, emaciated, and worn out by suffering.

It will probably be suspected that the habits of this patient, and the disturbance of the digestive organs to which they led, caused the disease of the tongue. We must, however, remember that cancer of the tongue, like that of the female breast, may show itself in persons previously healthy and of temperate habits. I saw it arise and proceed to a fatal termination in a lady be-

tween forty and fifty, who had enjoyed excellent health for several years previously on a diet of water and vegetables, which she had adopted, not from necessity, but choice, on a notion of its superior wholesomeness. She had suffered considerable mental uneasiness for many months before the disease of the tongue appeared.

CASE V.—Cancer of the tongue—Excision of the diseased part—Return of the disease after several years.

Several months ago I saw a lady from the country, with extensive scirrhus induration, and partial ulceration, of the tongue. The whole right half of the organ and its middle were enlarged and hard, but the ulceration was not extensive. There was glandular swelling under the jaw. This lady, past 60, did not suffer much: she was able to take food, and was well nourished by it. During the time that she remained under my observation, the swelling and hardness had extended to the left side, which was on the point of becoming ulcerated. Her medical attendant in the country has been obliging enough to furnish me with the following particulars of the previous history and present state of the disease.

"The operation was performed in 1836. She was only aware of the disease a few days before, when she called my attention to what she considered a small sore in the tongue, which she attributed to the pressure of a false set of teeth. It was a small fissure, with thickened edges. An eminent surgeon in the neighbourhood was consulted, and advised an immediate operation. Accordingly, a piece of the tongue as large as a walnut was removed by the knife. The wound got well quickly, and it remained well for some years, except an occasional small abrasion of the membrane between the side of the tongue and the jaw, which quickly got well under the use of a mild solution of nitrate of silver. During the last three years the abrasions returned more frequently, terminating in little fissures. These, until the last twelvemonth, yielded to the nitric acid. About a month since, on my seeing it on her return from a month's stay at the sea, I found the old enemy had returned in the substance of the tongue, which had continued to increase. I should say it is now three times the natural size; it is about an inch and a half deep in the front. Fortunately there are no teeth, or they would have been imbedded in the substance of the tongue. She is much reduced in flesh, as for some months she has only been able to take food in the liquid state; but as it is of the most nutritive character, and there are no constitutional symptoms from absorption, life may be prolonged for months. The sublingual glands are much enlarged, but

those running down the neck are not at all affected. She does not suffer acute pain. The third part of a grain of the acetate of morphia at night is sufficient to produce comfortable sleep."

DISEASES OF THE TONGUE, NOT SYPHILITIC NOR CANCEROUS.

WE sometimes meet with cases, in which the character of the affection is doubtful, as in the two following instances.

CASE I.—*Large excrescence of the tongue, removed by ligature; no return of disease.*

I was consulted, in the summer of 1841, by a gentleman, on account of a considerable tumor on the side of the tongue. The patient, 42 years of age, was stout, of full habit, and accustomed, for a long course of years, to eat and drink very freely. He had a large ruddy face, hot skin, full pulse, and very white tongue. The disease had existed two years, having been considered for some time to be a common wart: it had grown more rapidly of late, in spite of escharotic applications. The growth, situated along the left edge of the tongue, was of oval form, about an inch and a half in the long axis, and an inch across. Its height from the surface of the tongue was about three quarters of an inch. It was attached by its whole breadth. The surface was uneven, but not ulcerated; the substance tolerably firm. It interfered most inconveniently with the movements of mastication and articulation, but was not otherwise attended with much pain. I was rather inclined to regard it as a growth of the mucous membrane, but felt doubtful about its real nature, as I had not seen any similar disease. I used the ligature for its removal, passing a strong curved needle through the healthy substance at the middle of the basis, and tying the two portions of the thread so as to include the whole growth. In order to assure the effectual action of the ligature over the whole substance, which it was necessary to include, I cut a deepish notch a little behind, and another in front of the growth; the front and back threads being carried respectively through the front and back notches. From one of the latter there was profuse bleeding in the evening, which ceased under the application of ice. The ligatures were cut away on the fifth or sixth day, and the base of the excrescence, which had not been completely strangulated, was covered, bleeding, but not freely. I now found that the disease was a morbid growth, covered by the mucous membrane, and resembling the malignant structures occasionally met with under the integuments of the face and the mucous membrane of the mouth. The surface slowly cicatrised, but

the part remained rather swollen and sore. After a few weeks there was increase of swelling, and the part ulcerated. Caustic was employed, and it was necessary ultimately to apply the potassa fusa freely. The part then cicatrised firmly, and is perfectly sound at the present time, although the habits of living have been resumed which might be supposed to have caused the complaint.

CASE II.—*Indurated enlargement of the left half of the tongue, not malignant.*

James Emblin, æt. 61, a hatter, of regular habits and unimpaired constitution, contracted, at the age of 18, a primary syphilitic sore, which healed readily. Since that time he has had no venereal affection.

During the last twenty years he has been engaged in making some secret compositions used in the trade, and found that whenever he had been exposed to the fumes the tongue became sore, cracked, and dry, and remained in that state for two or three days. For the last three years it has swelled and become painful during the winter months, but has returned to its natural state with the approach of warm weather.

About four months ago, the back part and left side of the tongue swelled up in an unusual manner, became hard, and was attended with a dull aching pain. Some weeks ago he had been an out-patient at Guy's Hospital, and had taken sarsaparilla with some benefit.

June 26, 1843.—There is considerable enlargement, induration, and alteration in shape, of the left side of the tongue, extending through the entire thickness and beyond the mesial line, and including three-fourths of the organ. The surface is, in parts, uneven and tuberculated, and presents several superficial ulcerations, not extending beyond the mucous membrane. The hardness resembles that of scirrhus, and there is dull aching pain, especially at night. The absorbent glands under the jaw are not affected; the general health and appetite are good, the countenance is clear, and the patient does not look like one suffering from malignant disease. Articulation and deglutition are considerably impeded.

Potass. Iodidi, gr. v. in Decoct. Sarzæ co. ter die. Milk diet.

July 1st.—The patient feels free from pain. Two of the lower teeth projecting against the diseased part of the tongue were removed.

Aug. 6th.—The swelling and induration of the tongue are not materially lessened. He still suffers occasional pain at night.

Hyd. c. Cretâ, gr. iiss. ter die.

9th.—The gums are becoming tender; both the swelling and induration are di-

minished; he has no pain, and can speak and swallow without uneasiness.

He was now made an out-patient at his own request, and I did not see him again.

Diseased states of the tongue are seen not unfrequently in conjunction with disorder of the digestive organs, especially when excited and maintained by imprudent indulgence in drinking. There is often, under such circumstances, a sore state of the organ, the epithelium being smooth, reddened, or white and opaque. The surface may be superficially ulcerated, the ulcerations being usually small, circular, and of greyish colour. Occasionally there is thickening of the mucous membrane, and deeper ulceration.

CASE III.—Smooth and opaque state of the epithelium, with pain, of long continuance, from drinking.

In June of the present year, I saw a gentleman, between 40 and 50, of very healthy appearance, who stated that he enjoyed excellent health, that he had always lived well, without committing excess. He admitted that he had been in the habit of taking beer, wine, and spirits freely, adding that he believed he had been imprudent in this respect, and had diminished the quantity of stimulus of late. He consulted me for a painful state of the tongue, with diseased condition of its surface. The mucous membrane over the greater part of the organ was unnaturally smooth, more or less opaque and white, here and there raw, as if it had been ulcerated. It had been in this state, generally causing great pain, for four or five years. I prescribed Hydrarg. c. Cretâ, gr. iiss. twice a day, Tincture of Myrrh with warm water as a gargle, and discontinuance of all stimulating drinks. I saw this patient again at the end of a fortnight. The pain had entirely ceased in a week, and there had been no return. The surface of the tongue remained smooth and white, but was otherwise sound.

CASE IV.—Thickening and induration of the mucous membrane of the tongue.

Some years ago, I saw a patient from the country, about 50 years of age, with a sallow unhealthy aspect, who had lived freely. On the upper surface of the tongue, in a space about an inch and a half long by an inch wide, the mucous membrane of the tongue was thickened, indurated, and raised into irregular prominences, which were smooth and not ulcerated. The complaint had existed some months, having become so painful that he could hardly take food; washes and gargles had been of no benefit. There was no suspicion of syphilis in this case, and the habit of drinking, especially spirits, sufficiently accounted for the disease. I prescribed the compound decoction of sarsa-

parilla, with the compound decoction of aloes, four grains of the extract of hyoscyamus, every night, and a strictly regulated diet. When I saw him at the end of a fortnight, all pain had ceased, and he could masticate anything. He considered himself well. He did not visit me again.

CASE V.—Swelling and ulceration of the tongue.

A lady, between 50 and 60, of unhealthy appearance, with red pimply face, who had often suffered from disorder of the digestive organs, consulted me for a disease of the tongue of formidable appearance. The middle and upper part of the organ was swollen, and occupied by a deep ulcer of irregular figure and foul aspect. It was very painful, interfering with mastication and articulation. The digestive organs were much disturbed. The complaint yielded speedily and effectually to simple measures—regulation of diet and the digestive organs, small doses of extract of henbane, and soothing local means.

ABSORPTION OF OXYGEN BY SILVER.

WHEN silver is melted under exposure to air, it absorbs oxygen gas, which it again gives out on cooling. The gas escapes with a kind of explosion through the hardened external crust, and gives to the metallic surface an irregular appearance. If a crucible filled with silver, which has been kept melted with nitre for half an hour, be placed under a bell-glass inverted in water, the oxygen gas thus evolved may be collected and examined. This quantity is equivalent to about *twenty-two times* the bulk of the silver. If any other metal be mixed with silver, for instance 1 or 2 per cent. of copper, oxygen is not absorbed by the metal; and if, when silver is melted, powdered charcoal be sprinkled over the surface, this takes the oxygen, and the gas does not escape by explosion on the cooling of the metal.—*Mitscherlich*. The combination of hydrogen and ammonia with metallic mercury, to form an amalgam, presents some analogy to this combination of silver with oxygen.

INJURY TO THE SPINAL CANAL.

I REMEMBER seeing an officer who was shot in the abdomen, and the surgeon who attended him was of opinion that the pancreatic duct was wounded, for a pint of clear fluid was discharged daily from the wound. I gave it as my opinion that the ball had traversed the spinal canal. The officer died. The surgeon was allowed to examine him, and he sent me word that the nature of the injury was precisely as I had said.—*Professor Colles's Lectures*.

Original Communications.

ON THE
NATURE OF THE GREEN ALVINE
EVACUATIONS OF CHILDREN.

By GOLDING BIRD, A.M. M.D.
Fellow of the Royal College of Physicians, and
Assistant-Physician to Guy's Hospital.

WHILST the attention of the practitioner has been constantly drawn to the frequent occurrence of bright-green dejections in the ailments of infants, but little has been done towards determining their real nature and chemical composition; there being, so far as I know, but one analysis recorded of these productions. I have repeatedly examined these green evacuations with the view of testing the accuracy of the popular opinion of their being chiefly composed of bile, but never made a minute examination of any until a few weeks ago, when my attention was particularly directed to the subject by my friend Dr. Forbes, who placed in my hands one of the best specimens of a green evacuation I ever saw. It was passed by a hydrocephalic infant whilst under the influence of mercury, and presented the following characters. It was a dirty-green turbid fluid, which, by repose in a glass vessel, separated into three very distinct portions—I, a supernatant fluid, of oil-like consistence, presenting a brilliant emerald-green colour; 2, a dense stratum of mucus, coagulated albumen, and epithelial debris, mixed with red particles of blood; 3, a deposit, occupying the lower part of the vessel, of large crystals of triple phosphate of magnesia and ammonia, in fine prisms of an apple-green colour.

The supernatant emerald-green fluid was decanted for examination.

A. It was faintly alkaline, possessed a broth-like colour, and a density of 10·20.

B. The addition of a few drops of nitric acid did not alter the colour, even after ebullition. A larger quantity of the acid being added whilst the mixture was boiling, converted the emerald-green colour into a pinkish-yellow; the green colour was not restored by the subsequent addition of an alkali.

C. Acetic acid scarcely affected the

green fluid, producing no apparent coagulation of mucus.

D. A solution of acetate of lead threw down a copious greyish-green tenacious precipitate, leaving the supernatant fluid colourless.

E. Bichloride of mercury produced a light-green precipitate, leaving the supernatant fluid pale, but not de-colouring it.

Analysis.

1. 1000 grains of the green fluid left, by careful evaporation, a deep olive-green, highly deliquescent, extract, weighing 100 grains.

2. This extract (1) being immersed in alcohol of 0·837, formed a mass like bird-lime, which could not be mixed with the spirit. Even after long boiling, it appeared hardly to diminish in bulk. The clear tincture being decanted, left, however, an extract weighing 30 grains. This residue possessed the yellowish green colour of faded leaves, an odour of fresh broth, and a sweet sub-astringent taste, with a very slight admixture of bitterness.

3. The alcoholic extract being carefully incinerated, left 5·5 grains of ashes, consisting chiefly of chloride of sodium mixed with mere traces of tribasic phosphate of soda ($3\text{NaO}, \text{P}_2\text{O}_5$). It was alkaline, but did not effervesce with acids.

4. The portion left undissolved by boiling alcohol yielded to water 13 grains of nearly tasteless matter, which, by incineration, left a powerfully alkaline ash, weighing 1·75 grains, not effervescing with ashes, and consisting nearly exclusively of alkaline tribasic phosphate of soda.

5. The residue, insoluble both in water and alcohol, weighed 57 grains, and consisted almost entirely of coagulated albumen, dry mucus, and modified blood. It left by incineration 1 grain only of ashes, consisting almost wholly of brick-red sesquioxide of iron.

The following is a view of the results of the examination:—

Alcoholic Extract	{ Organic . 24·50
	{ Inorganic . 5·50
Aqueous Extract	{ Organic . 11·25
	{ Inorganic . 1·75
Insoluble Matter	{ Organic . 56·00
	{ Inorganic . 1·00
Water and Volatile matter .	.900·

Regarding the chemical constitution of the organic portion of the alcoholic and aqueous extracts; the former consisted chiefly of fatty matter, cholesterine, and a green substance, probably identical with the so-called *biliverdin**, with mere traces of bile, barely sufficient to communicate a bitter taste to the extract, and in too small a quantity to leave any carbonate of soda in the residue of incineration. The aqueous extract consisted chiefly of ptyalin, and the extractive matters comprehended under the general term of "extrait de viande" by Berzelius. The composition of the fluid part of the green evacuation may therefore be thus expressed:—

<i>Biliverdin</i> , alcoholic extractive, fat, cholesterine, with traces of bile . . .	24.5
Ptyalin, aqueous extractive coloured by <i>biliverdin</i>	11.25
Mucus, coagulated albumen, and hæmotosine	56.0
Chloride of sodium, with traces of tribasic phosphate of soda	5.5
Tribasic phosphate of soda	1.75
Sesquioxide of iron	1.0
Water	.900
	1000

An analysis of a green calomel evacuation has been recorded by Simon†, he has not given the proportion of solids and water present, but merely detailed the composition of the dry extract, which consisted of

Soluble in alcohol	{ Bile, bilifellic acid, biliverdin. 21.4 Fat containing cholesterine 10.0 Alcoholic extractive 11.0 }	42.5
Ptyalin, aqueous extractive		24.30
Albumen, mucus, epithelial cells . .		17.10
Saline matter		12.90
		96.7
Loss		3.3
		100

Some late researches on the nature of the green stools said to be of frequent occurrence in patients who are under a course of the Marienbad and Carlsbad waters, have been published by Professor Kerstin, of Freiberg.‡ He has altogether denied that any quantity of bile is present in the green

evacuations, and has attributed their tint to the presence of green sulphuret of iron, generated in the stomach and intestines by the reduction of the sulphate of soda present in the water, to a sulphuret, and its subsequent action on the iron existing in the springs alluded to. He states, in accordance with this view, that hydrochloric acid destroys the green colour of the stools, evolving abundance of sulphuretted hydrogen. In this character there is an essential difference between the green evacuations of the Marienbad patients and of those under the influence of mercury. The conclusions arrived at by Professor Kerstin have been flatly contradicted by Dr. Frankl, of Marienbad,* who attributes the colour of the evacuations to the "same source" as the greenish tint of some mucous discharge from the vagina in leucorrhœa, the urethra in gonorrhœa, and the nasal secretions in some forms of coryza.

That bile may, and often must, be present in large quantity in the fecal dejections in disease, is certain; but that it is necessarily present in the green evacuations so common in early infancy, and under the influence of mercury, may be questioned. In Simon's analysis a large quantity of bile was found, but in the specimen examined by myself but mere traces were detected. If any quantity of this secretion really existed, the alcoholic extract must have tasted bitter, and the ash must have contained an alkaline carbonate, as from the sparing solubility of phosphate of soda (HO , 2NaO , $\text{P}_2 \text{O}_5$) in alcohol, there could not have been sufficient of this salt present to unite with the soda of the bile to form during ignition the alkaline phosphate (3NaO , $\text{P}_2 \text{O}_5$).†

I have assumed that the green colour of the matter examined was owing to *biliverdin*, a conventional term for a substance very imperfectly understood, and very likely applied to substances essentially distinct in their nature. Berzelius has compared *bili-verdin* to the chlorophylle, or green colouring matter of leaves, although this must be regarded as partaking rather of a wax-like nature than as a mere coloured

* Medizinisch-Analytische Chemie, von Franz. Simon: Bd. I., s. 333.

† Simon, supra citat. Bd. II. s. 496.

‡ Heller's Archiv. für Physiologische Chemie. 1844. S. 273.

* Heller's Archiv. 1845. S. 105.

† Philosophical Magazine, June 1845. I have here pointed out the nature of the change alluded to above.

extractive. It must, however, be borne in mind that green colouring matter may be possibly generated in the animal economy from the action of certain matters on the hæmatosine, or colouring matter of blood. Thus, it is well known that when blood is exposed to the influence of sulphuretted hydrogen gas, it acquires a deep olive-green colour when viewed by reflected, and a dingy red, by transmitted light—phenomena identical with those presented by the colouring matter of bile. Attention has been drawn to this remarkable fact by Professor Leopold Gmelin.* It is now ten years ago since a series of researches on the action of oxydating agents upon blood were published in the pages of this journal, by Dr. Brett and myself.† In that paper we described two products of the action of nitric acid upon clot of blood,—an olive-green sweetish astringent substance, and an intensely bitter yellow one; we applied the conventional term of chloro-hæmatin to the former, and xanthe-hæmatin to the latter.

Since, then, the colouring matter of blood is fully capable of being converted into green pigments under the influence of different agents, it must, I think, be admitted, that we are not to assume the green colour of an animal excretion as of necessity depending upon the presence of an excess of bile. And when chemical analysis fails to indicate the presence of any quantity of this secretion in a bright green evacuation, it is but legitimate to seek for some other cause of this tint. The proportions of the so-called bili-verdin very closely approach to those of the xanthe-hæmatin before alluded to, and I confess that I am induced to regard the green colour of the emerald and "chopped spinach" stools of children as depending upon the presence of modified bile, rather than on an excess of bile.

Believing that the green stools alluded to are but a form of melæna, I have often closely questioned the nurses of children voiding them, regarding the appearance of the evacuations before and after the development of the green colour, and have almost constantly been told that streaks, or even clots of blood, had been observed.

I regard, then, the presence of green stools as indicative not of a copious secretion of bile, but of a congested state of the portal system, in which blood is exuded very slowly, and in small quantities, so as to allow of the colour being affected by the gases and secretions present in the intestines; a state of things capable of readily ending in melæna, in which the effusion of blood is so copious and sudden as not to give time for the occurrence of the changes alluded to.

There is, moreover, a peculiarity in the green dejections of children and others whose portal circulation is congested, which, so far as I know, is quite distinct from any property presented by mere bile under similar circumstances;—I allude to the effect of exposure to the oxygenating influence of the air upon them. When first voided the "chopped spinach" stools are in the majority of cases of a bright orange colour, and they assume their characteristic grass-green hue only after exposure to air. The time required for this change varies remarkably. I have seen an orange-coloured stool become green in a few minutes; and in the same patient, only a day or two afterwards, many hours may have been required to effect the same change.

19, Myddleton Square,
August 13, 1845.

GREATER FATALITY OF GANGRENE IN INGUINAL THAN IN FEMORAL HERNIA.

I CANNOT charge my memory with having ever seen a case of inguinal hernia recover when gangrene had taken place; yet it is very remarkable, that patients with strangulated femoral hernia that had mortified, will often recover, although the parts which constrict the intestine are much more rigid and unyielding, have sharper edges, and form a smaller aperture in the latter than in the former. It is a curious fact, but true, that you will oftener succeed in reducing a femoral hernia by the taxis in men than in women.—*Professor Colles's Lectures.*

LUTE FOR STOPCOCKS.

RESIN LUTE.—Melt at the lowest temperature possible 1 part yellow wax with 4 or 5 of resin. Introduce gradually into the melted mixture 1 part red ochre or finely powdered brick, and allow the mixture to remain for a few minutes at about 220°; let it afterwards be stirred until it is cold. It must be employed warm, and on warm surfaces.—*Berthier.*

* *Recherches sur la Digestion.* Tiedemann and Gmelin, p. 19.

† *MEDICAL GAZETTE*, Vol. xvi. p. 751. Aug. 1835.

ILLUSTRATIONS OF THE
INTEREST AND IMPORTANCE OF
THE STUDY OF CASES OF SUDDEN
OR VIOLENT DEATH.

By ALEXANDER HARVEY, M.D. Ed.

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INTRODUCTORY.

ASSUMING, for the present, that the subject specified at the head of this paper is one of the highest interest and importance, it may, I think, be confidently asserted that it has not yet received from the profession a proportional measure of attention, and that the information of many regarding it is wanting in scientific accuracy and precision, and, still more, in practical utility.

This is probably owing to the circumstance that there is no work in our language, of any repute at least, expressly devoted to the subject, and giving a comprehensive view of it in all its bearings—physiological, pathological, and practical—and also to this other circumstance, that but little account is made of it in any of those medical works, systematic or practical, which have, till recently, been the most read and studied in the profession, and have influenced most the direction and tone of medical opinion.

In this last respect, however, an important change has been in progress of late years. The systematic writings of Dr. Alison, published within the last twelve years*, go fully into the elements of the subject, and have tended much to direct attention to it. We owe, indeed, to Bichat, Brodie, Wilson Philip, Legallois, Chossat, Travers, Williams of Liverpool, Kay, Shuttleworth, Orfila, Christison, and others, our scientific knowledge of the *modes* in which sudden death takes place, and of the *action* on the living body of the causes producing it, but I apprehend it will be allowed by every one competent to judge of the matter, that it is to Dr. Alison that we are mainly indebted for much of the precision which that knowledge has attained, and, still more, for giving it a practical bearing,

and bringing prominently into view the important applications of which it is susceptible in the science and practice of medicine. And it is gratifying to find that, following his example. Dr. Watson,* and Dr. C. J. B. Williams,† have, in their very valuable works recently published, given to the subject the consideration it deserves, and that we are now in possession of standard works which, as they cannot fail to exercise an important influence in guiding the inquiries, and forming the opinions, of the rising generation of practitioners, will, in due time, lead to a more general attention being given to it, to a more accurate knowledge of it, and to a juster appreciation of its importance.

The nature, however, and the limits of the three works referred to, preclude their authors from entering on this department of their subject in so connected a manner, or with such fulness, as it is capable and well deserving of being treated. And whoever wishes to make himself master of the whole subject must seek for information regarding it in different publications, and in different parts of any one work. A special and complete treatise on this subject is still a *desideratum*; and I am persuaded that it would be doing the profession good service were some one, with no higher aim, to work up the materials already furnished to his hand by Alison, Watson, Williams, and a few others, and give them a connected form and a detailed exposition—pointing out first, the *conditions of vitality* in man, then the several *modes of death* by syncope or asthenia, by asphyxia (or apnœa), &c.; next, the *effects* or the *action* on the living and healthy body of the several external *causes* by which sudden death may be produced, *e. g.* sensations and emotions, mechanical injuries, heat, cold, lightning, hæmorrhage, poisons, fasting, hanging, &c.; and, last of all (or even concurrently with these more strictly scientific details), the practical application of the facts and principles constituting this department of medical science; to the nature and treatment of individual cases of sudden death; to questions in medical jurisprudence, and to the pathology and treatment of diseases.

* Outlines of Pathology, 1833; since enlarged into Outlines of Pathology and Practice of Medicine, 1844.

* Lectures on the Principles and Practice of Physic.

† Principles of Medicine.

To aid in directing a more general attention to the subject, by illustrations of its great interest and importance, and to contribute thereby, peradventure, to the publication by a more competent hand of a complete work on the subject, is the design of the following short series of papers.

The conditions of human existence have been so adjusted by the author of nature as ultimately to lead to the extinction of life in every individual of our species. After a time, the extreme limit of which is nearly but not absolutely fixed, such changes are wrought in the living organism as are incompatible with the longer continuance of life; and on the cessation of this, the organism itself undergoes such farther changes as end in its entire disintegration—the materials of which it is composed assuming other and very different forms of existence. When life ceases in the manner now stated, the change is designated—sometimes *natural death*—more frequently, *death from old age*.

It very rarely happens, however, that life is prolonged till its continuance is rendered thus impossible. Death commonly takes place at a much earlier period, and is then the effect of changes which are *incidental* in their occurrence, and *contingent* in their result, *i. e.* not necessarily fatal, and produced by causes that may be avoided. Even in the case of those that have already reached an extreme old age, it is but seldom that their death, when it occurs, is actually inevitable in the way of nature: generally, it is immediately owing to the agency of some incidental cause. This kind of death, therefore, is said to be *accidental*, in opposition to that which is strictly *natural* and *inevitable*.

With regard to accidental death, the commonest observation of the circumstances attending it points out to us two very marked distinctions. In some cases, we see an individual, seemingly in full health, suddenly drop down, and either instantly, or within a very brief space of time, expire. And we can often connect the fatal event, thus suddenly occurring, with some obvious external cause, just immediately before brought to bear on the individual. When death happens and is caused in this way it is spoken of as *sudden* or *violent* death. More fre-

quently, we see an individual die after what we call an *illness*, of longer or shorter duration, the cause of which may or may not be traceable to some known external agent. This kind of death is truly accidental, yet from the circumstance of very few actually dying from mere old age, and as contrasted with that induced suddenly and by manifest external violence, it is familiarly called, equally with the former of these, *natural* death.*

Accidental death, then, takes place in two different ways, and is the result either of some obvious external cause inducing changes in the system, previously, it may be, in perfect health, which are always rapidly and often almost instantly fatal, or of causes whose agency is effectual, and that more gradually, through the medium of certain morbid processes, (known and spoken of as *diseases*) excited by them in the body.

In illustration of the distinctions now drawn, may be adduced, on the one hand, the case of a person dying from a violent blow on the head, and, on the other, that of a person dying from an “idiopathic” inflammation of the brain. In the one case, life shall be extinguished suddenly, without the intervention of any change that can possibly be called *morbid*, as this term is commonly understood; in the other, a long series of morbid processes shall intervene between the application of the exciting cause, and the fatal event.

These distinctions are real, and, both theoretically and practically, important ones. In many cases, however, the two kinds of accidental death merge the one in the other, and the distinctions in question cannot be easily or accurately made—so closely here, as in other instances, “is the law of continuity (so generally observed by nature) adhered to, by which it is hardly possible to point out any two natural objects, however strongly contrasted, towards which a series of intermediate links does not exist.”† Thus, the comparatively rare case of an individual dying within a few minutes‡ from an

* Speaking generally, there may be said to be two kinds of death—the one *VIOLENT*, commonly *sudden*, and always *accidental*; the other *NATURAL*, commonly *gradual*, and either *accidental*, or *inevitable*.

† Brit. and For. Med. Rev. Vol. i. p. 32.

‡ Abercrombie on Diseases of the Brain and Spinal Cord, Case cxvi. 3d Ed. p. 233.

extensive extravasation of blood on the brain, occurring spontaneously—a case which is really one of death happening *naturally* from a peculiar form of the disease called apoplexy—is in every respect analogous to that of a person, previously in perfect health, killed suddenly by a severe external mechanical injury of the head; a case, this, which is obviously one of *violent* death, and the essential distinction, by the way, between which and the former case, rapidly fatal as they both are, are popularly indicated by the term *killed*, that of *dying* being made use of in reference to the other. So, also, the case of an individual dying within a few hours of the effects of a perforating ulcer of the intestines, (a variety, this, of the common disease peritonitis, but proving fatal often before any well-marked inflammatory action has set in, and certainly often quite independently of the usual products of such action), is analogous to that of a person killed outright on the spot by a violent kick on the epigastrium. On the other hand, an individual receives such an injury as might have sufficed to deprive him instantly of life, but which from peculiar circumstances operates only partially as the direct cause of death, and ultimately proves fatal chiefly by inducing inflammation.

It is not always possible, therefore, in cases of *accidental* death, to draw the line of demarcation between *violent*, or *sudden* and *natural* death. Nevertheless, the difference between the simple, physiological, or healthy, and the more complex, pathological, or morbid kinds of death, if such distinctive appellations may be allowed, should be clearly recognised in any arrangement of such cases.

Fixing now our attention on cases of *sudden* or *violent* death, I proceed, as proposed, to offer some illustrations of their great interest and importance:—First, on their own account, and with a view to the means of obviating the fatal issue of the changes in which they consist:

Secondly, with reference to the civil and criminal jurisprudence of the country; and,

Thirdly, as they serve to illustrate and explain, and that in a manner which is highly satisfactory, the leading symptoms and general nature of diseases,—the more intimate or essential

nature of these,—the modes in which diseases prove dangerous or fatal to life, and the agency of their remote or external causes.

In respect of this last, the study of cases of sudden or violent death is singularly valuable both to the practitioner and the student of medicine, serving to the latter as an excellent introduction to the more difficult study of diseases, and furnishing the former with landmarks, or principles, which admit of a very easy application, or are important guides to him at the bed-side of the sick.

[To be continued.]

CONTRIBUTIONS TO THE PHYSIOLOGY OF THE HUMAN OVARY.

Second Series.

By CHARLES RITCHIE, M.D. Glasgow.

[Continued from p. 512.]

IX.—*Evolution of Ova from Ovaries, in connection with the rut in quadrupeds, and with menstruation in women.*

THE opinions of one class of physiologists adhering to the doctrine of the extrusion of ova by impregnation alone,—modified, latterly, by the admission that the ovarian structures which indicated the separation of ova, might be found in virgins, but attaching to that fact an erroneous exposition; and the views of another class, who insisted still more strongly on the influence of the same presumed cause, and, also, on others equally unconnected with pregnancy,—as the menses, in accomplishing the discharge of ova, have been traced, already, as low as the end of last century.

It has, although incorrectly, been said that Cruikshank, who wrote* in 1798, asserted the fact of ova being emitted by non-gravid women during the flow of the menses; the reference by that writer, taken in connexion with the other statements of his paper, being only to a presumed washing away of an impregnated ovum by the menstrual blood; but in 1762, more than twenty years after publishing his views of the formation of the ovum within the Graafian vesicle, already quoted,

* Phil. Trans. Vol. S7, p. 201-11.

the illustrious Morgagni* relates the dissection of an unimpregnated young woman, who died during the flow of the catamenia, in one of whose ovaries he noticed an opening leading into an empty vesicle of some size; and in 1790, Brugnoni† repeats an observation of the same kind, and also states that he had detected yellow bodies in the ovaries of mules.

The latter writer adopted generally the views of previous followers of Malpighi, and especially that of the supposed function of the bodies called corpora lutea to secrete ova; an opinion which Morgagni‡, however, rejected, asserting that what these "graves auctores" called ova were only an effect of disease; and in 1817, Sir Everard Home revived the speculation so objected to, in a paper§, which is as remarkable for its profound obliviousness of every thing advanced in the same direction by the Italian physiologists who went before him, as it is for being apparently the unacknowledged source of many of the speculations on this subject which have succeeded it.

Sir Everard announces it as a discovery he had made, that the corpus luteum is a body in which the ovum is found antecedent to impregnation, and he states his conviction that one or more ova pass from the ovarium to the uterus every time a female quadruped is in heat, whether she receives the male or not; that corpora lutea are formed in the ovaries and ova, are discharged into the uteri of virgin women, and that impregnation may take place in the tubes; that menstruation in women and monkeys is an identical physiological condition with the rut in other animals, the distinguishing feature of a sanguineous discharge in the former being only an accident which is occasioned, should the state not be associated with impregnation, by the more compact structure of their uteri, and having for its object the relief of the congestion of the parts, and their restoration to their natural tone.

From the confident way in which Sir Everard refers to the subject|| in a sub-

* De Causis et Sedibus Morbor. Epist. lii. art. 23. 1762. Adver. sur Anat. iv. 28, 17.

† Brugnoni de Ovar. eorumq. Corp. Lut. Obs. Anat. in Mem. Taurinæ. 1790. La Médecine éclairée par les Scien. Physiq. par Fourcroy, i. ii. p. 141.

‡ De Causis, &c. epist. xlv. art. 30.

§ On the Passage of the Ovum to the Uterus in Women. Phil. Trans. Vol. 107. p. 252.

|| Phil. Trans. Vol. 109, p. 234. 1819.

sequent paper, some of his views would appear to have received a measure of acceptance when, in 1820, Dr. Power published his Essays on the Female Economy.

In these the writer assumes substantially, although not in terms, the homogeneity of the physiology of menstruation with the rut of animals, and states it as the leading feature of his theory, that the discharge of menstruation is an accident which is contingent on non-impregnation. He supposed that the generative powers of the human female occasioned the formation of the human ova (Graafian vesicles?) by an orgasm of the ovary which arrived at its acmé every lunar month, and that contemporaneously with this there was set up a uterine nissus, which, on the impregnation of an ovum, terminated in the secretion of a decidua, but which, in the event of non-fecundation, gave rise to the menses. He expands a principle long before put interrogatively by Drelincourt*, of the turgescence of a matured ovum (Graafian vesicle?) at the sexual period, which, on being vivified by the semen masculinum, as is, in animals in a state of nature, the rule, produces at once a solution in the continuity of the peritoneum over the ovum (Graafian vesicle?), permitting the descent of this into the uterus, and a plastic effort in the uterus, giving origin to a decidua; but which, should its impregnation not occur, which in civilized life is the rule, is then either absorbed, or, under strong sexual orgasm, is extruded, forming a corpus luteum, the uterine nissus in the meanwhile degenerating, as had before been said by Raynold†, and others, into menstruation, which latter was therefore to be regarded, homologating in this the mendacious figment of Roussel, as a mere product of civilization.

It has been much disputed whether Dr. Power was the first to propose the oviparous or vesicular theory of menstruation, and the writer has said that the germinal principle of this hypothesis is to be found much earlier. Drelincourt's words are: "An ova vel periodicè, vel erraticè non turgescant, suoque commoto fermento venerem non stimulent?"

Van Oovercamp, quoted by Verheyen‡, appears to have asserted soon after-

* De Sem. Mul. p. 20.

† Birth of Mankind, 1636, p. 49.

‡ Suppl. ment. Anatomieum, 1710, cap. 16.

wards, that the menses are excited by a ferment which lodges in the ovary; and Dr. Gregory*, following Cullen†, embodied a similar opinion prior to the papers whether of Dr. Power or of Sir E. Home; while‡, as appears from the report of Professor Frank, of Wilna, it was an idea which was entertained in this country about the time that Gregory wrote, that in menstruation the ovaries are in a turgid and plethoric state. Dr. Gregory's words are—*Verisimile quoque est ovaria ipsa, humores quosdam sæcundos secernere, qui demum per suum stimulum uterum, partesque vicinas, plurimum afficiant, sanguinem que imprimis in ipsarum arterias invitent. Sæpius vero, salva omnino organorum fabrica, menses solita ætate non prorumpunt, ob defectu istius conditionis ovariorum, unde secretio humorum sæcundorum qui utero stimulo videntur esse pendet.*

Dr. Power asserts§, that he was in the habit of constantly communicating his theory to the students who attended his lectures in London for about ten years after the date of his book; and in 1827, Dr. Bostock||, who does not appear to have been acquainted with Dr. Power's opinions, reviewing the accumulating evidence for the occasional discharge of ova independently of impregnation which was supplied by other writers who preceded himself, advances the remarkable suggestions, that the spontaneous deposition of ova by the female, instead of being an incidental occurrence, is the uniform mode of their separation; the evolution of vesicles from the ovary, and the production of corpora lutea, being essentially dependent on the female organism, and that the seat of impregnation, when it happens, is in the tubes.

The same year was distinguished by the discovery by Dr. Charles E. De Baer, Professor of Zoology at the University of Königsberg, of the true ovum in the Graafian vesicles of unimpregnated mammals, an account of which was addressed by him to the Imperial Academy of Sciences at St. Petersburg, and published afterwards at Leipsic, followed, in 1828, by a Com-

mentary by himself in German, and, in 1829, by a French translation and Commentary by M. Breschet. Prior to this event, and, by many in other respects correct writers, for some years after it, the terms ova and vesicles were applied to the same objects, and such was the repute in which the doctrine of ovarian conception, and the notion of the necessity of this to the rupture of the vesicles, and the discharge of ova, were held, that it was not till after eight or ten years that the value of Professor Baer's discovery began to be felt, or till a later period still that its importance in relation to the present inquiry was duly appreciated.

In 1831, as appears from a certificate in the preface of a work* published in 1840, M. Negrier, a lecturer on midwifery at Angers, communicated it to the Society of Medicine of that city as a conclusion to which he had been led by an examination of the structure and functions of the ovary in other classes of animals, that the cause of menstruation and its periodicity is to be sought for in that gland. This, which is nothing more than the echo of Home and Power's statements, with the former of which Dr. Negrier was familiar, is the amount of what appears to have been known by him at that date, and to have had no other basis for its support than general reasonings on certain phenomena presented by the lower animals.

In 1833, Dr. Lee, in the article Ovary, in the Cyclopædia of Practical Medicine, after referring to certain cases of congenital and of artificial deprivation of the ovaries in which menstruation was arrested, and to others in which the ovaries were present but the uterus wanting, in which a menstrual nîsus was periodically experienced, as evidence that the ovary and not the uterus is the cause of the catamenia, relates four dissections which he had made subsequent to 1831 of women dying during the flow of the menses, in all of whom he had discovered a recent opening in the peritoneal coat of the ovary. Dr. Lee, when preparing this paper, had no definite idea of what it was which made its escape by the openings in the ovaries, but supposed it probable that all the phenomena of menstruation

* Conspect. Medicinæ, 1813, cap. xxi. 771 and 815.

† First Lines, p. 100, quoted by Dr. Power.

‡ Ed. Med. and Surg. Journal, vol. iii. p. 33.

§ Lond. Med. Gaz. 1843-4.

|| Physiology, vol. iii. p. 38.

* Recherches sur les Ovaries. Paris.

depend upon, or are connected with, some peculiar changes in the Graafian vesicles by which an opening is formed in their peritoneal and proper coats, which allows the escape either of the entire Graafian follicle, or of the fluid which it contains. Before the appearance of his paper, the scars of recent openings in the virgin ovaries had been long* familiar to physiologists, and repeated examples in unimpregnated women of the openings even unhealed and patent† had been recorded; the suggestion of the turgescence of a Graafian vesicle as the cause of rut, and the fact of certain of these being evacuated and corpora lutea formed, exactly as in the pregnant female, in quadrupeds during that season, and under strong sexual excitement without connexion with the male,‡ was well known; and an hypothesis§ assigning a similar orgasm of the human ovary as the occasional cause of the rupture of its follicles, and of the formation of corpora lutea, was in general repute; the identity of menstruation in its nature with the period of the rut had been much insisted on||, the existence in the ovary of a material¶, and the secretion by it of a humour** which give occasion to the menstrual discharge had been mooted; the indirect connexion of the monthly maturation of an ovarian vesicle with the menses††, and the possible association of this latter, should venereal orgasm occur, with the rupture of a fully-developed vesicle, and the consequent production of a corpus luteum, had been stated; and lastly, Dr. Bostock‡‡ had broadly announced that the evolution of ova, and the formation of corpora lutea, were uniformly accomplished in entire independence of the male, by the essential power of the female organism alone; but Dr. Lee was the first to connect and illustrate the rupture and discharge of the Graafian vesicles, occurring, as he supposed, coexistently with, and perhaps

dependent on, menstruation, by a series of dissections.

In 1838-9, M. Gendrin in France, and Mr. William Jones in this country, gave a kind of completion to the vesicular hypothesis of menstruation, by asserting that there was not only a probable coexistence between those lesions of the ovary and menstruation, but that this process is no more than the periodical phenomenon of a function, which consists in the monthly development and escape of a matured ovum, from one of the ovaries. M. Gendrin's* exposition professes to be based on five dissections, similar to those of Dr. Lee, some of which he says had been made as early as 1828, and the whole is produced in a form of minute and definite arrangement, and of apparently correct and precise description, which is very imposing.

Mr. Jones† also founds his statements, although more vaguely, on the authority of dissections, in one of which, made fourteen months before in a virgin, he had seen the ovum (Graafian vesicle?) grasped by the tube; and he hazards a lengthened history of the monthly ascension of one of these from its bed within the ovary, and of the commotion excited by it as it moves along the tube, only quieted by the eruption of the catamenia which occurs on its descent into the uterus, which is strangely in contrast with the dimensions of a human ovum taken in connection with the mechanico-vital principles on which the hypothesis is constructed.

In the same year Dr. Lee published an excellent paper‡ on one of the forms of corpora lutea; and in some remarks made by him afterwards§ on this, he adds the additional fact, that modifications of these bodies are sometimes produced by menstruation; and in 1840, Dr. Paterson, in an essay on the same subject,|| repeats this statement in connection with three dissections of such supposed menstrual bodies in the ovaries, and with numerous others, in which he believed, adopting the common opinion, the appearances to have been occasioned by impregnation. Imme-

* Vide De Graaf, Roederer, Morgagni de Causis, &c. ep. 52, art. 28.

† Brugnoni, quoted by Raciborski, op. cit. p. 407; Velpeau, *Traité des Accouch.* tom. i. p. 149; Vallisnieri in *Dog. Hist. della Generag.* par. ii. cap. 3.

‡ Drelincourt, Home, Blundell, Bostock.

§ Blumenbach, l. c.

|| Le Cat. Roussell.

¶ Van Oovercamp, op. cit.

** Dr. Gregory, loc. cit.

†† Power.

‡‡ Loc. cit.

* *Traité Philosoph. de Méd. Pratique.*

† *Practical Obs. on Diseases of Women*, by William Jones. London, 1839.

‡ *Med. Chir. Trans.* vol. xxii.

§ *Lancet*, 1838-9, p. 508.

|| *Ed. Med. and Surg. Journ.* vol. liii. p. 49.

diately afterwards, M. Negrier published his researches, in which, assuming the speculations of Malpighi, Home, and Plaage, relative to the corpus luteum, as a basis for his own, he maintains that at every monthly period one of these bodies assumes a high degree of activity, becomes distended with fluid and the centre of a congestion which extends throughout the ovary, corresponding tube, and the uterus, giving rise to the catamenial discharge, and more or less constitutional and local sufferings, which are terminated at length by the bursting of the thick wall of the yellow cyst, and the ejection of the ovum.

At this time, also, M. Duvernoy, of the Academy of Sciences of France, reasoning on the observation of what are termed corpora lutea in virgin women, and on the analogy in the composition and development of ova in birds, re-asserted the spontaneous periodical discharge of these in the mammifera irrespective of fecundation; and in 1842, M. Pouchet, who had been in the practice of repeating the same opinions in lectures at Rouen, from 1835, published his 'Théorie Positive,' the main feature of which is, that the ovum in the whole animal series is invariably produced in connexion with the rut, and evacuated independently of impregnation;—a periodical and spontaneous evolution being the universal law of the animal kingdom, to which man does not form an exception.

In the same year Dr. Lee published his Lectures, in which, besides adding two dissections to those he had already given, he repeats in more definite terms his previous opinion that at each period of menstruation a Graafian vesicle bursts and its contents escape; and the notion that this evolution was to be regarded as at length revealing the true and long-sought for cause of menstruation, being now somewhat generally entertained, the merit of its discovery began, in 1843, to be claimed not only for the latter writer, who had never, however, committed himself to any articulate explanation of the matter, and for Dr. Power, some of whose statements admit of such an accommodation although contradicted by the more specific announcements of his views, and for Messrs Gendrin and the other writers to whom re-

ference has been made already; but also for MM. Cuvier, Duges, and Raciborski in France, M. Nægélé the elder, and M. Bischoff, in Germany, while in Italy, Professor Argenti of Padua followed* in the same track, and in England the right of priority was claimed for Dr. Laycock† and Mr. Girdwood,‡ the latter of whom produced evidence of his having been accustomed to observe and record the proofs of this monthly deposition of an egg by the human female, for so long a period as from 1831.

The writer of these contributions deems it beyond his province to obtrude his judgment on any question of personal claims, his desire being rather to confine himself to the detail of facts in connection with their relative history as matters of science; but if there be any whose labours in this field have had more successful and definite results than those of others, it is MM. Raciborski and Bischoff, in their simultaneous discovery, in 1843, of ova in the tubes of virgin animals at the time of rut.

It will be remembered§ that, at the period when Kerckring wrote, physiologists, from a comparison of his statements concerning the ova of mammals with what was known of the sexual functions of other orders of animals and of plants, had inferred the conclusion that unimpregnated ova pass along the tubes of virgin animals, to be fecundated in the uterus, or to be discharged as sterile; and the announcement of any one that he had really detected these in autopsies of such animals, would have been as germane to the state of previous expectation nearly as at the present day; but unfortunately for science, and for multitudes of suffering quadrupeds sacrificed in a mistaken line of investigation, this conclusion did not happen to have been verified by actual dissection, and was soon jostled out of sight by the experiments of De Graaf on animals which had had connection with the male. The various misconceptions to which this mode of inquiry gave rise, and the rooted hold obtained for these by means of the authority of the venerable and illustrious Haller, have been noticed||, and

* Annali Univ. de Med. Milan. t. cv. p. 311.

† Lancet, 1842-3. Vol. i. p. 714.

‡ Idem, 1842-3. Vol. i. p. 825.

§ Sect. VIII.

|| Sect. VIII.

the slow progress of the truth of the case in another line, and mingled with errors of another description communicated to it by Malpighi and his followers, has been, in the present section, traced in a recently enlarging and depurating stream to our own day; but the fact which mainly distinguishes the researches of physiologists in this department in the two centuries nearly which they have occupied, is, that from the declaration of Kerckring's* reviewers, till the time of MM. Raciborski and Bischoff, no dissection having in view the discovery of ova in the tubes of virgin animals was ever made. These investigators, guided by accumulating and advancing facts, and by general reasonings instituted on these by other inquirers, at length thought of this expedient, and were abundantly rewarded in the satisfactory demonstration of ova† in the tubes of bitches, of swine, and, by M. Bischoff, in a lamb, all of which animals had passed through the season of rut insulated from the male. The latter physiologist also relates four dissections of virgin women, and the other two, and refers to more, who died at or near the menstrual period, in the ovaries of which appearances similar to those observed in the quadrupeds they examined at the time of rut were detected, from which they deduce, like many before them, a correspondence of physiological nature, and of anatomical results, in the two conditions; but the positive demonstration of the presence of ova in the tubes or uteri of virgin women, although such an excretion indubitably takes place, and that also, if the woman be menstruating, most commonly during the first fourteen days which succeed menstruation, has never yet been actually made by any observer. The statement of Malpighi‡, that he had discovered a very small ovum in the tube of a woman; and that of Dr. Burns§, that he had seen a vesicle in the same situation, which contained a turbid serum like what is found in the

young ovum of the bitch, are neither of them conclusive in regard to the bodies they saw being unimpregnated ova; and the assertion of Mr. William Jones*, as well as those of some other authors, that they had seen human ova within the fimbriated end of the tube, were made, the writer believes, from those observers mistaking Graafian vesicles for ova; and they are the only observations with which the writer is acquainted, which bear on the present point.

In the latter end of 1843, the series of observations on the ovary, made by the writer, from 1839, in the course of his other necroscopical investigations as one of the physicians of a large hospital, began to be published†, in which he shewed, that instead of the elimination of ova being limited to menstruating women, it is maintained, often in great activity, in all females, and at every period of life; that the full development of the ova and of the Graafian vesicles which contain them, has a correspondence with a state of organic or vital activity, which is not necessarily, but is in general, associated with menstruation; that the rupture of the ovarian vesicles during menstrual life, although frequently failing to occur on the flow of the catamenia, and often taking place on different days of the interval of the menses, is probably much facilitated by the increased vital activity of the ovaries which obtains at menstruation; and that the two weeks which follow the fulfilment of this function, when the uterine cavity is generally lined with deciduous villi, is perhaps the most common period of the discharge of ova, as it certainly is of conception.

[To be continued.]

DETERIORATION OF AIR IN MINES.

M. LEBLOND has lately made a chemical analysis of the air in the galleries and cavities of the mines of Brittany. In the galleries the air contains only from 17 to 18 per cent. of oxygen: in the cavities or recesses the oxygen forms only 10 per cent., but there is no proportional increase of carbonic acid. The oxygen is simply deficient, and the nitrogen is in excess. This deoxidation of the air he attributes to the pyrites—the sulphuret of iron becoming slowly changed to sulphate.

* Phil. Trans. Vol. vii.

† De la Ponte *Periodique chez la Femmes et les Mammifères*, par M. A. Raciborski, p. 376. "The periodical maturation and extrusion of ova, independently of coitus, in mammalia and man, proved to be the primary condition to their propagation. By Th. L. W. Bischoff." Translated in the London Medical Gazette for January and February 1845, by Mr. Henry Smith.

‡ Letter to Oldenberg.

§ Anat. of Gravid Uterus, p. 110.

* Op. cit.

† Medical Gazette, 1843-4.

HISTORIES OF TWO
INTERESTING CASES OF DISEASE
OF THE SHOULDER-JOINT,

ONE OF WHICH REQUIRED AMPUTATION,
AND THE OTHER EXCISION OF THE HEAD
OF THE HUMERUS.

BY GEORGE WILLIAMSON, M.D.
Assistant-Surgeon to the Forces.

Case of amputation at the shoulder-joint.

PRIVATE William Herman, 8th regiment, æt. thirty-one, nine years service, of which two and a half in America. Admitted into Fort Pitt General Hospital, 23d June, 1844, with serofulous disease of the right shoulder-joint, of four years' standing. On admission, the joint presented the following appearances: considerable swelling, the surrounding soft parts much thickened and indurated, and the head and upper part of the shaft appeared to be enlarged. There were six sinuses around the joint discharging unhealthy pus, some of these above the clavicle, others below the insertion of the deltoid; on introducing a probe, the humerus was found to be extensively diseased. The swelling extended down the arm and forearm, and all motion of the joint was prevented. The patient's health was much affected, having lost flesh considerably; there was slight cough, with night sweats and hectic fever.

After a residence of about a fortnight in hospital, the treatment being during that time directed to the improvement of his general health, it was decided to remove the arm at the shoulder-joint, and the operation was accordingly performed on the 9th of July. On account of the immobility of the joint, and the thickening and rigidity of the surrounding soft parts, it was impossible to remove it by transfixion, and therefore the method usually adopted in such cases was chosen, namely;—a posterior superior flap being formed by commencing a semilunar incision at the anterior part of the acromion process, including the deltoid and parts posterior to the joint, and terminating at the posterior border of the axilla; then cutting into the joint, dislocating the bone, and finishing with one stroke of the knife by an internal or antero-inferior flap, the limb was removed: the glenoid

cavity, as expected, being now obviously implicated, the gouge was resorted to, and the diseased portions of this bone scooped out. Cold-water dressing was applied, the flaps left open for six hours, and then brought together by sutures; all the ligatures separated favourably by the ninth day. The wound gradually healed, forming a neat and even stump, and leaving a full and rounded shoulder. The patient regained strength, the cough and night-sweats disappeared, and he was discharged cured on the 13th November, 1844.

The artery was not compressed above the clavicle, but the assistant, following the knife with the fingers of the left hand, grasped the flap and artery against its palm, until the main vessels were secured, a few ounces only of blood being lost; thus showing that it is not necessary to compress the subclavian artery in removing the arm at the shoulder-joint, a proceeding at all times very difficult from muscular action, and rendered especially embarrassing in cases like the present, where enlargement of the head of the bone, and other morbid changes in the surrounding soft parts, elevate the humeral extremity of the clavicle, and consequently increase the depth at which the vessel lies. In a case similar to the foregoing, operated on here by Staff-Surgeon Ford in 1841, compression of the subclavian was attempted, but being found impossible, was abandoned, and the operation completed in the mode I have already described, and with the same result. The appearance of the stump after the operation in Herman's case, of which two drawings may be seen in the Museum of the Army Medical Department, lead me to form a more favourable opinion than that advanced by my esteemed friend and preceptor, Professor Fergusson, who states that a puckered or unseemly stump usually results from this operation, &c. &c.

Appearances of the joint.—Capsule much thickened, synovial membrane soft and pulpy, articular cartilage almost entirely destroyed by ulceration; head of the bone carious, with several small cavities of abscesses in its upper and outer part. Numerous spicula of new osseous matter were found shooting from the tuberosity and neck of the bone; and adventitious and bony mat-

ter was deposited for a considerable distance down the shaft.

Case of Excision of the head of the right Humerus.

Private John Morgan, 9th regiment of Foot, æt. thirty-nine, had served eighteen years, of which ten years in India, received a gun-shot wound in action at Idaliff, in September, 1842; the ball passing through the head of the right humerus.

On admission into Fort Pitt General Hospital, on the 9th June, 1844, (one year and nine months after the receipt of the injury), there were three sinuses, one situated a little below the coracoid process of the scapula, where the ball entered, another at the posterior aspect of the joint, the exit of the ball, and the third at the anterior and lower border of the axilla, having been an opening made for the discharge of matter: a probe introduced into either of the upper apertures was found to pass through the head of the humerus, the bone being felt to be extensively diseased and carious; the lower opening also communicated with bare bone. The patient had very little power over the limb, and was quite unable to raise it from his side; the shoulder-joint appearing to be partially ankylosed, but from the thickening and consolidation of the surrounding soft parts, and the pain which attempt at motion caused, the extent of this morbid union could not be correctly ascertained. The patient's general health had become much impaired, the discharge from the sinuses being very copious, and he had profuse night sweats, with loss of appetite. These general and local symptoms indicating the necessity which existed for removal of the disease by operation, after six weeks' trial by milder measures, excision of the head of the humerus was determined upon, and performed on the 22d June, in the following manner. A semilunar flap was made of the deltoid muscle by an incision stretching from the anterior to the posterior sinus: this being raised, and the attachment of the several tendons, &c. around the head of the bone divided, dislocation was attempted, but being found impracticable, in consequence of ankylosis of the joint, the humerus was as much as possible cleared of soft parts and

sawn across, about an inch below its head: its attachment to the glenoid cavity was then broken down, by the cutting plier being introduced into the tract of the ball, and the isolated portion of the bone removed; the glenoid cavity and part of the neck of the scapula, being also carious, were scooped out with the gouge, and the operation concluded.

A few ounces only of blood were lost during the operation; the circumflex artery and two small branches alone required ligatures: lint dipped in cold water was placed in the wound, which was left open; and about six hours afterwards, this dressing being withdrawn, the margins of the incision were brought together, and the arm kept well supported.

The wound healed quickly, but, when nearly cicatrized, erysipelas attacked the limb; from this, however, the patient recovered, and his general health afterwards improved rapidly: the wound healed; he regained considerable power over the limb, and was discharged from the hospital, as well as from the service, on the 26th September.

Appearance of the part excised.—The articular surface of the head of the humerus was soft and carious, and in consequence of its ankylosis with the glenoid cavity, it was entirely broken down during removal, either by the cutting pliers or by the gouge: the remainder of the part excised is preserved in the Museum at Fort Pitt, and exhibits the tubercle and upper part of the shaft much enlarged from the deposition of new osseous matter. Through the centre of the bone there is a long deep groove, (the course of the ball) extensively ulcerated; a little below this groove there is an aperture about one-fourth of an inch in diameter, leading into the medullary cavity.

CAUTION IN CASES OF OLD IRREDUCIBLE HERNIE.

WHEN you give up all hopes of reducing one of these large herniæ, all you have to do is to advise your patient to avoid flatulent food, particularly young vegetables. It is remarkable that numbers of herniæ become strangulated at the season of the year when the young vegetables come in first: this I have remarked for years.—*Professor Colles's Lectures.*

MEDICAL GAZETTE.

FRIDAY, SEPTEMBER 5, 1845.

WE elsewhere* report a trial, involving some important considerations relative to Life-insurance, which has recently taken place at the Liverpool Assizes. The payment of the policy was resisted on the ground that the deceased had committed suicide; and it is well known to be a provision in the conditions laid down by most Insurance Offices, that under these circumstances the policy is void. A serious question, however, here presents itself, whether, admitting that an insured party destroys himself while labouring under an attack of delirium or insanity, the policy would be equally void. In the case to which we have referred, it was not considered necessary by the counsel for the Office to argue whether the act of suicide was or was not invariably indicative of insanity, or whether the deceased actually laboured under an attack at the time of swallowing the poison. He insisted that the term "suicide," as employed under these circumstances, must be taken to signify the act of self-destruction in its widest sense, and not to be restricted to a case of felonious killing, or *felo-de-se*. If the party was in a state of sufficient consciousness to be aware that his death would be the consequence of the act,—the question whether he was in his right mind or not, so as to be morally responsible for his actions, need not be entertained,—the case would fall within the proviso, and prevent his heirs from recovering the amount insured. An opposite view of the question would amount to this,—that no stipulation in the policy as to suicide would be of any avail. It was therefore contended, that the ques-

tion of legal sanity or insanity, or, in other words, the moral accountability of the insured, was entirely irrelevant.

It is unnecessary for us to enter into the particulars of the evidence. It was proved beyond doubt, that the deceased died from the effects of sulphuric acid which he had voluntarily taken. At the time he procured the acid, from one of his own workmen, he was observed to tremble and to be distracted in his manner; his eyes were very wild and his face was red: these and other facts tended strongly to show, that he was labouring under an attack of suicidal monomania; and there was certainly more evidence of insanity here, than we find in nine cases out of ten, where a verdict of "temporary insanity" is returned by a coroner's jury. An attempt was made to show that, because there was some evidence of deliberation on the mode of taking the poison, and of consciousness on the part of the deceased before death, the proof of insanity had failed. But this, we need hardly say, is absurd;—a greater amount of proof cannot be required to establish suicidal than homicidal monomania; and it is well known, that, among numerous other cases, there was no want of consciousness and deliberation on the part of Oxford or Macnaughten, who were both acquitted of murder, on the ground of insanity! This view of the matter must have been based upon the old legal doctrine, now exploded, that insanity always consisted in an entire deprivation of sense and consciousness. If killing with deliberation or with a consciousness of the consequences of the act, were to be taken as a proof of sanity, or in other words to negative a plea of insanity, there would be very few acquittals on these occasions. It appears to have been entirely forgotten, that there may be a "suicidal" as well as "a homicidal climax!" We

consider, therefore, the evidence was sufficient to show that the deceased was insane.

Suicide committed in a fit of insanity is not regarded as a crime in law; but under other circumstances it is treated as a felony, and a kind of posthumous punishment is attached to it by forfeiture as well as by the mode of interment. It has been contended, that the act of suicide is itself a proof of insanity; but this is a *petitio principii* which it would be dangerous to admit. It is sufficient for our purpose to state that the English law does not act upon this principle; and the question then arises, whether a private Corporation has a right, by refusing the payment of a policy, to visit with a heavy fine an act proved to have been committed under circumstances which rendered the individual morally and legally *irresponsible*. It is open to Insurance-offices to make what provisions they please for the avoidance of policies; but the law has an undoubted right to put a fair and equitable interpretation upon the terms, when these are involved in doubt; and it appears to us, that in this case the jury, under the direction of the learned judge, have done strict justice, by returning a verdict for the plaintiff.

We have it here laid down, that for an Office to take the benefit of this proviso, it must be proved by the insurers that the party died by his own voluntary act; and it will then rest with those who would benefit by the policy, to show that the deceased was not at the time an accountable moral agent.

In considering this question, it appears to us, if a man bargain that his heirs shall not receive the benefit of the insurance of his life in the event of his committing suicide, he does not therefore bargain that he shall at no time of his life have an attack of delirium or mania, under which he may,

from perverted feeling or delusive motives, destroy himself. The act of suicide, it must be remembered, is the simple *consequence* of the attack of insanity, and it would be contrary to all equity to punish him, in the interests of his relatives, by including in the contract an attack of insanity, which no man can foresee, and against which no man can guard. If this is to be the interpretation of the word "suicide," it should be at once stated in every policy that the bargain is to include whatever may happen under a fit of delirium from fever or insanity, although the act might be against the healthy and rational judgment of the individual! Would a Court of Equity uphold such a contract, even if entered into between insurer and insured? We think not: a bargain against an attack of a disease, whether insanity or apoplexy, would be an absurdity, and we do not see that the Office is placing itself in a better position by using the word "suicide" in the policy, and then contending that it must be taken in its literal sense, without any reference to the cause upon which the act may depend.

But let us put this principle to the test in the following shape. If a man whose life is insured, while labouring under an attack of delirium from fever, throw himself from a window during the absence of an attendant, and thus lead to his death—Is the policy to be void? This is an act of suicide, and, according to the theory of the counsel for the Insurance-office, moral accountability at the time of the act amounts to nothing—it is perfectly irrelevant! Insanity has many shades; all cases of mental disorder are not so well marked as a case of delirium; but it is impossible to draw a distinction except by a close investigation of the circumstances. It cannot be permitted that a party who is to benefit

by his own decision, should be allowed to draw a distinction of this kind. We therefore come to the conclusion, either that the Insurance-offices must include in their proviso every act of self-destruction, depending on whatever cause, or the law must define those cases which are equitably excluded from its operation. Would the law, or public opinion, sanction the application of the proviso to an act of suicide perpetrated in a fit of delirium? We believe not. Even the counsel for the Insurers admitted that the vitiation would only apply to those instances in which the party wilfully put an end to his own life. He here conceded all that is required on the other side, unless the Insurers intend to constitute themselves the sole judges of the wilfulness of the act. He also admitted that the terms "dying by his own hand," used in some policies, should not be taken in a literal sense—or else all kinds of accidental deaths would be included in the proviso:—the law was right in not putting a literal interpretation upon them. But we should be glad to know why the law has not an equal right to interfere relative to the meaning of the term *suicide*, or for what particular reason this word is to be taken by the Insurers in its literal sense. The argument is inconsistent with itself.

This is, within a short period, the second time that a question—so important to the interests of those for whose benefit a life-insurance is effected—has arisen. On the last occasion* there

was a difference of opinion about the meaning of the terms "died by his own hand" amongst the judges before whom the case was argued. Should an appeal be brought on the present occasion, it would save future litigation if the whole of the judges were to give their deliberate opinions on the subject. A question so important as this ought not to be left in its present state of uncertainty.

Reviews.

Chemistry, Meteorology, and the Function of Digestion, considered with reference to Natural Theology. By WILLIAM PROUT, M.D. F.R.S. &c. London: Churchill. 1845. 8vo. pp. 515.

WE are glad to welcome the appearance of a third edition of this tripartite treatise, one of the most interesting of the Bridgewater series. Nearly eleven years have elapsed since the appearance of the second edition, which, we understand, has been long out of print; and the rapid progress of science had rendered necessary a revision of the author's views upon subjects so varied as those comprised in this volume. Indeed, the only agreement is in the general tendency of the theological argument. In all other respects, we must regard the work as formed of three distinct philosophical treatises, placed for convenience under one cover.

Although the work is addressed chiefly to popular readers, there is much in the chemical philosophy and physiology which it contains, that will interest and instruct the professional man. In the first part, the author treats of matter and its laws, then he gives a slight sketch of the imponderables, and of the primary elements, with their general relations to each other. Here we perceive that he has not allowed himself to be infected with

a policy, irrespective of the merits of the question, and by the mere accidental use of a particular form of words. Until the question is definitely settled, we may expect that Insurance-offices will take the hint here given them; and while they avoid the use of the term "suicide," they will make this ingenious substitution for it. Few of the insured are likely to know how this legal technicality will affect the policy.

* BORRADAILE v. HUNTER—Common Pleas.—May 1843. The view here taken by three of the judges was, that the words "dying by his own hand," might have a more enlarged meaning than the term "suicide," and include cases which might probably have been exempted from the proviso if the word suicide had been used. The majority of the judges treated the expression suicide as a felonious killing. One judge alone held that the terms "died by his own hand" implied suicide, and therefore a felonious killing. This appears to us to have been the correct view. Did the Insurance Company intend anything more than suicide in its legal sense by the use of these words? If not, they were allowed to defeat

the new views of chemistry, but he wisely keeps to many of what are now called the *old* doctrines of science. In the general reflections and arguments we find the following interesting passage. It certainly demonstrates that there are *vestiges* of a Creator, notwithstanding the attempts which have been recently made by ingenious speculators in tracing out the *vestiges* of (their own) *creation*, to reduce this to *a nominis umbra*.

"The prior existence of water and air, as compared with the existence of plants and animals, is established by the fact, that water and air *can* exist without plants and animals; but that plants and animals *cannot* exist without water and air. Hence as water and air must have existed, with all their present properties, before plants and animals were created; the question naturally arises, how water and air came to be endowed with their present properties? We suppose that water and air were created with their present properties, with reference to the future existence of plants and animals; and on this supposition the whole becomes intelligible. Further, that this is the true explanation, and that water and air have not obtained their present properties by chance or accident, is rendered still more probable by the following considerations. We have said that water and air can exist without plants and animals; now as far as we know, water and air might have existed *for ever* without plants and animals; at least the contrary cannot be proved or even rendered probable. Moreover, plants and animals, as involving new agencies of a higher order, (the agencies of life), never could, by any law of nature, necessary or probable, have resulted from an inferior agency. Hence there is no necessary relation of cause and effect between the prior existence of water and air, and the subsequent existence of plants and animals, as some seem to have supposed. Hence, too, it follows irresistibly, that plants and animals have been created, and their properties adapted to the properties of water and of air, at some subsequent period, and by some external and superior agent. But the agent that could thus create plants and animals could surely have created the water and air likewise;

may *must* have created them; for as the prior and subsequent creations, taken together, evidently form but different parts of one and the same general design, the whole design must have been the work of one and the same intelligent agent." pp. 171.

The section on Meteorology is somewhat concise, but the subjects are well selected for a popular elucidation of the argument, and they are of the highest interest. The author gives the temperature of space at -58° Fahr., *i. e.* 90° below the freezing point of water (p. 201). This is probably derived from the old calculations of Fourier. On the theory of mutual radiation, it is clearly impossible that the temperature of the earth, or the lowest stratum of air in contact with it, should ever sink below the temperature of space. Now what are the facts? Captain Ross observed in his Northern expedition that the thermometer stood at -60° , and in the winter of 1821, at Nijne Kolymsk, in Siberia, the temperature was -65° . On the authority of Adolph Ermann, the temperature at Yakutsk, in Siberia, (1829) was -72° , *i. e.* 104° below freezing, the lowest natural temperature hitherto observed on the globe! Hence we do not see how it is possible that Fourier's theoretical calculation can be correct, since under the circumstances there is no other source of cooling on the earth's surface but radiation, and it cannot be admitted that one body can become colder by radiating heat to another which is of a *higher* temperature than itself. In a note, Dr. Prout adds that recent inquirers have estimated the temperature of space at between 9° and -280° Fahrenheit! and at page 210 the author gives the lowest observed temperature at -55° , but we think he will admit that Ermann is an authority upon whom reliance may be placed.*

The following singular fact was observed by Dr. Prout, on the breaking out of the cholera in London, in 1832, (page 311):—"As an instance of the presence of such bodies (noxious vapours) in the atmosphere, we may mention a very remarkable observation which occurred to the writer of this

* Ermann's interesting work on Physical Geography, (*Reise um die Erde*), is about to be translated and published. A short notice of it appeared in the *Athenæum*, 1837: 75, 100, 117; also 1839: 59.

treatise, during the prevalence of epidemic cholera. He had for some years been occupied in investigations regarding the atmosphere; and for more than six weeks previously to the appearance of cholera in London, had almost every day been engaged in endeavouring to determine, with the utmost possible accuracy, the weight of a given quantity of air, under precisely the same circumstances of temperature and of pressure. On a particular day, the 9th of February, 1832, the weight of the air suddenly appeared to rise above the usual standard. As the rise was at the time supposed to be the result of some accidental error, or of some derangement in the apparatus employed, in order to discover its cause the succeeding observations were made with the most rigid scrutiny, but no error or derangement whatever could be detected. On the days immediately following, the weight of the air still continued above the standard, though not quite so high as on the 9th of February, when the change was first noticed. The air retained its augmented weight during the whole time these experiments were carried on, namely, about six weeks longer. The increase of the weight of the air observed in these experiments was small, but still decided and real. The method of conducting the experiments was such as not to allow of an error, at least to an amount so great as the additional weight, without the cause of that error having become apparent. There seems, therefore, to be only one mode of rationally explaining this increased weight of the air at London in February 1832, which is, by admitting the diffusion of some gaseous body through the lower regions of the atmosphere of this city, considerably heavier than the air through which that gaseous body was diffused. About the 9th of February, the wind, which had been previously west, veered round to the east, and remained chiefly in that quarter till the end of the month. Now, precisely on the change of the wind, the first cases of epidemic cholera were reported in London, and from that time the disease continued to spread. That the epidemic cholera was everywhere the effect of a peculiar condition of the atmosphere, is more perhaps than can be safely maintained; but reasons which have been

advanced elsewhere lead the writer of this treatise to believe, that the disease, termed cholera, was in London owing to the same matter which produced the additional weight of the air. The statements of these reasons here would be quite out of place: it is enough to say, that they are principally founded on remarkable changes in certain secretions of the human body, which, during the prevalence of the epidemic, were observed to be almost universal; and that analogous changes have been observed in the same secretions of those who have been much exposed to what has been termed *Malaria*. The foreign body, therefore, diffused through the atmosphere of London, in February 1832, was probably a variety of malaria; a subject on which we shall be very brief."

Again, he observes:—

"With respect to the nature of the exhalations denominated *malaria*, our knowledge is very imperfect: evidently they are in some way connected with vegetation, not, however, with vegetation living and in a state of growth, but with vegetation in a state of decay. It has therefore been thought likely that these exhalations contain some gaseous body, composed chiefly of hydrogen and carbon. Their effect may arise from a gaseous compound of this description, though no such compound is at present known: and the probability is, that malaria occasionally owes its properties to other elements besides the hydrogen and carbon disengaged from decaying vegetables." p. 313.

The influence of climate on animal and vegetable life, gradually brings us to the chemistry of organization. Dr. Prout considers that the four "principal proximate animal elements," gelatin, albumen, fibrin, and casein, are modifications of one only, the *albuminous element*. On Mulder's researches he makes the following judicious remarks:—

"An attempt has been recently made to show that albumen, fibrin, and caseine, contain a certain common fundamental proximate element to which the name of *proteine* has been given. That such a common proximate element may be derived from albumen, fibrin, and caseine, is not denied. Viewed, indeed, in connection

with organization and life, the supposition that some common proximate element, adapted for ulterior changes, exists in animal bodies, is very probable, and accords well with the simplicity of natural operations. But that a substance obtained like *proteine*, by the rude and disorganizing processes of common chemistry, should be that common proximate element; or that such a substance should ever be employed at all in vital operations, without undergoing the preliminary assimilating processes, is more than at present we are disposed to admit." p. 374.

We fear it is too late to attack the *proteine* theory: the oxides of *proteine* are now treated, like the oxides of copper and iron, as real and independent substances; and we have, as the result of some recent researches, new products, such as erythroprotide, protide, teroxide of *proteine*, and chloroproteic acid—all these, be it remembered, products of a product of decomposition! for no one has yet ventured to assert that *proteine* is a pre-existing compound. It is very likely that organic chemistry cannot advance without these ingenious inventions, and that they are exceedingly convenient for building up (in theory) the supposed transformations which are continually taking place in the animal body. But it is fair to ask, whether a compound, obtained by boiling organic matter in caustic potash, and precipitating it by acetic acid—i. e. "by a rude and disorganizing process of common chemistry"—has a claim to be considered as the type of any principle formed in the living body? Would it not be wise to wait until there is some demonstrable evidence of the actual pre-existence of such a compound. before we allow it to take so large a share in the construction of physiological and pathological theories? Arterial membrane may turn out to be a hydrate of *proteine*, chondrine a hydrated oxide of *proteine*, hair an ammoniated teroxide of *proteine*, and brain a cerebrate of soda: but in what way is sound pathology likely to be benefited by such assumptions in anticipation of future results? It appears to us that, even admitting all the experiments of Mulder and Scherer to be correct, no good can accrue to science from prematurely constructing theories on such an artificial basis.

In some respects, however, the results are, we believe, incorrectly stated, and require revision. Nothing is more certain, or more easily demonstrable, than that hair and horn contain sulphur; but in the table of composition of organic tissues given by Liebig*, from the researches of Mulder and Scherer, although sulphur is assigned to other principles, it is not stated to be a component part of hair and horn. *Proteine* is said to be a principle entirely free from sulphur: all we can say is, we have found this element present in considerable quantity in the substance as obtained from animal casein and vegetable gluten†.

The remainder of the work consists of an account of the functions of the alimentary canal, and of the process of digestion in animals.

Our readers will judge, from what we have said, that we think highly of this volume. It contains just that amount of philosophical generalization on many subjects appertaining to medicine and the physical sciences, which will be found convenient to those members of our profession who have neither time nor inclination to search into elaborate treatises. Dr. Prout judiciously avoids controversy; and, although some of his views in physiology may be considered old-fashioned, yet they are none the less valuable, and they will commend themselves to those who are guided by the steady light of induction, rather than by the meteoric blaze of modern speculation.

Surgical and Practical Observations on the Diseases of the Human Foot, &c. By JOHN EISENBERG, Author of "Practical Exposition of the Human Foot." London: Renshaw. 1845. 4to. pp. 252.

In plain language, this is a quarto on *Corns*, with gilt edges, large type, and

* Animal Chemistry, p. 126.

† One of the most recent doctrines of the imaginative Dutchman is, that like the Kilkenny rats, mankind will gradually disappear, and the human race will become utterly extinct after a certain number of years, owing to the carbonic acid accumulating faster in the air than it is removed by plants. Thus it is settled by Mulder that all animals would die in about 24 millions of years, supposing that vegetables were to cease decomposing carbonic acid from the present time (See vol. xxxv. p. 776). This is one of those dreamy hazy speculations, into which clever men are sometimes led. As animals derive their support from the vegetable kingdom or from themselves, it is not easy to perceive how they can increase

superfine paper! Unless the author has already secured himself a goodly list of subscribers, we are at a loss to know how a work like this is to find purchasers. The whole of this guinea quarto would not fill two numbers of our journal. In short, the proper form for such a publication would have been a shilling pamphlet. Even the title is a misnomer: for what are surgical observations if not practical? But the plan which he has pursued assures us that the author has not intended his work for the medical profession. The time for guinea quartos, in type which reminds us of little children's lessons "in words of one syllable," is long since past—the tide has now set the other way: and allowing the merits of the book to be equal to its pretensions, there would be no chance of such a speculation succeeding. The author is looking forward to the foundation of a Royal College of Chiropodists; and probably, when Sir James Graham has settled the Physic and Surgery question, he may be induced to turn his attention to the incorporation of the Chiropodists, male and female, some of whom, we understand, now contrive to extract from fifty to eighty corns from a single toe, and from five to ten shillings per corn, from their *patients'* pockets! "It is not improbable," observes the author, "that before any great length of time has elapsed, Chiropodists will be admitted to their place in the social (!) system." The operation for the removal of a corn is much more formidable than we had supposed, and the terrors connected with it have been most strangely overlooked by the Coopers, Abernethys, Dupuytren, Velpeaus, and others. "I have always," says the author, "attempted to maintain self-possession and calmness during the whole of a manipulation, whatever might present itself of unexpected difficulty (!) and I have been happy enough to escape those dangers into which others have fallen" (!) p. 69. Again, "It has been my good fate, out of above eighteen thousand cases, not to have three times produced blood" (!) p. 79. But our readers have had enough of this. If Sir James Graham, with an anxious regard to the corns of

her Majesty's subjects, should advise the incorporation of the Chiropodists, we think, judging of the author's disinterested statement of his own success, that he has strong claims to hold the office of first president, and his motto might be "*Ex clavo Herculem!*"

ANTAGONISM OF PULMONARY PHTHISIS AND INTERMITTENT FEVER.

At the scientific congress of Lucca this subject was warmly discussed, without any satisfactory result having been arrived at. Dr. Salvagnoli presented a series of cases, accompanied by a statistical table, tending to shew that in the Maremma district of Tuscany, where intermittent fevers are numerous, pulmonary phthisis and scrofula are but rarely met with. This pathological fact he endeavours to explain in the following manner:—If we admit, says he, a physiological antagonism between the liver and the lungs, which most physiologists do, it is easy to understand why phthisis should be rare where intermittent fever is common. Malaria acts principally on the abdominal viscera, increasing their action and volume. This increase of abdominal vitality diminishes the vital actions of the lungs, and thus prevents the development of tubercles in their tissue. Dr. Renzi criticised Dr. Salvagnoli's statistical table, and remarked that in marshy districts the number of individuals who arrive at a favourable age for the development of pulmonary phthisis is relatively smaller than in more favoured localities, and that consequently a calculation established only on the number of deaths from phthisis in such localities could not be exact. If the generations disappear during childhood—if the medium age, which is thirty years, is infinitely less in marshy districts, it becomes evident that more persons will die from the inflammatory diseases of early life, and fewer from chronic affections. Dr. Griffa confirmed the observations of Dr. Salvagnoli respecting the rarity of phthisis in the Maremma. Dr. Rino, on the contrary, maintained, from observations made at the clinique of Pisa, that phthisis was common in marshy countries. These views were also supported by Dr. Turchetti, who asserted that in the marshy districts of Fucecchio and Bientina he had remarked the antagonism which was described by Dr. Salvagnoli as existing in the Maremma. Dr. Trompeo stated that he had great opportunities of observation in Piedmont, where malaria was kept up by the rice-grounds, and in Sardinia, where intermittents are extremely frequent and severe, and that in both these countries he had found phthisis very rare wherever intermittent fever was common.—*Bulletin of Medical Science*, 1844.

in a greater ratio than the vegetables which supply them with food! The reader will find some good remarks on this subject in a paper by Dr. Sellar, Edinburgh New Philosophical Journal, July 1845.

Hospital and Infirmary Reports.

QUEEN'S HOSPITAL,
(BIRMINGHAM.)*Case of Bright's Disease simulating Poisoning
by Opium.*

[Read before the Queen's College Debating Society. By JOHN MOORE, President. With Notes.]

THOMAS PRICE, pensioner, æt. thirty-nine, (of large muscular frame and sallow complexion), was admitted into Victoria Ward 1, at 6 P. M., July 29th, 1844, under Dr. Melson.

Symptoms.—Breathing laborious, at times stertorous: when not subject to excitation of some kind or other he remains in a state of stupor: on being roused he answers questions sensibly, but presents a stolid aspect; muscles, though large, flaccid; pupils of moderate size, answering imperfectly to light; conjunctivæ extremely pallid; pulse 94, of full volume, but weak: occasional convulsive twitchings of the upper extremities.

The history of the case, partly detailed by the patient himself, and partly obtained from his wife, by Mr. Sharman (Dr. Melson's clinical clerk,) who visited Price as an out-patient, prior to his admission, is as follows, viz.: That having suffered for a few days from diarrhoea, he went to a druggist's on Saturday morning last, and asked for four pennyworth of tincture of rhubarb; that a large quantity was poured out of one bottle, into which a few drops of another liquid were dropped; he drank this dose in the shop; some pills were also given him, two of which were to be taken at bed-time. Immediately after taking the dose he became drowsy, and consequently, at the suggestion of a neighbour, returned to the shop, and asked the druggist's assistant who had served him whether he had given him laudanum? The young man told him that he had put in a few drops, on account of the severity of his symptoms. Upon again reaching home he fell asleep, and has continued sleeping, except when temporarily roused, until the present time: he vomited shortly after taking his draught, but the matter ejected had been thrown away. He has served in the West Indies, where he had a severe liver complaint, but has never had fits of any kind, neither is he aware of any hereditary tendency to them.

The patient was ordered a mustard emetic, to be taken directly; and to be kept in constant motion. The mustard did not excite vomiting, but passed away by the bowels within five minutes of its administration; hot strong coffee was now repeatedly given,

and he appeared to improve considerably, resting occasionally, and talking over his old campaigns with the porter who had the charge of him. About 8 A. M. July 30th, he relapsed into a lethargic state: galvanism was employed with little benefit: he was now walked round the hospital-garden between two men, and drank occasionally of a strong infusion of green tea, and again the tendency to stupor was diminished. At 2½ P. M. he once more relapsed; his countenance became more anxious, and his breathing more oppressed; his extremities were cold and clammy; he was nearly pulseless, and with great difficulty rendered conscious.

Æther was administered, ammonia applied to the nostrils, and galvanism employed with a beneficial effect.

So long as he was kept moving he could be made to answer questions put to him, but at three different times during the afternoon the disposition to somnolence was so extreme, that the means before employed were totally inefficient: cold water was dashed over the face and neck, followed by friction with hot flannel, with temporary benefit, but at 8 P. M. the soporific tendency had become almost insuperable; the pulse was 60 and feeble, the pupils but slightly contractile, the conjunctivæ pallid, and the stertor much augmented. He was now placed on a bed, and whilst Dr. Melson kept his finger over the radial artery at the left wrist, a vein was opened at the bend of the right elbow; the aperture made was small, and the blood flowed but slowly, but before four ounces had been removed Dr. Melson found that the pulse was rendered more frequent and thread-like: he therefore directed that the orifice should be closed.

The feet and legs were now covered with mustard cataplasms, and a blister applied over the nape of the neck and spine; ammonia and brandy were administered at intervals.

Though the mustard plasters were several times changed they caused but slight redness, and the blister produced scarcely any effect; the urgency of the symptoms rapidly increased, and he expired at 2½ P. M., July 31st, forty-four hours after his admission, and one hundred and two hours from the time of taking the supposed dose.

Examination of the body, twenty-one hours after death.—General appearance of body: No anasarca; no unusual tendency to putridity.

Cranium.—Meningeal vessels anteriorly empty, but posteriorly somewhat congested. Substance of brain of firm consistence, extremely pale, and exsanguine: no organic lesion perceptible.

Thorax.—Lungs much congested, and infiltrated with serum; heart generally hy-

peritrophied. (weighing seventeen ounces); no valvular disease.

Abdomen.—The stomach contained about two ounces of yellow pulaceous matter; no smell of opium was perceptible. The mucous membrane was generally congested, and a space about 4 by 3 inches in extent (situate about midway between the cardiac and pyloric extremities of the great curvature) extensively infiltrated with black matter: there was no abrasion of the mucous membrane.

The small intestines were congested throughout, without however loss of epithelium, excepting in a portion of the ileum, about six inches in extent, terminating within an inch of the ilio-cæcal valve; this presented several spots of ulceration in different stages, but in no part was the gut perforated. The liver was large and congested; the gall-bladder contained but little bile.

The kidneys were both of small size. The right presented externally an irregular lobulated surface of a yellowish grey colour, having, here and there, small stellate congested patches: when cut into it was found to be extremely dense and of granular texture; the cortical portion was the subject of extensive fibrinous deposit, which imparted to it a light yellowish grey colour; the tubular structure generally was changed into a buff-coloured fatty substance of firm consistence; two or three of the conuli, however, still retained their healthy appearance: small punctæ of earthy deposit were irregularly dispersed over the cut surfaces. The left kidney presented the same general characteristics, externally and internally, as did the right, but had in addition, lying beneath its peritoneal surface, two cysts (of about the size of horse beans) which possessed distinct membranous walls, and did not communicate with the pelvis of the kidney; both were filled with a yellowish brown albuminous looking fluid.

Pelvis.—The bladder contained about six ounces of urine of light colour, which was ascertained, by the employment of the usual reagents, to be albuminous.

Analysis of contents of stomach.—No trace of opium was detectible in the contents of the stomach by the tests proposed by Christison.

Analysis of cerebral substance.—A portion of the brain (about two ounces in weight) was digested in spirit, and strained; the filtered spirit evaporated over a steam bath to dryness, the residuum dissolved in hot spirit evaporated to the consistence of syrup, and strained again; by the addition of nitric acid crystalline plates of nitrate of urea were obtained.*

Coroner's inquest.—At the Coroner's

* Urea was also obtained from the serum of the blood abstracted during life.

inquest the druggist's assistant stated, that he had given Price (the deceased) "four drachms of tincture of rhubarb, into which he had dropped *five drops of laudanum*, on account of the severity of the symptoms; and that the pills consisted of equal parts of aloes, scammony, ginger, soap, and syrup." My evidence was to the effect that the immediate cause of death was congestion of the lungs, which might have been produced by a poisonous dose of laudanum, but that the disease of the kidneys which was present would fully account for it, and that this latter cause was rendered more probable by the discovery of urea in the brain.*

REMARKS.—On account of the occurrence of symptoms analogous to those of poisoning by opium immediately after the assumption of a dose in which laudanum was acknowledged to be present, and inasmuch as no tendency to disease likely to produce such symptoms was ascertainable, it was naturally concluded that a larger quantity of laudanum than was intended had been accidentally administered, but as the post-mortem examination tended to show that death was the result of natural causes, it may be well to analyze the symptoms, and to ascertain in what respects they warranted, or were opposed to, the diagnosis formed. First worthy of notice, we have,

The peculiar rousability of the patient.—Christison states that "the possibility of rousing the patient from the lethargy caused by opium is in general a good criterion for distinguishing the effects of this poison from apoplexy or epilepsy;" he further characterises it as "a safe guide when, as in many

* Doubts have been raised as to the poisonous influence of urea in consequence of its discovery by a German chemist in healthy calves' and healthy human blood. (See the *Lancet*, Oct. 19th, 1844). It cannot be denied that urea is a constant constituent of healthy blood, since from that fluid the kidneys secrete it, but that its normal quantity is inappreciably small is indicated by the fact that Dr. Rees has written express directions for the mode of examining blood supposed to contain urea, (see Rees "On the Analysis of the Blood and Urine"), and that Becquerel and others have failed to detect it, even where symptoms have led to the belief of its presence. That, when existing in excess in the blood, urea acts injuriously, is evident, since it has been observed that "cerebral symptoms have borne a direct relation to the quantity of urea in the blood." (See Dr. Garrod, *Lancet*, Oct. 19th, 1844, and Bright's Hospital Reports), and that when injected into the veins, or administered as a poison, urea causes death (Cormack on the Fever of 1843). If the circulating fluid contain an excess of oxygen—upon a due proportion of which it depends for its nutritive qualities—it ceases to be healthy blood, and becomes in fact poisonous; then is it not reasonable to conclude that a superfluous product would prove deleterious when existing in the blood in undue quantity, in consequence of the organs specially provided for the purpose of eliminating it from the system failing, through disease, to accomplish their appointed office?

cases of poisoning by opium, the individual can be roused to a state of tolerably perfect consciousness."

The convulsive twitchings of the forearm.—Convulsions, though not usual, are sometimes present; cases in which they occurred are quoted by Christison, and Beck states that "where they are present, they are frequently of extreme violence."

The pulse was of full volume, but weak, and the breathing laborious; as the case progressed, the pulse became small and threadlike, and the breathing stertorous: such are their characters in a fatal case of poisoning by opium.

State of the pupils.—The effect of opium upon the iris has been found to vary much, though, in the majority of cases, it would seem that the pupils are contracted; here, however, at first, there was little remarkable in their appearance: towards the termination of the case, diminution of size and insusceptibility to light were well marked.

Vomiting, which occurred on the morning that the suspicious dose was taken, is a symptom which frequently follows the assumption of a large dose of opium, yet, says Christison, "it may not interrupt the progress of the symptoms."

The remission of symptoms and subsequent relapse would have raised a doubt as to the nature of the case had no precedent existed; but Pyl has recorded a case in which vomiting occurred twelve hours after taking a large dose of opium: a remission of the patient's symptoms followed, but he again relapsed, and died on the tenth day. Christison, after quoting this case, writes, "The only way in which opium could cause death in such a manner, must be by calling forth some disposition to natural disease:" it will be remembered that it was in consequence of the patient suffering from diarrhoea that laudanum, in the case I have related, was given. Now, dysentery is mentioned by Christison as "lessening the susceptibility of the system to the effects of opium;" hence it was rendered probable that diarrhoea, continued for some days, might have so modified the action of the poison as to account for the prolongation of its deleterious effects.

The effects of remedies frequently invalidate or substantiate a diagnosis: in Price's case they had decidedly the latter tendency. The application of stimuli repeatedly produced a temporary sensibility, which, on the cessation of stimulation, was instantly succeeded by a recurrence of lethargy. A protracted remission followed the persevering exhibition of hot coffee and green tea—both antidotes employed in cases of poisoning by opium. After his relapse, when the symptoms had become more urgent, still was the effect of excitation evi-

dent, though in a diminished ratio. The cold dash and galvanism were twice respectively used with manifest, but short-lived benefit; but eventually the patient sunk into a state of insensibility from which no remedial agent could rouse him. Such are the circumstances which characterize exactly a case of poisoning by opium.

Having now seen that none of the symptoms observed during life were directly opposed to, and that, viewed *en masse*, they served to corroborate the diagnosis, let us consider whether the post-mortem appearances are reconcileable with the conclusion that poisoning by opium was the cause of death.

The brain was remarkably exsanguine, and its meninges were only congested posteriorly (this congestion being doubtless the result of cadaveric gravitation). It may be urged that the brain and its membranes are, in most cases of narcotic poisoning, congested, but Christison denies the universality of such an appearance, and Beck quotes a case, recorded by Stanley, in which the brain itself presented no unusual appearance, but the cellular tissue of the pia mater was much infiltrated with serum.

The lungs, as in cases of narcotic poisoning generally, were much congested.

The stomach, at its more dependent portion, presented a copious infiltration beneath the mucous membrane: this is held by Christison to be very seldom the result of natural causes: in the present instance, it may very probably be referred to the irritation caused by the remedial agents employed, viz. ammonia, brandy, and mustard. The analysis of the stomach's contents was rendered of little value by the length of time which had elapsed between the assumption of the suspected dose and the patient's decease; this, too, had been preceded by a constant diarrhoea, which would have rendered the discovery of the poison improbable even had it been known to have been taken extensively.

Thus far, then, no appearance had been observed which directly militated against the *supposed cause of death*, which was moreover negatively substantiated by the non-existence of aught which could satisfactorily account for the symptoms during life; the state of the kidneys, however, was sufficient to raise a doubt on the subject, since it is well known* that death by coma is a fre-

* See "Bright's Hospital Reports," and "Christison on Granular Degeneration of the Kidneys."

In ten cases which have come under the writer's observation, and in which granular degeneration of the kidneys has been found to be present upon post-mortem examination, five have died comatose, and, of the others, one had sustained a constant succession of fits some weeks before death. Becquerel (*Sémiotique des Urines*, p. 464), denies the influence which this disease is stated

quent conclusion of Bright's disease. Seeing, therefore, that the affection under which the deceased had laboured, and such symptoms as he had presented, might exist as "cause and effect," and that there was ascertainable no *proof* of the exhibition of a poisonous dose of opium, it was reasonable to conclude that death resulted from natural causes. As being likely to afford corroborative evidence, I instituted an analysis of the cerebral substance (in the prosecution of which I had the valuable assistance of Mr. Charles Palmer, Dispenser to the Queen's Hospital): the result was the discovery of urea*.

It remains to be inquired whether, with a predisposition to cerebral affection dependent upon the existence of renal disease, a dose of opium which, under other circumstances, would have proved innocuous, were capable of producing effects which, without its exciting influence, might have long remained dormant. Having repeatedly administered preparations of opium for complications of Bright's disease with benefit, and without the supervention of cerebral symptoms, I am disposed to answer this question in the negative. Opium produces coma by causing congestion of the brain: in Price's case the brain was remarkably exsanguine; and in the majority of cases of Bright's disease which have come under my notice, where cerebral symptoms have been developed, the pallid condition of the conjunctiva has indicated inanition rather than congestion of the cerebral vessels:† in such

by English writers to exercise over the brain, in these words: "Je ne puis admettre avec Mons. Christison l'action du sang altéré sur le cerveau. Il est très-rare, en France du moins, de voir succomber des individus atteints de dégénérescence granuleuse à des troubles fonctionnels de ces organes;" nevertheless, under the head "Symptômes Nerveux," he observes, that out of forty-five persons who have died of this disease (spécialement dans l'agonie) eight had presented somnolence, four coma, and one convulsions. (Op citat. "Symptômes Nerveux.")

* Dr. Douglas MacLagan has detected urea in the fluid effused into the ventricles of the brain in a case of fever (see Cormack on the Fever of 1843). A case has been recorded by Mr. Arnott, in which suppression of urine and coma preceded death for two days. Dr. Fownes discovered urea in serum effused into the cerebral ventricles (see MEDICAL GAZETTE of Dec. 27th, 1844). In two cases which have occurred at the Queen's Hospital since that which forms the subject of this paper, urea has been detected by Mr. Palmer; in the one case in serum effused into the ventricles, and in the other in the substance of the brain itself.

† It is well known that congestions (dependent upon a diminished tonicity of the vascular apparatus which naturally results from defective nutrition, and probably partly also upon the poisonous influence of urea upon the nervous centres) are variously manifested in Bright's disease: the brain may thus, in common with the other organs of the body, be occasionally congested, and from this circumstance cerebral symptoms may be developed; but cerebral symptoms are not necessarily the effect of congestion, for in

cases small doses of opium, by reason of their stimulating property, would seem likely to have a beneficial tendency, for the experiments of Bichat have proved that unhealthy (poisonous) blood circulating through the system is better than none.

In the eleventh volume of the MEDICAL GAZETTE, p. 777, was published a paper by Dr. Wilson, in which he insisted "on the intimate, constant, and vital connection of the brain, lungs, and heart, with the kidneys, through the medium of the blood, as illustrated by the morbid anatomy of those glands; and that in all cases of sudden death these organs ought to be examined, whether disease be found elsewhere or not." The paper was illustrated by seven cases which had "occurred within the author's observation, in which *death more or less sudden, and for the most part preceded by fits*, had taken place, no effusion or lesion having been found within the head, but disorganization presenting itself in the kidneys, of a nature to have interfered with the secreting power of the glands." Christison, who mentions the possibility of the symptoms of Bright's disease being mistaken for those of "poisoning by opium," after adverting to cases published by himself and others, writes, "In none of these, however, could there have been any risk of mistaking the phenomena for narcotic poisoning. But it may be well to advert to the subject here, for the sake of turning the attention of the profession to the propriety of examining the state of the kidneys in all medico-legal cases of death in a state of coma."

The case of Price, then, appears to be the first on record, in which circumstances have existed tending to confound the symptoms of Bright's disease with those of poisoning by opium: it evinces the absolute necessity for an examination of the kidneys in all medico-legal cases of death in a state of coma, as recommended by Drs. Wilson and Christison*: it shows that *Bright's disease*

Becquerel's thirteen fatal cases in which such symptoms had existed no lesion could be detected to account for them, excepting in one case in which there had been "acute meningitis." In the five cases of death by coma in Bright's disease, which occurred at the Queen's Hospital, under the writer's notice, the state of the brain as ascertained by post-mortem examination was as follows: viz. in two it presented no unusual appearance, (in these cases no analysis was made); in one there was copious extravasation of blood into the substance of the left hemisphere, in consequence of rupture of the middle cerebral artery, and extensive serous effusion into the ventricles, (this fluid, subjected to analysis, yielded urea in large proportion); in the remaining two cases (including the subject of the present paper) the brain was remarkably exsanguine; in both these urea was present in the cerebral substance.

* Out of 19 cases lately recorded by Dr. Francis as "illustrations of some of the forms of *sudden death*," 9 of the patients were affected with organic disease of the kidneys (see Guy's Hospital Reports, April 1845). Of 10 fatal cases of

may undermine the vital powers so insidiously, that fatal coma shall be the first recognized symptom: it also demonstrates the correctness of a law laid down by writers on medical jurisprudence—viz. "That the symptoms, however exquisitely developed, can never justify an opinion in favour of more than high probability."

Christison objects to this law as being too exclusive; but if we measure the value of symptoms in the case under consideration by the standard which he proposes, still shall we find them fallacious; for here were all his characteristics of *general poisoning*, viz. :—A sudden commencement, and rapid fatality; a steady increase of symptoms, and uniformity in their character throughout; the occurrence of symptoms shortly after assumption of a suspicious dose; and the only previous departure from apparent health* was diarrhœa of a few days' standing, which had not prevented the man from carrying on his usual employment. There was, moreover, present one symptom, which Christison considers a safe guide to a diagnosis of a particular species of poisoning, and that species was such as circumstantial evidence, exclusive of symptoms, rendered probable; and yet, notwithstanding these indications of poisoning, general and specific, a perusal of the details of the case can hardly fail to lead to the conviction that all the symptoms manifested were the natural consequences of Bright's disease.

It may be well, perhaps, to give a brief summary of another case, in which the connection between Bright's disease and death by coma was well marked; the symptoms will be seen to be very analogous to those exhibited in the case of Price. A brewer, æt. 30, was admitted into the Queen's Hospital, under Dr. Melson, on the 16th of September, 1844. He was stated by his friends to have been a hard drinker, but to have had, apparently, good health till within the last three days, during which time he had passed no urine, and had been insensible.

Bright's disease which came under the writer's notice during his residence at the Queen's Hospital, sudden death took place in 6: in 4 of these six cases coma ushered in the fatal termination; the other two patients (with whom hydrothorax was the most prominent symptom) died from sudden compression of the thoracic viscera consequent upon slight exertion.

* Dropsy, which, in some form or other, is an usual concomitant of Bright's disease, was altogether absent: if suppression of urine existed, as it probably did, it remained unfortunately undiscovered, in consequence of the patient having been conducted, on each recurrence of diarrhœa, to the water-closet. The details of symptoms and circumstances elicited from the wife of the deceased—who wanted to obtain pecuniary compensation from the druggist for "poisoning her husband"—were so contradictory, that no satisfactory conclusions could be drawn from them.

Symptoms.—Insensibility, temporarily removable by excitation; when roused he answers questions, but rather incoherently; countenance pale and œdematous; eyes fixed, with a vacant expression; pupils contractile; sclerotic of pearly whiteness; conjunctivæ generally extremely pallid; pulse small and weak. No defined abdominal tumor detectable; abdomen generally tympanitic, excepting in the right and left lumbar regions; tenderness of right lumbar and hypogastric regions; stools pass away involuntarily. A catheter was passed, but no urine flowed; and despite of active treatment, coma with stertor and blowing respiration supervened. He died on the 4th day after admission.

Post-mortem examination.—The brain was firm and exsanguine; the lungs congested. The heart weighed $15\frac{1}{2}$ ounces, free from valvular disease; right cavities dilated. The right kidney weighed 12 ounces, was soft and friable; the lining membrane of its pelvis (which was large) ulcerated extensively. The left kidney, weighing three ounces, consisted of little else than the distended pelvis, which contained about half a pint of albuminous fluid, floating in which were numerous vesicular bodies, of irregular form (apparently owing to commencing putrefaction). About one ounce of urine was found in the bladder; this was albuminous. The other abdominal viscera were healthy. The peritoneal lining of the abdominal parietes on the right side, and also the serous investment of the ascending colon, were intensely inflamed, and here and there coated with fibrin.

Urea was found to exist extensively in the cerebral substance.

PERIODS AT WHICH HYDROPHOBIA OCCURS.

EVERY one that is bitten by a dog really mad, does not get the disease; the proportion of those bitten is as 15 to 1 that gets hydrophobia; so that we may reasonably doubt the efficacy of many of those remedies we hear of to *prevent* the disease. The symptoms of hydrophobia never appear earlier in a man than the twentieth day after the bite; the most usual period is between the 30th and 60th days; sometimes they do not appear for twelve and even eighteen months. We have accounts of cases where there was a lapse of twenty years between the bite and the appearance of the disease, but they are not to be relied on. After eighteen months have elapsed, you may consider your patient safe; there is no fear of his getting affected.—*Professor Colles's Lectures.*

Medical Trials and Inquests.

NORTHERN CIRCUIT.

Liverpool, Aug. 18.

(Before Mr. Justice CRESSWELL and a Special Jury.)

SCHWABE, ADMINISTRATRIX, v. CLIFT.

THIS was an action in which the plaintiff sought to recover from the Argus Insurance-office the sum of 999*l.*, being the amount of a policy effected in that office on the life of Louis Schwabe, deceased. The payment of the policy was resisted, on the ground that Mr. Schwabe had committed suicide, in which case it was, by the terms of the policy, provided that it should be void. Mr. Knowles, Mr. Crompton, and Mr. J. Henderson, were counsel for the plaintiff; the Solicitor-General, Mr. Martin, and Mr. Unthank, appeared for the defence.

THE SOLICITOR-GENERAL (the issue being on the defendant) stated the case. The policy and the death of the party whose life was insured were admitted, but it was alleged that the case came within an exception in the policy, by which it was provided that in case the assured died by committing suicide, or by duelling, or by the hand of justice, the policy would be void. In this case it would appear that the deceased had taken poison for the purpose of destroying his life, and that he had died in consequence a few hours after. It was, he understood, contended on the other side, that Mr. Schwabe was not of sound mind. Even if that should prove to be the case, it would still be a question whether on that account the office was to lose the benefit of the condition of the policy, and if a question of that importance should be found to be unsettled, it was high time it should be. There was, however, a case, "*Borrodaile v. Hunter*," tried before Mr. Justice Erskine, in 1841, the decision in which he (the Solicitor-General) contended involved the present question. That action was brought by the representatives of a clergyman, by whom an insurance had been affected on his own life. The insured afterwards destroyed himself by drowning in the Thames, and the payment of the policy was resisted on the ground of its being therein provided that it should be void if the party should die "by his own hand." It was contended on the other hand, that though the party should die "by his own hand," in the literal acceptance; yet, if he were insane at the time he so destroyed himself, it was not within the exception in the policy. At the trial several questions were left to the jury, and their finding was, that the deceased voluntarily threw himself into the river with his intention to destroy life, but that at the

time, he was in such a state of mind as to be unable to distinguish right from wrong. On this finding, the case came before the Court of Common Pleas, and it was held by a majority of the judges that the office was protected by the exception in the policy. The Chief Justice of the Common Pleas, whose name it was impossible to mention without the greatest respect, dissented from the other judges, and was of opinion that the act, to come within the terms of the policy, must be a felonious act, and that the party must be *felo de se*. He (the Solicitor-General) submitted that that case, as decided by the majority of the Court of Common Pleas, was sound and right in law. They, the jury, were bound to find their verdict according to the law, irrespective of its policy or its expediency; but he must say, that if juries were to be induced by the eloquence of counsel to say that in a case where a life had been insured in an office, which, for its own protection, introduced a clause like this, and the party destroyed himself, *he must be necessarily insane*, "the consequence would be of the most serious and the most injurious kind, and would encourage distressed men and men labouring under pecuniary difficulties to commit gross frauds in order to benefit the families whom they might leave behind them. The effect, however, of the decision in the case of "*Borrodaile v. Hunter*" was to prevent the necessity of any such inquiry. It was then thought by the majority of the Court of Common Pleas that when parties entered into such a contract it must have been their intention to provide that no such question should be raised as whether the party destroying himself was sane or not. *It was not contended that the words, "dying by his own hand," should be taken in their literal sense, or should be held to apply to such a case as that of a man accidentally discharging his own gun and causing his own death; but the provision was intended to apply where the party was in a state of sufficient consciousness to be aware that death would be the consequence of his act; to exclude the question whether he was at the time in his right mind or not, so as to be morally responsible for his actions.* The terms of the exception in the present policy, were, if the assured should "commit suicide;" but the phrase in substance was the same as that used in "*Borrodaile v. Hunter*." Even in that case the words were not taken in their literal meaning. The party did not literally die by his own hand; he died by drowning; but his act was held to be within the meaning of the exception on a fair interpretation of its meaning, and the exact form of the expression was disregarded. But the words used in the policy in "*Borrodaile v. Hunter*," and those used in the

present policy, were *substantially the same*. The question is, what is the intention of the parties entering into the contract, on a fair examination of its terms? It is a well-known rule of law that words are to be taken according to their plain and ordinary meaning, unless there is something in the nature of the contract to show that they are taken in an unusual sense. Now, what is the most usual and ordinary mode in which, where a party has destroyed himself, whether by taking poison, by drowning, or by any other means of death, a person speaking of the occurrence describes it? He says, the person has committed suicide. If a person had intentionally taken sulphuric acid, and died in a few hours, would it not, in the ordinary use of language, be said he had committed suicide? The exception is—"in case the party should commit suicide;" *that is, in case he should do that which all the world, in common parlance, would call suicide*. On the other side, it must be contended that the parties did not use the word in the sense in which it was ordinarily used by all speaking the English language, but that it was confined to the technical meaning of *suicide in a felonious sense*. Could any one believe that the directors of this company meant anything but what they said, and which was simply this, that they would not be bound to pay the insurance if the party shot himself, poisoned himself, drowned himself, or in any other manner wilfully put an end to his own life?—By the law, as laid down in "*Borrodaile v. Hunter*," his Lordship, in his direction to them, would no doubt abide, and the more it was considered the more clearly it would appear that that case governed the present, and that the parties in the contract into which they entered meant those words to be taken in the plain and ordinary sense in which they were used by all the world. But if the question of sanity or insanity was to be raised, if ever there was a case of deliberate suicide by a person conscious of the nature and consequences of his act, it was in the present instance; and if, beyond this, the question was to be *whether he was or was not at the time morally responsible for his actions, it would come to this, that no stipulations in the policy as to suicide could ever be of any avail*. The learned Solicitor-General then went into the facts of the case, as subsequently detailed by the witnesses, and proceeded:—It would not, he imagined, be disputed that the deceased took the poison in the most deliberate manner, conscious it would cause his death. The policy, he contended, extended to every case where there was a deliberate intention on the part of the individual to take away his own life, and he should submit to his Lordship that the question of *legal sanity or*

insanity, of his being in such a state of mind as to be morally accountable for his actions, was quite irrelevant. What species of insanity it might be sought to set up on the other side it was hard to say, but he apprehended it could not be the intention of the contracting parties to raise any such question. The sympathies of the jury, no doubt, would be with the plaintiff, and no doubt those sympathies would be ably wrought upon. It would be represented that this was a case where a bereaved family was struggling with a wealthy body—a question, to the plaintiff, everything, to the defendants, nothing; but these were considerations apart from the question they had to decide. His Lordship would lay the law before them. Of the facts there would be little dispute, and it would most clearly appear that the deceased took the poison, knowing the fatal effects which would result. If any question were raised as to the moral accountability of the party at the time, that, he would contend, was utterly irrelevant.

George Chapple.—I live at Pendleton, near Manchester. I am a silk-dyer. I was in the employment of Mr. Schwabe since 1839. He was a silk manufacturer. He did not live at the place of business. The business was extensive, in spinning, weaving, and dyeing. He had no partner that I know of. He attended personally to the business. He was acquainted with the conduct of the business in all its branches. He did not examine the mode in which the dyeing was carried on. I do not know who kept the books. There was a counting-house on the premises. I was sometimes in it. I generally saw Mr. Schwabe in the warehouse. He was looking over goods. I saw him there last on the 10th of January. He had not come regularly for some time before. He had been ill. He was away for as much as a week. He had not come regularly during the week before. I saw him on the 9th and on the 8th. I did not see him on Tuesday, the 7th. I do not recollect seeing him. I believe I did not see him on the Monday. During the fortnight immediately before his death he had been absent occasionally. I think he was absent a week together. There was a person of the name of Ramwell, who was the principal manager of my branch of the business. Mr. Pattison managed the weaving department. Mr. Holdsworth, who now carries on the business, was an apprentice. There were more than 40 persons altogether. We use acids in the dying of silks—all sorts of acids. We use sulphuric acid. It has always been used in our business. I never looked on it as a poison. I have taken some of it. I take some of it almost every day in a little water to quench my thirst. I believe myself it is not a poison in the state in which it comes

from the manufacturer. The acids were kept in the dyehouse. They are kept in carboys. On the Thursday I saw Mr. Schwabe in the dyehouse. I cannot say that he had given me any direction about the acids the day before. I was in another room when I saw him in the dye-room. *He went up to the acids, and I went into the room. He appeared to me to be quite distressed and wild: he said nothing, but ran up-stairs back again.* He had to pass through the yard. I do not know that he had made any inquiry about the acids within a few days before. I saw him on the morning of Friday, the 10th, between 10 and 11 o'clock. He came running into the dyehouse. He had a little bottle with him. He asked me for a little sulphuric acid to make a "mummy" (or silk pulp). He held the bottle, and I poured the acid into it out of a small jug. It would hold about a wineglassful. I did not fill it. I put in *about half a wineglassful.* I did not see any cork or stopper. He took it from me and went up stairs. He held it under the cock before he took it away. He took out his pocket handkerchief; I did not see if he did anything with it. He usually came to business about 10 o'clock. I was examined before the coroner. I saw the bottle there. There was a little sulphuric acid in it. I never saw Mr. Schwabe alive after he took away the bottle. I cannot remember that anything particular took place between me and Mr. Schwabe on the subject of acids within a day or two before the Thursday. I do not remember that he came on the Tuesday and asked what acids I had. I cannot remember that I said he did. I do not remember his telling me to send away the carboys containing the acid. I mix the acids myself. I do not remember his coming to me a day or two before the Thursday, while I was doing so. I made a statement to the coroner. I repeated a statement to another gentleman about two months after. *Cross-examined.*—Mr. Schwabe chiefly attended to the designing department. He had attained great eminence as a designer. He was in the habit of making experiments. At the time I poured the acid into the phial I spilled some of it. He washed that off. On the Thursday he seemed to me quite distracted. *I think he was not in a sane state of mind. I observed on it at the time. On the Friday he trembled so that he could scarcely hold the bottle; his eyes were very wild and his face red.* He seemed to me to be frequently agitated and distracted since November in last year. I had known him in 1843. I remember his daughter's illness. He was absent from business that year in August and September. *I believe he was put under personal restraint in October.* He returned

to business towards the end of the year. In May 1844 he went to Paris. *Re-examined.*—I gave Mr. Schwabe *the acid between 10 and 11.* I remained at the manufactory till half-past 6 in the evening. I went to Mr. Schwabe's house on the Monday. I saw Mr. Schwabe's son and his two brothers at the works about half-past 11. *I thought he seemed distracted when I gave him the acid, but I was a servant and dare not refuse him.* I did not follow and give any alarm. I knew he wanted it for an experiment. I thought so. He was frequently in the habit of making experiments.

Thomas White.—I am a cab-driver at Manchester. I knew Mr. Schwabe. I recollect hearing of his death. The day before I was going along Oxford-street, and he was at the corner of his office. He beckoned to me and got in. He told me to drive to his house as fast as I could go. This was about *a quarter to 11.* I drove to his house and rang the bell; he got out and paid me 1s. The fare is 9d. He had a pocket-handkerchief to his mouth, and his clothes were *spotted with red.* He looked very pale in the face.

Matthew Peel.—I was in the service of Mr. Schwabe as groom. I lived with him for a year about two years and a half ago. I went into his service again, and was with him about half a year before his death. I was in the house when he came home. I was sent for medical aid, and I saw him in the afternoon. Mrs. Schwabe had told me what he had said when he came home. She said he told her he had taken poison, and that he would die. I saw him more than once in the course of the afternoon. He died on the morning of the 11th. I went for Mr. Ransom, Dr. Turner, and Dr. Lyon. They all came. *Cross-examined.*—I had heard of the death of Mr. Schwabe's father a short time before this. His daughter had been ill a few days before. He was very much attached to his family. I had lately observed a great difference in him. *Re-examined.*—I might have heard of his father's death on the Tuesday or Wednesday.

Mr. Ransom.—I knew Mr. Schwabe since the latter part of 1836. I was his medical attendant. I was sent for to come to him on the 10th of January. I got to the house about a quarter to 12. I had not attended him professionally since November, 1844. I had attended his second son about three weeks before. When I arrived on the 10th I went to his room. He was lying on the bed dressed. He was conscious of pain, and of my presence. Mrs. Schwabe was there. She said he used the word "Poison," "Poison," when he came into the the house. He said nothing. I afterwards about 3 o'clock went to his place of business. I

left him about two. There was a great discoloration of the lips, and a stain upon the cheek. I could not inspect the mouth, the tongue was so much enlarged. Mr. Turner accompanied me to the works. We went to his private room. I found a cork, discoloured apparently by the sulphuric acid. There was a stain on the table, and a broken cup, containing some corrosive mixture. In one corner we found the contents of the stomach, containing some corrosive acid. Among some rubbish, shreds, and pieces of paper, in the corner, was the bottle into which this cork fitted. It contained a strong corrosive liquid. *The marks on the table were such as would be produced by sulphuric acid. The floor was stained black where the contents of the stomach lay.* I returned immediately to Mr. Schwabe. *He gave answers by signs to questions I proposed to him.* He seemed to understand them. Dr. Lyon was there. I told him I had been to the works, and found the bottle, and I appealed to him, as a man of honour and a gentleman, whether he had taken the contents of that bottle, and he nodded, as I understood, in the affirmative. I next asked was it filled with oil of vitriol? He shook his head. I asked was it nitric acid, or muriatic acid? He shook his head. I then asked was it sulphuric acid, using that term instead of oil of vitriol, and he nodded. I asked him was he willing to use any means for his recovery? He made no reply. This was about 4 o'clock in the afternoon. The stomach pump had been used in the first instance. Other remedies were applied, but he appeared to be dying. *I remained with him till 9 o'clock.* He got worse. I did not see him alive again. There was a *post-mortem* examination. The death had been caused by the action of sulphuric acid on the stomach. *Cross-examined.*—Besides attending Mr. Schwabe I knew him as a friend. He was a very imaginative person. His attention was much turned to the invention of new designs. His mind was always fixed on that subject, so much so as to render it a matter on which I expostulated with him. In June, 1842, there was a meeting in Manchester of the British Association. Mr. Schwabe's mind was much excited at that time. I recommended him to abstain from business. He went to the sea-coast, and on his return seemed to have derived much benefit from it. In the summer of 1843 his daughter had a very dangerous illness. He paid her the greatest attention, night and day, but seemed remarkably cool. The early part of her sickness, and most severe, was about two or three weeks. His coolness seemed to me to be the result of a forced restraint on his feelings. Afterwards the family went to the sea-side. While they were there in October, I was sent for

to Mr. Schwabe. He was suffering from a slight feverish attack. In the course of a few days I noticed considerable excitement of mind. *He was in a decided state of insanity.* Mr. Turner attended him at the same time. *He was placed under restraint in his own house.* He continued in that state two or three weeks. He then recovered. For some time, after he was much depressed when the subject was averted to. I had not seen him shortly before the 10th of January. It frequently happens that on the near approach of death a man whose mind is deranged *recovers his consciousness*, especially when the system has sustained a great shock. I have frequently seen Mr. Schwabe in a state of great excitement, not maniacal excitement, but likely to lead to it. *Re-examined.*—I speak of consciousness returning at the approach of death, when consciousness has been absent before. I do not mean that that was *the case with Mr. Schwabe.* *By the Judge.*—The acid remaining in the cup and bottle was not in a *dituted state.* The quantity was very small; no more than would remain after taking a draught.

This was the case for the defendants.

Mr. KNOWLES, for the plaintiff, commenced by saying that the question in dispute was one of great interest to his client, whom it was now sought to deprive of the benefit of the contract her husband had made with this office—by the occurrence of an event which was at the best left in mystery and doubt, but as to which there could be no doubt that, whether the poison was taken by accident or design, the unhappy man was not in a *sane state of mind at the time.* He said the case quoted so confidently on the other side had no application. In that the only evidence of insanity was the act of self-destruction itself. Here was the strongest evidence that the party was insane. The exception in the policy in "*Borrodaile v. Hunter*" was, that the party should die "by his own hand." Here the term was "suicide," and it was taken for granted throughout *that case*, that if suicide had been the word used, the office beyond all doubt would have been liable. The question would come to this, whether Mr. Schwabe at the time he did the act was in such a state of mind as—had he committed fatal violence on another—would have exonerated him from responsibility? This was the view of the case taken by the judges in "*Borrodaile and Hunter*," and several other cases were then quoted where the word "suicide" was used, in which juries had found for the plaintiffs, on the ground that the party, at the time he took his own life, was in a state of insanity. Even the phrase "commit" suicide showed clearly that a felonious act was the one which the office

had in contemplation. But, even if there were any doubt, the words were those of the office itself, and must be taken most strongly against them. Could there be any doubt that Mr. Schwabe was insane? In the circumstances of his business and in his family there was everything to render life desirable, while it was also in evidence that he was a man of that excitable temperament in whom insanity was most likely to supervene, and there could be no doubt from the evidence of the witnesses for the defendants, that Mr. Schwabe was *at the time insane, and immediately before this transaction showed every symptom of insanity*. Even supposing it were placed beyond a doubt that Mr. Schwabe took the poison intentionally, and not by accident, a matter which the evidence left in total uncertainty, no inference could be drawn from the apparent collectedness of Mr. Schwabe just before death. That his signs were correctly interpreted by Mr. Ransom might be a matter of doubt. It was quite possible his inferences might have been incorrect, and, even if they were not, it was known to all that shortly before death insanity frequently disappeared. The learned counsel went minutely through the facts of the case, and contended that the verdict must be for the plaintiff.

Mr. Justice CRESSWELL, in summing up, stated that this was an action on a policy of insurance for the sum of £999, by the terms of which policy it was provided that if the insured should commit suicide, or die by duelling, or by the hand of justice, the policy should be void. He would direct that, to find for the defendants, *they must be satisfied that Mr. Schwabe died by his own hand, and that he was then able to distinguish right from wrong, and able to appreciate the nature of his act as an accountable moral agent*. He used precise words, as possibly this ruling might be called in question. The case of "*Borrodale v. Hunter*" had been referred to on both sides, and if that case were in point he should consider himself bound by it, as the decision of one of the Courts in Westminster Hall. But the terms of the exception in that policy were in case the party should die "*by his own hand*," and Mr. Justice Erskine and Chief Justice Tindal both treated the expression "*suicide*" as one of a different import—as an expression well known—meaning a felonious taking away of one's life; and from the judgment of those learned judges there seemed little doubt that if they had had in that case to consider a policy in the same terms as the present, they would have held that to bring the case within the terms of the exception the party taking his own life must have been an accountable moral agent. He would direct them that to find for the

defendants they must be satisfied that Mr. Schwabe died by his own voluntary act, and that at the time he was able to distinguish right from wrong. The burden of proof, so far as showing that the party died by his own voluntary act, lay upon the defendants; but, if that were proved, then it lay on the plaintiff to show that he was unable to distinguish right from wrong, as, until the contrary was proved, every man must be taken to be accountable for his actions. The jury, after a few minutes' deliberation, returned a verdict for the plaintiff.*

[REMARKS.—Independently of the important relations which this case has to the subjects of Suicide, Insanity, and Life Insurance†, it presents some points which are of interest in relation to Forensic medicine.

1. *Quantity taken*.—According to the evidence, the deceased must have taken about six drachms of sulphuric acid. The medical witness, in answer to a question by the judge, said that the acid remaining in the bottle and cup, out of which he had taken it, was not in a diluted state. It also appears that the floor was stained black where he had vomited—a result which would not happen with sulphuric acid when much diluted. The person, however, who gave the acid to the deceased in a bottle, observed that he held it under a cock of water before he took it away. The cab-driver deposed that when he saw him, his clothes were spotted with red. This was immediately after the acid had been swallowed; and it is not the effect of concentrated sulphuric acid to produce red stains on black cloth. The probability is that the acid was slightly diluted.

2. *Duration of the case*.—The acid was taken about half-past ten o'clock in the morning, and the deceased died the following morning; he thus survived its effects about twenty-four hours.

3. *Acts of volition and consciousness after taking the poison*.—In general this acid produces the most intense pain, and renders the individual powerless. It also speedily causes violent vomiting. This case, however, shows that a person may either not immediately suffer from, or effectually conceal, such symptoms. It was proved that the deceased, after swallowing the acid, beckoned to a cabman, and told him to drive to his house as fast as he could. The deceased had at the time a handkerchief to his mouth, and the only circumstance noticed by the witness was, that he looked very pale. The medical evidence proved that for some hours afterwards he was conscious of his condition: indeed, as a general fact, consciousness is retained in these cases, until the near approach of death.—ED. GAZ.]

* Times Report.

† See page 814.

Medical Intelligence.

RAPID DEATH FROM OXALIC ACID.

DR. OGILVY, of Coventry, has communicated to the *Lancet* a case of poisoning by oxalic acid, in which it is probable that death took place within *three minutes* after the poison had been swallowed. The sister of the deceased had been absent from the room about that period, and on her return found her dying. The quantity of poison taken could not be determined. The only other remarkable circumstance in the case was, that the coats of the stomach were so softened, that on an attempt being made to remove the organ, they were lacerated by the weight of the contents. This was probably a chemical action post-mortem. The intestines and left lobe of the liver were also found softened, as if by transudation. We believe this to be the most rapidly fatal case on record.

UNIVERSITY OF LONDON.

M.B. FIRST EXAMINATION, 1845.
EXAMINATION FOR HONOURS.

Anatomy and Physiology.

Ransom, W. H. (exhibition and gold medal)
University College.
Huxley, Thomas H. (gold medal), Charing-cross Hospital.
Brinton, William, King's College.
Reid, John, King's College.
Johnson, Walter, Guy's Hospital.

Chemistry.

Ransom, W. H. (exhibition and gold medal),
University College.
Randell, Cornelius W. (gold medal), University College.
Johnson, Walter, Guy's Hospital.
Reid, John, King's College.
Brinton, William, King's College.
Huxley, T. H., Charing-cross Hospital.
Day, John Climençon, London Hospital.

Materia Medica and Pharmaceutical Chemistry.

Brinton, William (exhibition and gold medal)
King's College.
Johnson, W. (gold medal), Guy's Hospital.
Day, John Climençon, London Hospital.
Ransom, William H., University College.
Reid, John, King's College.

HYDROPHOBIA.

I SAW a young girl who, while standing at a hall door, had her apron torn by a mad dog that made a snap at it in passing. She got a needle and thread, and sewed up the rent; and not having a pair of scissors by her, she cut off the thread with her teeth; and she got hydrophobia and died of it.—*Professor Colles's Lectures.*

PATHOLOGY.

DISCHARGE OF TEN LUMBRICI THROUGH AN ABSCESS IN THE RIGHT THIGH.

M. COMBE narrates the following remarkable case:—A healthy married woman, aged 36, mother of four children, became attacked with severe pain in the abdomen, accompanied with an erysipelatous redness over the hypogastrium; she had also the symptoms of a catarrhal fever which was at that time epidemic. The pain and erysipelatous redness disappeared on the third day, but on the following morning a painful swelling presented itself in the right inguinal region, and was attended with redness occupying the whole front part of the thigh. The patient had shivering, vomiting of green matter, a small frequent pulse, red tongue, dark-coloured urine, pain in the head, sleeplessness, and dilatation of the pupil. She complained of intolerable burning pain in the thigh, attended with a sensation as of some foreign body crawling about in the neighbourhood of her groin. There was constipation from the commencement of the attack, the patient refusing to take purgatives. On the 12th day an abscess formed on the upper and inner part of the thigh, about four fingers-breadth below the fold of the groin; this was covered with a soft poultice, and shortly burst, discharging a large quantity of stercoraceous matter, having a most intolerable stench. Very shortly a whitish body presented itself at the opening of the abscess, which turned out to be a lumbricalis worm (*spulwurm*). Upon applying slight pressure to the abscess this creature was evacuated, and followed by nine others of the same kind; they measured from 12 to 27 centimètres (or from 5 to 10 inches) in length; they were alive, but very soon died. A purgative was now taken, and followed by a fecal evacuation per anum, together with the discharge of a large lumbricalis by the same passage. In less than a month afterwards the patient was perfectly recovered. M. Combe considered that the presence of these worms excited intestinal inflammation, which led to perforation.—*Schmidt's Jahrbücher*, Heft 3.

BOOKS RECEIVED FOR REVIEW.

Müller's Archiv.—Eisenberg on Diseases of the Feet.—Report of the Montrose Lunatic Asylum.—Bennet on Inflammation, &c. of the Neck of the Uterus.—Chelius's Surgery, Part 5, by South.—Cooley's Pharmaceutical Latin Grammar.—Report of the Dundee Lunatic Asylum.—Meigs on Diseases of Females.—Robertson on Gout.—Copland's Dictionary of Practical Medicine, Part 10.—The Saint-Louis Medical and Surgical Journal, No. 3.—Cosmos: A Survey of the Physical Phenomena of the Universe. By A. Humboldt. Vol. 1.—Chelius's Surgery, Part 6.—Wilson's History of the Middlesex Hospital.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Aug. 23.

BIRTHS.	DEATHS.	Aver. of 5 yrs.
Males... 576	Males... 446	Males... 491
Females . 553	Females . 398	Females . 472
1129	844	963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	108
NORTH—St. Marylebone; St. Pancras; Islington; Hackney (Pop. 366,303)	146
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London (Pop. 374,759)	168
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar (Pop. 393,247)	224
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich (Pop. 479,469)	198
Total	844

CAUSES OF DEATH in the Week ending Aug. 23.

Col. A. Weekly Averages of 5 Summers; Col. B. of 5 Years.

	A.	B.
ALL CAUSES	844	904 963
SPECIFIED CAUSES	843	897 954
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	202	198 184
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	109	101 106
3. Brain, Spinal Marrow, Nerves, and Senses	144	158 159
4. Lungs, and other Organs of Respiration	209	229 292
5. Heart and Blood-vessels	25	21 24
6. Stomach, Liver, and other Organs of Digestion	69	88 71
7. Diseases of the Kidneys, &c. ...	4	6 6
8. Childbirth, Diseases of the Uterus, &c.	6	9 10
9. Rheumatism, Diseases of the Bones, Joints, &c.	8	6 6
10. Skin, Cellular Tissue, &c.	2	1 1
11. Old Age	47	55 70
12. Violence, Privation, Cold, and Intemperance	18	25 26

The following is a selection of the number of Deaths from the important special causes:—

Small-pox	12	Convulsions	45
Measles	62	Delirium Tremens ..	4
Scarlatina	14		
Whooping-cough ..	25	Bronchitis	14
Croup	8	Pneumonia	40
Thrush	10	Phthisis	124
Diarrhoea	35	Dis. of Lungs, &c. ..	5
Dysentery	3		
Typhus	22	Teething	21
		Gastritis	0
Hæmorrhage	1	Enteritis	16
Dropsy	19	Peritonitis	2
Debility	22	Tabs Mesenterica ..	13
Sudden deaths ..	5	Dis. Stomach, &c. ..	3
		Dis. of Liver, &c. ..	5
Hydrocephalus ..	35		
Apoplexy	25	Childbirth	5
Paralysis	8	Dis. of Uterus, &c. ..	1

REMARKS.—The total number of deaths was

60 below the summer and 119 below the annual average. The deaths from Zymotic diseases, with the exception of Measles, Whooping-cough, and Diarrhoea, are below the averages. The mortality from Measles and Diarrhoea is still on the increase, the deaths being 38 above the weekly averages, which are the same for the season and the year, *i. e.* 24. In the East districts, the mortality is above the averages. In all the others, it is below both averages.

ROYAL OBSERVATORY, GREENWICH.

METEOROLOGICAL SUMMARY

For the week ending Saturday, Aug. 23.

	Max.	Min.	Mean.
Height of Barometer	30.07	29.18	29.68
" Thermometer ..	67.7	44.4	56.5 ^a
Self-registering do.	— ^b	36.6	
" in the Thames water	59.5	58.2	

^a From 12 observations daily. ^b Sun.

RAIN, in inches, 0.81: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 6° above that of the climate of London for the year, but 6° below the mean summer temperature. The extreme range in the thermometer was 62.5°.

NOTICES TO CORRESPONDENTS.

Received.—Dr. A. Harvey, Aberdeen; Mr. W. Clapp, Dreadnought; Dr. Ritchie, Dr. F. H. Ramsbotham; Mr. Newnham; Mr. R. Drutt; Mr. T. Bourne.

Dr. S. Palmer.—We do not think any good would arise from the insertion of the letter. We have already (p. 564) expressed a very high opinion of the *Pentaglot Dictionary*, and can confidently recommend it as a useful companion. As the author is going to publish an *ENGLISH-FRENCH INDEX*, the objection taken to it in its present form will be removed. Considering the immense labour which the author must have bestowed upon it, we regard it as one of the cheapest works that has issued from the press.

We shall be obliged if our Correspondents will address all advertisements and orders for the journal to the Publishers.

Dr. G. L. Ely, Rochester.—The regulations of the Stamp Office require that the journal should be printed on *one* sheet. Either all the advertisements must be paged, or the paging of the tables must be omitted. It was thought advisable to adopt the latter plan. The paging of the advertisements would be attended with much inconvenience, and would justly create dissatisfaction. The tables, if necessary, may be easily separated and bound in at the end of the volume, pasted back to back.

Mr. J. Harrison, Bristol.—The cases shall be inserted as early as possible, and a proof sent.

Dr. W. Cooke.—The communication is not suited for our pages. It is left with the Printers.

Dr. George Robinson, Newcastle.—The lecture will be inserted. The other papers may be forwarded when ready.

Dr. A. Harvey.—The correction in Part 4 has been made.

Mr. Robert Smith's case of Supposed Poisoning will be inserted.

Dr. W. B. McEgan's letter arrived too late for insertion this week.

The communications of Dr. Hake, Dr. Dick, Dr. Davies, Dr. Alhutt, and Mr. France, in our next.

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURES

Delivered at University College Hospital,

By DR. C. J. B. WILLIAMS, F.R.S. &c.

[Taken in Short-Hand by our own Reporter, and revised by the Professor himself.]

LECTURE IV.—May 29th, 1845.

Cases of dropsy from diseased liver and kidneys—History, with remarks—on the origin of the disease. On erysipelas and its treatment; on the diagnosis; physical signs of diseases of the liver with ascites—on the treatment: paracentesis—symptoms of diseased kidneys without albuminuria—Post-mortem examination, with remarks—on the nature of the effusion in the abdomen—on the induration of the liver and kidneys; explanation of its effect on the function of the kidney.

We have another post-mortem examination to notice, in the case of Stephen Bucknell; and I shall also mention the case of Patrick Kelly. They were both cases of ascites, with diseased liver, and there were other points of resemblance, and some differences.

“Stephen Bucknell, aged 58, admitted March 11th, of rather tall stature and very stout conformation, ruddy complexion: by occupation he has been a keeper of accounts in a lime-yard since 1827, but he left it two years and a half ago, and went into the country to keep a small farm. He has had sufficient meat, drink, and clothing, and says he has never drunk to excess.” I judge, however, from other accounts, that he dealt pretty liberally in liquor. “He was a man of sedentary habits, his occupation not requiring considerable activity. The last two months he has been living at Paddington. His habitual state of health was good till five years ago; he was stout and strong, and as active as could be expected from his bulk. Between the age of 42 and 45 he was subject to gout, but not severely. When it first occurred, he had an eruption similar to that which he has at present over the arms and legs—that is, an eczematous eruption. On the last occasion he had some warm salt-water baths at Gravesend, and these removed the eruption, which desquamated. He has had no gout since that time. He continued in good health until three or four years ago, when he found his health declining. He then gave up his situation in consequence, and soon went into the country, but was not in good health when there.” These symptoms of breaking up of health

date back to a period of four years. “In October 1843 he had a severe attack of erysipelas of the face and other parts of the body. He was delirious for a short time. He was confined to bed for two months.” That is a long period for erysipelas of the face, but we have here something to account for it. “When he had been ill for about a fortnight or three weeks, after having been treated by medicine, he was bled, he says, to two pints and a half, and about the same quantity was supposed to have been lost by the insecurity of the bandage applied to the arm. He was very faint from the loss of blood, and has been subject to chilliness ever since that time.”

Now erysipelas which occurs in my experience in these days is never such as to require blood-letting to anything like that amount; it is a low kind of inflammation, with fever, which a very little depletion is enough to reduce to a typhoid form, and this is one of the worst features of the disease. We have had several instances of erysipelas of the head and face during the last session, and you saw that the affection was removed without any bleeding at all. If there be severe pain of the head, three or four leeches applied to each temple are all that is required; and even the loss of that small quantity of blood has been followed by unusual faintness. I introduce this point in the history of the patient, to remind you how much the loss of blood had to do with the injury of his general health. According to his own account, he never recovered his strength from that time—he never was the same man afterwards, were his own words.

“The erysipelas remained for some time, alternately diminishing and increasing; an eruption the same as the present (eczema), preceded by heat of skin, appeared in the progress of the erysipelas, first on the face, then in all parts of the body. He has never since been free from that eruption: it was better in the summer, but again returned in the early part of the winter, with a slight return of erysipelas every two or three weeks.”

This term erysipelas is most likely applied to an increase of the eruption where it is not only superficial vesiculation and discharge, but a considerable amount of swelling of sub-jacent parts. This form of eczema has been called eczema erysipelatodes; the two diseases being combined. You will observe that the time when the attacks of eczema became worse, was on passing from the warm weather to the cold—he was better during the warm weather, and was worse when it became cold—just under the same circumstances that gout or rheumatism becomes worse, and I may add the circumstances under which the excretions are checked and injured. That deficiency of excretion we

shall find a predominant feature throughout the whole of the case.

"The eruption, on scratching it to relieve the itching, discharged blood and water. The parts affected by it, especially the legs, were very sore; he has not had erysipelas since last Christmas, except some heat in the face. The present attack began about seven weeks ago, when he observed his legs became swollen and stiff. They were still very sore, and discharged a great deal of fluid; the œdema in them did not reach much higher than the knees. Dropsy of the abdomen began to appear about three weeks after the anasarca, with a sense of pressure." Observe that is his own account: the swelling of the abdomen began at that period, but being a man of large bulk, there might have been some liquid in the abdomen before he discovered it, and this is the more likely as he was not moving about much to test the amount of weight which he carried. "He lost his appetite, and was very thirsty. He has had a little pain in both sides, below the ribs, when lying on either, but more in the left side than in the right. He has had nausea and vomiting occasionally during the last month, but has not rejected the medicines, which he has been taking so much as a clear fluid in a considerable quantity, with a little blood in it at times"—a kind of pyrosis sometimes tinged with blood, which may be taken in connexion with the disease as an indication of obstructed liver disease. "His mouth has been rather sore for some time. There has been a little palpitation during the last three or four weeks. His respiration has been impeded from the ascites, and he has had frequent rigors since the dropsy came on.

"Present state.—Has had rigors to-day; feels soreness of the legs and body, and prostration of strength; is fatigued with coming to the hospital. His skin is more sallow than natural, and a slight yellow tinge is present in the conjunctiva. An eruption is seen on the abdomen of an eczematous character,"—I need not enter into the description—"there is also some on the legs, which are œdematous, the œdema extending some way up them and the thighs, particularly at the middle and posterior part. There is not much œdema in the walls of the back; cheeks rather sallow; his eye-sight has been declining for some time, but more so during the last year. Respiration is impeded on exertion. On examination of the chest, there was found a deficiency of resonance on percussion at the lower part of the chest in front, below the level of the mamillæ, and both lateral regions sounded dull on deep percussion;" but, I may remark, not more than may be accounted for by the swelling of the abdomen; the diaphragm being pushed up would cause dulness at the

lower part of the chest. There is another sign, which I should refer to the same cause. "The stroke-sound is healthy behind; the breath-sound is tubular in the middle part of the chest behind, but more so on the left side." When there is an accumulation in the abdomen, and the lungs are pressed up not only at the margin, but even at the centre, and thus compressed, the breath-sound, and also the voice-sound, become more tubular than usual. It may appear extraordinary that it is more so on the left side than the right, but if the liver be not enlarged, this is a natural effect, because the heart is in this situation, and the counter-pressure given by the heart, together with the increased bulk below the diaphragm, is such as to compress the left more than the right. On the other hand, where there is swelling of the abdomen, with enlargement of the liver, then the modified sounds of the lung are more on the right side than on the left. "The breath-sound is clear at the lower part of the chest"—shewing, therefore, that this dulness was not owing to any liquid effusion, which would have the effect of pushing away the lung, but must have been due to something pushing the lung in contact with the walls of the chest, so that the air entered the margin as far as the lung reached, and hence the breath-sound. "He had palpitation of the heart this morning when he came to the hospital: there is no murmur in the heart. He has no appetite, but considerable thirst. He vomited this morning a small quantity of white frothy liquid. The tongue has a yellowish fur at the back, but is red at the apex. The abdomen is much distended with fluid, and is tympanitic on percussion only at the upper part as he lies on his back"—that is, between the umbilicus and the epigastrium. The space there was resonant on percussion, but even in that situation there was a thin layer of liquid detected by fluctuation and by different modes of percussion. "He is not subject to griping of the bowels; his bowels have been opened. The liver cannot be reached. His urine has been scanty and high-coloured for three weeks. He does not know any cause for the dropsy."

On the examination of the abdomen, I came to the conclusion, as we generally do in these cases, at first sight, that the prominent symptom—the ascites—arose from diseased liver, and I immediately directed my investigations to that organ, but in the distended state of the abdomen the liver could not be felt in any situation. I formed an opinion with regard to the diagnosis at first, but I never was able to feel the liver until after the operation of paracentesis abdominis was performed. This took place on the 16th of April, and a day or two afterwards this comment is given: "The edge of

the liver is now to be felt in the epigastric region, distinctly presenting a rounded margin, and resisting, as if of hard consistency, but it is not to be felt at all in the right hypochondrium below the margin of the right ribs." Afterwards, when the abdomen was less distended, again and again I pointed out to you this portion of the liver, just enough to give us a sample of its condition.

Without going into the further particulars, which are recorded very accurately, I will now advert to the nature of the case, and make some observations on the diagnosis and treatment.

As I said before, I came to the conclusion, on first seeing this patient, that it was a case of ascites from diseased liver. The diagnosis was too plain to need any comment here. It was evident from the great enlargement of the abdomen—enlargement with fluctuation in all the most dependent parts of the cavity, while the tympanitic sound arising from the intestines was still in the anterior parts as he lay on his back. Why did we conclude that the dropsy arose from diseased liver? One great reason was this: it is the cause in nineteen cases out of twenty, where ascites prevails to this extent; and there were further reasons for coming to the same conclusion. In the first place, the skin was slightly jaundiced, but it was hardly yellow enough to make us sure that it was owing to bile; it might be ascribed to that condition of the blood which we see in Bright's disease, in the advanced stages of albuminuria. But we refer to the conjunctiva to determine that point. On looking to this membrane we found it was distinctly yellow, not exhibiting a mere mixed muddy yellowness, such as is seen in cases of albuminuria, but a distinct yellow tinge, evidently arising from an admixture of bile. But the yellowness of the skin could also be shown to be from bile. Although the skin was pale, yet there was colour enough from the blood-vessels to make the hue of the skin a reddish-yellow, constituting a natural sallowness or swarthy tint; but by removing the vascularity by pressure of the finger, the true bilious yellow was rendered more distinct. This is, in fact, a test for the slighter descriptions of jaundice, particularly in persons whose complexions are not very fair. This was an additional mark of the liver being diseased; but, thirdly, we had the condition of the urine. I have not mentioned that, because it comes in the after reports. The urine was passed in a scanty quantity, turbid, high-coloured, and depositing a pink sediment. There was also a good deal of common lateritious sediment—lithate of ammonia; but on the surface of this, subsiding after the other sediments, was a fine bright rosy-pink deposit, corresponding with that which is

described as occurring especially in connexion with organic disease of the liver.

But we had better evidence than all this that there was disease of the liver in the examination of the liver itself. As I stated before, this did not come out on the first examination, in consequence of the distended state of the abdomen; but even then I came to the conclusion that the liver was in an altered state, otherwise we should have had evidence of its presence in its proper position. That evidence is this. In those rare cases in which there is ascites without an alteration in the form of the liver, the organ lies in its usual situation with its margin about an inch and a half below the margin of the chest at the epigastrium, presenting at that spot some dullness on percussion, gradually shading into the tympanitic sound of the intestines that lie underneath. When the liquid effusion is more extensive, it comes between the wall of the abdomen, and constitutes a fluctuating medium which can be sensibly displaced by pressure. This is still more perceptible where there is enlargement of the liver, and which is a common case. In such cases (ascites with enlarged liver), if we do not feel the liver by the ordinary mode of examination, by pressing more deeply the hand comes in sudden contact with it, after having displaced the superficial layer of liquid. This was not to be perceived here; therefore it is clear that the liver was not in its usual situation. So far, we had negative evidence, but we had further positive evidence of disease existing in it. After the operation was performed, a portion of the liver then became perceptible at the epigastrium, and we could feel that it was in an altered state; it was far more resisting than natural, giving the idea of induration. It was felt to be rounded, as well as resisting, at its lower edge, which shewed a considerable change in form. The left lobe of a healthy liver tapers away till it becomes very thin; therefore, instead of the resistance being equal below to what it is above, it is greater as we go upwards. But we found it in this case to be the same all the way down, shewing that there was an induration and thickening of the margin of the left lobe: the right lobe was out of our reach in the situation we found it after death; but this was enough to give us a direct physical proof of alteration in the state of the liver, and therefore warranted the diagnosis of ascites from diseased liver. I do not now enter into the particulars of the mode of causation in which disease of the liver causes ascites, as I have already done that several times.

This diagnosis was very distinctly made out both with regard to the state of the liver, and with regard to the ascites, in spite of the great thickness of the walls of the abdomen. The walls were very thick, as

mentioned in the account of the tapping. After trying various medicines I saw that they were of no use, and I determined to have the patient tapped. Here is the report. "The operation was performed by Mr. Liston, but the walls were so thick that the trocar brought away no fluid." Mr. Liston inquired whether it was going to be a case of dry tapping, but he was equally sure with myself that fluid was present. The fact was, the trocar was not deep enough to go through the walls, which were between three and four inches thick. "The whole length of a bistoury was plunged in, and only a few drops escaped. A female catheter was finally plunged in through the aperture, and then a yellow-coloured fluid flowed abundantly. It was very albuminous, and contained a little bile. About thirty pints were drawn off.

It is interesting to recollect that notwithstanding the great thickness of the walls of the abdomen, yet the diagnosis was distinctly made, both as to the fluctuation and the feeling of the liver. You should not be discouraged by difficulties in attempting nicety of diagnosis.

The next question is, was there any other disease present? After the patient had been under notice for some time, we found that the kidneys were also wrong in their function, but as to what disease was present, I could not form a distinct opinion. The urine was turbid, scanty, generally high coloured, but did not abound in urea, nor was the specific gravity very high. In fact, it appeared scanty in the urinary principles, but there never was albumen from beginning to the end; which surprised me, knowing as I do that some amount of Bright's disease, granular degeneration, is apt to occur in the advanced stages of disease of the liver. But there was something the matter with the kidneys, inasmuch as they would not act, and no diuretic ever produced a considerable impression upon them. The quantity of urine passed was from twelve to sixteen ounces per day, scarcely ever more, sometimes less, and of low specific gravity. I hoped that this failure of function was owing to the pressure to which the kidneys were subjected by the liquid in the abdomen; and that after the operation of paracentesis we should be able to make them act more freely, and in proportion as we should succeed in doing that, I was sure he would be benefitted in other respects—that he would suffer less from the cutaneous eruption, which I take to be generally connected with imperfect action of the kidneys—that the other functions would be better discharged, and that he would be in better health, strength, and so on. But I was disappointed in this expectation; after the operation the urine was not increased

more than before; therefore it confirmed the supposition that more than pressure was concerned in the arrest of the secretion.

Then comes the subject of treatment. It was obviously an indication to draw off the superfluous fluid accumulation which had taken place in the abdomen, and to diminish the congestion of the portal system which was the immediate cause of it; it was an object, though I have mentioned that we failed in accomplishing it, to increase the urinary secretion; and it was a third object to keep up the general health and strength, which had been very much lowered.

The first indication was attempted by hydragogue purgatives. In the first instance cream of tartar was exhibited in large doses, and it produced some temporary benefit; but as it began to distend the abdomen with flatus, caused griping, and otherwise disagreed with him, it was discontinued. On referring to the report you will find that the abdomen was diminished in size after four or five doses of the cream of tartar, and he began to be better; but still, as there was not enough impression made, and loss of time was of importance, I thought it right to try more active remedies of the same class. Elaterium was given, and the mode in which it was exhibited caused no sickness; there was a little pain in its operation, but very transient. A quarter of a grain was given in a pill, with a drop of creasote, and a drop of croton oil, by which its operation is rendered more speedy, and there is less tendency to nausea. This acted very freely on the intestines, causing very copious evacuations, which brought on some faintness, so that it was necessary to give it less frequently, and it reduced his size for a time. Afterwards the disease again gained ground, and we were obliged to resort to paracentesis abdominis.

With regard to another indication, the secretion of urine, I may mention that I used among various diuretics, one that I have found of great use in diseased liver—nitric acid with extract of taraxacum, but it produced no impression here, nor did any of the various other diuretics given.

The other indication, that of keeping up the general health, was attempted to be fulfilled by combining with the diuretic medicines a little quinine, varying this with other tonics from time to time, and allowing a liberal supply of animal food.

There was another indication which I did not overlook, that of endeavouring to reduce the disease of the liver. Supposing that congestion or chronic inflammation might be concerned, if not in its production, at least in its continuance and increase, I used a blister to the region of the liver, and friction with strong iodine liniment. Some

uneasiness which had been felt there was thus relieved, but no further good resulted.

The benefit derived from the operation was very great to his general feelings, and to no part more so than to the legs. It entirely removed the œdema from the legs for a time, and placed him in that respect in a much more comfortable state. They had largely increased before the operation, so much so as to threaten a gangrenous state of the limbs. On the day of the operation they got better, showing that it was much dependent on the pressure of the fluid in the abdomen.

The patient died on the 26th of May. It cannot be said that he died from the amount of dropsical effusion, for there was not so much as there had been on previous occasions; but he died worn down by the disease. I do not mean that the disease taxed his strength greatly, or exhausted the nutritive materials, but I think he may be more properly described to have died in a state of vitiation of the fluids, and from the diseased condition in which the organs were, and of which dropsy was one of the symptoms. He died in a fainting fit, rather suddenly, considering the condition he had been in a few days before.

I was not present at the post-mortem examination, though I saw some of the organs. The lungs were healthy, except a slight degree of emphysema towards the posterior part of the lower lobes of both. The heart was healthy, with the exception of slight hypertrophy of the walls of the left ventricle. The left auriculo-ventricular orifice could scarcely admit the entrance of two fingers—rather small. The peritoneum was filled with serous liquid, probably not less than thirty pints. There were also slight traces of peritonitis, namely, opacity of the serum which was accumulated of the pelvis, and a few soft granules on the abdominal walls in the right iliac fossa. Some appearances of lymph are so commonly found in all protracted cases of ascites, that it is a matter of question whether it can be always put down to the presence of inflammation or not. It was first pointed out by Hewson that the natural liquid of the peritoneum contains fibrin; that it is not only serum but liquor sanguinis; therefore, we cannot be surprised, when morbid effusion takes place, that although it be the result of dropsy unaccompanied with inflammation, yet that it presents slight traces of lymph. Whatever deposit of this kind does occur, is apt to preponderate at the lower part of the body, and hence it was found in the pelvis.

The liver was reduced in size chiefly at its margin, which was retracted, thick, and rounded, and except towards the epigastrium it did not reach lower than an inch above the margin of the ribs. Not seeing the

position it occupied, I cannot say how far it corresponded with what was felt in his lifetime, but I imagine that it did so exactly. If it had been an inch below the ribs, and in contact with them, one could have felt it, but it was not; it lay further back, and that is very important to be observed in connexion with what I was saying just now—that the liver did not occupy its usual place. It not only was shrunk in some degree in size, so that there was no sign of enlargement, but it fell further back than usual, and I attribute that, as I shall afterwards explain, to the remarkable weight of the liver connected with its extreme density and hardness. Its weight was great, not less than four pounds and two ounces: although it was smaller in its expanse than its natural state, yet its weight was greater—half a pound above the average. It was of a buff yellow colour; its capsule was not thickened, but under it the surface exhibited numerous small yellow granular prominences, which communicated a roughness to the feel—little granules projecting under the peritoneal covering, and distinctly corresponding in character to the granular projections in several other cases which we have had of cirrhosis of the liver. But on a further examination it exhibited some differences in these particulars. Its texture was exceedingly dense and firm, and exhibited in all parts bright yellow spots of the size of pins' heads, or even larger. The tissue in the intervals was of a light pink brown colour. Under the knife it imparted the sensation of cutting fibro-cartilage—it seemed quite to grate under the scalpel. The openings of the canals on a section being made seemed to be less in number and smaller than natural. With the microscope the yellow points were found to be composed of cells resembling the liver cells; the granules were more numerous and smaller than usual in each cell. There did not appear to be the usual number of fat globules in each cell; there was a great deal of filamentous tissue in the composition of each mass.

The kidneys were considerably increased in size; the smallest weighed $8\frac{3}{4}$ ounces. The capsule was not adherent, and when taken off did not separate any granules from the organ. It usually does this in the ordinary form of granular degeneration both of the liver and the kidney, but it did not do so here. The surface of the kidney was not, however, quite smooth to the touch, and exhibited a mark mottled appearance, with a predominance of pale patches. It was of a paler colour than the kidney usually is, and the pale patches coarser or larger than natural, as if there were a deposit in the interstices. A section showed that the tubular tissue, and the mucous surfaces, were

healthy, but the cortical substance, which appeared to bear a larger ratio than usual to the whole size of the organ, was infiltrated throughout with a deposit of a light yellow colour of a slightly granular aspect—nothing like the same appearances that granules have in the ordinary form of Bright's disease. There were also several cysts containing about a thimbleful of thin brownish liquid in each. Some were in the substance of the organ, one or two immediately under the proper capsule. Under the microscope the cortical substance did not present the cells usually seen in Bright's disease; there were a number of small granules and some fat globules.

This is the account of the post-mortem examination, which, so far as it goes, is pretty satisfactory. It was difficult to get permission to make the post-mortem examination, and it was not made at the usual hour; but so far as regards the two important organs, the liver and the kidney, we have obtained the above results which are enough for us.

The change found in the liver was as completely as possible what I expected. I expected a cirrhose contracted liver; the remarkable resistance over it in the epigastrium warranted the supposition that it was considerably indurated. There is a difference in appearance in this kind of disease of the liver from others which we have had in the course of the season. We have had several specimens exhibiting a good deal of the morbid anatomy of disease of liver, but this is a new variety, though I have seen several instances of it before. I think it ought to be classed with granular diseases of the liver—cirrhosis, merely presenting certain accidental modifications. The change was obviously dependent upon interstitial deposit. It was not a growth of the liver; it was not hypertrophy of the organ, an increase of the natural constituents; for the ordinary constituents were much wanting, and were only to be traced here and there; but it was something deposited throughout the whole substance, and this, on a microscopic examination, with which Dr. Quain has supplied us, appears to have been a matter containing cells like those of the liver, but differing in their constituents being more granular: this may be considered a specimen of caco-plastic deposit of a very low-class. But there was something beside the granules; there were filaments in considerable abundance, something in structure like fibro-cartilage, pervading the whole mass. It was this deposit that superseded the natural secreting structure, and increased the density of the liver, causing its great induration. This, together with the contractile process to which that matter always tends, had likewise the effect of obstructing

the vessels, and causing the diseases of which we had the proofs—obstructing the blood-vessels, and thus leading to the production of abdominal congestion first, and ascites as its result; obstruction also of the minute hepatic ducts, thus interfering with the excretion of bile, causing jaundice.

I have not time to dwell upon further particulars about this peculiar change in the liver; but I may point it out as a kind of liver apt to occur in habitual drunkards. Another person in whom I met with it was one who was always stippling, morning—noon, and night, and who died in a sudden attack of mere bronchitis, from which he could not rally, I believe owing to the want of sufficient excretory organs to rid him of the effect of the inflammation. But in that case the liver was harder and more enlarged, tough, and yellow, than it was in this case, closely resembling cow's udder.

In the kidneys a similar deposit appears to have taken place. The substance of the kidneys was increased in size and in hardness by this sort of interstitial matter; but here its microscopic structure was more granular than in the other case, wanting the cells which are dispersed throughout the deposit in the ordinary forms of Bright's disease. This, I think, is enough to account for the interference in the functions of the kidneys—to show why they did not secrete urine to a sufficient amount. But you will be ready to ask how it was that we had not albuminuria? how it was that the usual characters of deposit of granular degeneration of the kidney were not present in this instance? I can see a probable reason; but I only put it as an hypothesis. You know my crotchet about albuminuria. Albuminuria essentially depends on a congested and obstructed state of the cortical part of the blood-vessels of the kidneys—an obstruction, not as I used to think, and others still hold, of the Malpighian bodies, but of that part of the vascular plexus which is directly concerned in the secretion of the proper constituents of urine. It is the obstruction and change in that which seems to be chiefly connected with temporary albuminuria, and also permanent albuminuria, and coincident alteration of the condition of the urine. Where that disease has gone on to a moderate structural change, generally speaking, the corpora Malpighiana are left more or less free. When I first made known these views five years ago, I thought that the corpora Malpighiana are primarily concerned, but since Mr. Bowman has published his researches on the structure of the kidney, I have corrected this view, and have so expressed it for the last two years. The obstruction in the vascular plexus beyond the Malpighian bodies will cause a great distension of them, and when thus distended, in-

stead of allowing the mere watery parts of the blood to pass through, which is their natural office, and in which almost pure water passes,—instead of that, if the transit of blood be prevented, they will let serum through. But how will it be, if the deposit which obstructs the passage of blood through the kidneys is not confined to the vascular plexus, the proper secreting structure, but involves also the corpora Malpighiana, and the vessels which go to form them? Unless the deposit is considerable, it cannot press on these bodies, because they hang free in the extremities of the uriniferous ducts, without anything to cover them, in a position entirely anomalous, and that they are less exposed to pressure. But if, on the other hand, the deposit in the kidney be very extensive, pervading every structure, and compressing even the Malpighian bodies, then the effect will be, not to produce albuminuria, not to substitute for the secretion of urine a transudation of serum and the watery constituents of the blood, but in proportion to the deposit to reduce the secretion altogether, and thus to allow a smaller quantity of urine, urine of moderate specific gravity, to pass through. That is the hypothesis I would give to explain this condition. This case brings to my mind other instances in which we have had cacoplastic degeneration of the kidney, with considerable enlargement and induration of the organ, but no albumen in the urine, or only very slight in amount, and the urine has generally been very scanty and high coloured.

The history of this case, and its entire intractability, are now sufficiently explained, and I would conclude by directing your attention to the remarkable contrast presented by this hard, heavy, and what used to be called scirrhus liver, though it was not scirrhus, and that soft degenerative liver which we noticed a few days before in the case of a drunkard, who died from delirium tremens. That was under a state of cacoplastic degeneration, but it was in an opposite condition, being large, soft, muddy-coloured, and abounding in fat globules. In this, on the contrary, the structure was dense, tough, pale, deficient both in fat globules and in secreting cells, its substance being chiefly made up of irregular granular deposit, closely compacted by interlaced fibres.

I have not time to notice the case of Kelly, further than that it was also obviously one of ascites from diseased liver, and the disease seemed to be one of the more ordinary forms of cirrhosis, or contractile deposit. The liver was obviously very much shrunk in size, as it never could be felt, even after the patient was tapped, and there was much less dulness than is natural in the re-

gion of the liver. This patient also had obstructive and regurgitant disease of the aortic valves. As no post-mortem examination was permitted, we could not, had we time, make the case so instructive as the other. He was admitted November 20th, 1844, and died April 2d, 1845. For many points of interest in his clinical history and treatment, I must refer to the reports.

LECTURES

ON THE

NATURE AND TREATMENT OF DEFORMITIES,

Delivered at the Royal Orthopaedic Hospital, Bloomsbury Square,

By R. W. TAMPLIN, F.R.C.S.E.
Surgeon to the Hospital.

Posterior Curvature of the Spine.

By posterior curvature is understood that condition in which the spine becomes curved from before to behind, without any lateral deviation; and it will be found to present itself either in one uniform curve from the lower cervical to the last lumbar vertebra, or, as is more commonly the case, confined to the upper dorsal and lower cervical vertebrae; the patient presenting that appearance better known by the term of "stoop."

You will, as a rule, find the condition first mentioned, in which the whole spine is affected, confined to young children, and infants under twelve months of age, whose general health is bad, and who suffer either from constitutional or temporary debility, whereby the muscles of the spine are incapable of maintaining it in the erect position; the consequence is, that the weight of the head and upper extremities becomes thrown on the vertebrae and ligaments, and secondarily on the intervertebral substance, which, by its yielding, allows of an undue approximation of the bodies of the vertebrae at their anterior surfaces, and, for the time, compression of the intervertebral substance itself.

I have never witnessed this condition "permanent." The cases that have presented themselves have been infants and young children, in whom the pallid aspect, anxious countenance, and flabby condition of the muscles and cellular tissue, indicative of a general want of tone, has been most evident; occasionally also general emaciation, and the enlarged tumid abdomen symptomatic of mesenteric affection, also present themselves.

The little patients, then, when placed in the sitting or erect postures, are noticed to

bend forwards, and are found to be incapable of supporting themselves in the erect position, for which you will be consulted; and, upon examination, the spinous processes of the vertebræ may be traced, throughout their entire extent, forming an uninterrupted curve, and which, in thin children, will be obvious to the eye. It is necessary that care should be exercised, for it might be mistaken for the incipient stage of Pott's disease of the vertebræ, although, as I had occasion to mention when speaking of angular curvature, in that affection, even in its origin, a distinct projection of one vertebra may on all occasions be discovered; whereas in this now under consideration, this sign will be found wanting; added to which, by placing the patient in the horizontal position, on the face, the deformity altogether disappears. In angular curvature, the projecting spinous process of the affected vertebra will still be found more or less prominent. It is so evidently necessary that great caution should be used in forming a diagnosis, that it cannot be too strongly impressed on your attention. Delpech mentions a case of this kind occurring in an adult, brought into operation by an attack of rheumatism, but I have never met with it except at the early age mentioned.

The second condition spoken of, namely, that in which the curve is confined to the lower cervical and upper dorsal vertebræ, will be found at any period, from ten years of age until puberty, and, as in the first mentioned instance, is brought into operation by general debility, from whatever cause it may exist. It is common to both sexes, and is often combined with the strumous diathesis,—very frequently met with in young persons who grow rapidly, and who suffer from the weakness attendant upon a rapid growth. Any occupation which requires much stooping, as a compositor or engraver, also brings it into operation. In fact, any cause by which the muscles become over-fatigued, and the weight of the upper portion of the body is thrown more than is natural on the passive attachments of the vertebræ, will produce this deformity.

At the commencement, the patient will be noticed to stoop only when in the sitting posture, and little attention is paid to it, as, by reminding them, they can with an effort sustain themselves in the erect position. By degrees, however, this stooping becomes permanent, and the inability to overcome it entirely, attracts attention. The intervertebral substance is the first to suffer from the undue compression that it is subjected to. The ribs are of necessity prominent posteriorly, and project more than is natural, and the scapula become thus raised, and appear upon examination as if sepa-

rated from the thorax, which, in fact, is actually the case at all portions excepting the centre of those bones; and, upon examination, the finger may with little difficulty be passed almost completely under the bone. Occasionally I have noticed a sensation of crepitus, as if the ribs grated upon the venter of the scapula; and so distinct is the sensation, that you will with difficulty reconcile the possibility of the absence of fracture, and I am totally unable to account for it. The patient then suffers from a confirmed stoop, which will not disappear in the horizontal posture. The head and neck appear to sink in between the shoulders, and they present that peculiar appearance common to old age. Their health becomes evidently impaired from the passive irritation that they are subjected to by the sensation of weakness, which does not subside in all instances even after puberty, and when the deformity has become irremediable, as, of course, the motions of the ribs are more or less limited. We have had lately two patients in the Charity, the one a female aged 20, the other a male, 24 years of age. In both the sense of weakness induced them to apply for relief, and also to submit to treatment, although I informed them that little if any good could be done. I mention this to you, in order that you may be induced to pay attention to such cases when they present themselves, as from the simple and obvious nature of the deformity, it is liable to be passed over as one that does not require attention, or as one which might remedy itself as the patient grows; which may in some instances undoubtedly be the case; yet the fact of its being so does not warrant the omission of such treatment as will certainly prevent a confirmed stoop, and the adoption of which would tend to improve the general health, as well as avoid all risk.

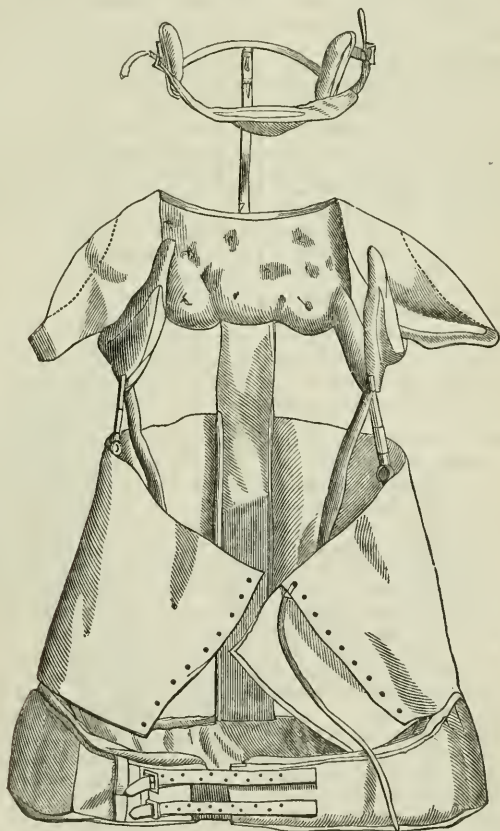
Treatment.—In the cases first mentioned, occurring in infants, the treatment must be directed to improve the general health. The administration of the usual tonics, combined with attention to the bowels, and a nourishing diet, with or without stimuli, according to circumstances, must be had recourse to. In infants at the breast, if the health of the mother is delicate, I have found small quantities of beef-tea, that is, a simple infusion of beef, or calves'-foot jelly warmed, and given once or twice daily, of the greatest advantage. In children, meat, eggs, milk, and potato as a vegetable, ought to form the principal food. In both cases the horizontal position ought to be had recourse to, either uninterruptedly, or as soon as the patient is observed to stoop. In this way the deformity may be altogether prevented.

The cases which occur at or after the age of ten, and in which the deformity is con-

fined to the upper dorsal and lower cervical vertebræ, the treatment must be directed according to the age of the patient and the condition of the curve. If the deformity is slight, and of short duration, the patient young, and the curve can be considerably or nearly removed when the patient is placed in the horizontal position, I would advise the use of a simple board, similar to the back-board commonly in use at schools, three or four times daily, as long as the feelings of the patient will admit of, together with attention to the general health, combining change of scene and air, if possible, as by these simple means it may be quickly

and effectually removed. Several cases are now attending at the Charity, which have readily yielded to this treatment. Should there be any occupation pursued by the patient, which has been the immediate cause, of course attention must be directed to it, or a relapse will naturally follow. If, on the other hand, the deformity has become confirmed, and, upon examination, the vertebræ are found to be rigidly fixed in the curved position, the treatment must then be uninterrupted, for which purpose I have used with advantage the instrument represented (vide fig. 1); with which, at the same time that the weight is taken off the upper portion of

FIG. 1.



the spinal column, a continued pressure can be kept up upon the prominent portion of the curve by the back-board attached, and the shoulders held back by the straps. This instrument, however, must be worn night and day, as, unless the extension is constantly maintained, little if any good can by possibility be effected. In some cases of long standing great good has been derived, and in all the

relief obtained by the feelings of the patient has been most complete. The head-piece attached can be removed at will, so that the patient can remove it if it is desirable for appearance, and reapply it at other times. This deformity is sometimes combined with lateral curvature, which I must now beg to draw your attention to.

Lateral Curvature.

By lateral curvature, then, is understood that condition in which the spine deviates from its perpendicular position to either side, occasioning an alteration in the relative position of ribs, scapulæ, and muscles attached.

This deformity arises, as I have had occasion to point out to you in the preceding lectures, from any cause by which the motions of the lower extremities are rendered irregular in their actions, or by which their uniformity of action is destroyed.

2dly. From general debility or loss of tone simply, or general debility combined with or consequent upon a rachitic condition of the bones generally, with its attendant unhealthy state of constitution.

3dly. Any occupation by which the muscles of one side or extremity are more frequently exercised than those of its fellow, such as nursing, is a frequent cause in the lower classes of life.

I believe that this deformity exists entirely independent of any *disease* of the bones, ligaments, or muscles, at least as a general rule, the rachitic condition alone excepted. The immediate cause in either case is purely mechanical, namely, the superincumbent weight of the head and upper extremities, combined with the constant effort instinctively made to keep the head in a perpendicular position with the sacrum, with the inability of the muscles and ligaments accomplishing this object in the normal position of the vertebræ.

If the motions of one or other of the lower extremities are impeded by any of the deformities hitherto mentioned, an irregular and unsteady manner of walking is the consequence; and as the effort is constantly in action to maintain the head in the perpendicular position, an increased and undue lateral motion is kept up in the spinal column, by which the ligaments become gradually and abnormally elongated; and unless the general health of the patient is good, and the muscles of the spine well developed, a deviation of the spine laterally is the result, which in time becomes permanent.

I have at this time a patient, aged about seven years, who has suffered from a loss of power in the left lower extremity, without, however, any contraction or paralysis of any muscle, simply diminished power of the muscles in that extremity, which occasioned a limp, and inability for him to walk steadily, or without the appearance of lameness, in whom, from the constant strain upon the ligaments of the spine, an incipient lateral curvature has presented itself, which, if neglected, would undoubtedly terminate in a severe distortion of the spine, and add to the lameness already in existence. Many cases

may be seen amongst the out-patients of the hospital, which will illustrate this most satisfactorily; so that too much attention cannot be paid to this cause, especially in young patients.

General debility, or a simple loss of tone, is perhaps the most frequent cause, especially in the higher classes of life, who are by far the most numerous sufferers from this distortion, from their position in society placing them beyond the necessity for exertion; and it is a melancholy fact that the education, the habits enjoined by custom, the occupations of the higher classes of female society, are totally at variance with, and in opposition to, the due performance of the various functions of the body, the exercise of which is absolutely necessary for the preservation of the health of the individual. To this, and this alone, can be ascribed the prevalence of this deformity in the higher classes of life.

What is the condition of a young female thus circumstanced? For the first few years of their existence they are allowed to exercise their body unrestrained, in common with other children, but at a very early age they are subjected to the confinement of a school, or private studies, and, before they are capable of thinking, are taught, as it were mechanically, to observe a certain degree of restraint in all their actions: the very use of their limbs is not allowed, except it be to take a carriage airing, or half an hour's walking exercise; at other times shut up in a study or nursery, and due care taken that not a breath of air shall blow upon them. What is the consequence of these absurdities? The general health first suffers, and the child becomes the constant object of the medical attendant. The muscles, whose proper and full development can only take place by exercise, become atrophied and flabby, the digestive organs become deranged, the bowels irregular in their action, and I believe oftentimes the seeds of disease are sown in some vital organ, which puts a limited period to their existence. The only objects which seem to be worthy of attention are what are called the accomplishments of life, so that these unfortunate creatures would be better without a body than with one for the use that is made of it. This, then, is a common cause of lateral curvature of the spine: the muscles are incapacitated from performing their proper functions; an unnatural stress is thrown upon the ligaments of the spine, which they also are incapable of bearing; a gradual elongation takes place, and, as a consequence, a deviation of the spine from its perpendicular position; and when once this occurs, an increase rapidly follows, if unattended to, as the stress on the ligaments becomes constant, and of course increased elongation,

and consequent deformity, quickly result. General debility arising from any casualty, or from any of the febrile diseases common to early life, such as scarlet fever, &c. &c. will of course produce this deformity under any circumstances, or in any position of life.

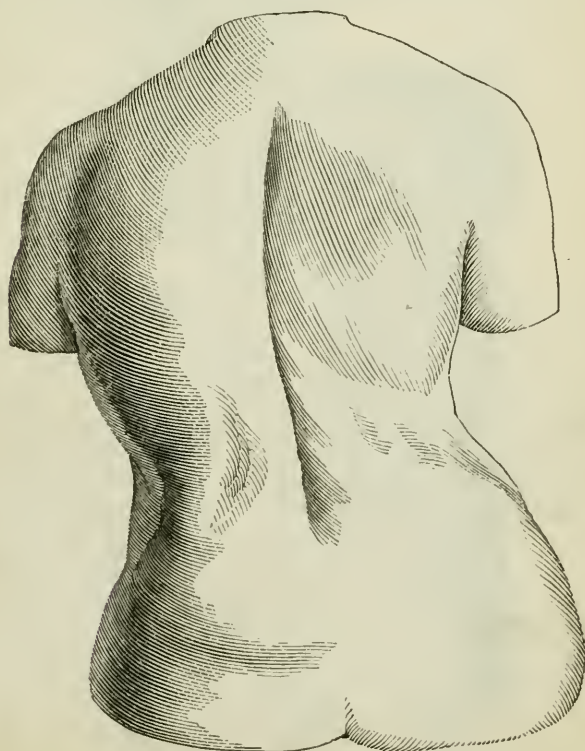
The next cause mentioned is that of nursing, or any occupation by which the muscles of one side or extremity are more frequently exercised than those of the opposite extremity. Many cases present themselves at this Charity, of young females who are compelled to carry a child about the greater part of the day, when, however good the general health may be, the muscles attached to the side on which they carry the child become more fully developed, and consequently the balance of power between the two sets of muscles becomes destroyed, when, as in all cases of deformity, the stronger overcome their weaker antagonist, and a lateral deviation is the result.

As it regards the rachitic combination or cause, this of all others is the most serious, inasmuch as the osseous system generally is not in a condition to perform the office for which it is destined, namely, as a support

and fulcrum upon which the muscles act, without yielding in one or other direction, when an actual alteration in the relative size and proportions takes place; so that in all cases of this kind there is a serious addition to the malposition of the vertebræ, as well as a more severe distortion of the spine and chest, than in either of those previously mentioned; and very frequently, the tubercular diathesis coexists.

Lateral curvature, then, when unaccompanied with rachitis, commences generally about the age of 11 or 12; and the first thing which attracts attention is the projection of the shoulder (generally the right), with the supposed enlargement of the hip on the opposite side; and when examined in its incipient state, a much greater amount of lateral motion in the spinal column will be found to exist than is natural. The spine will be found to be curved only when the patient is in the erect position, and when in the horizontal posture very slight force will straighten it, and even carry it somewhat to the opposite side. If no means are taken to stop its progress, the stress on the ligaments becomes constant, and a rapid increase of

FIG. 2.



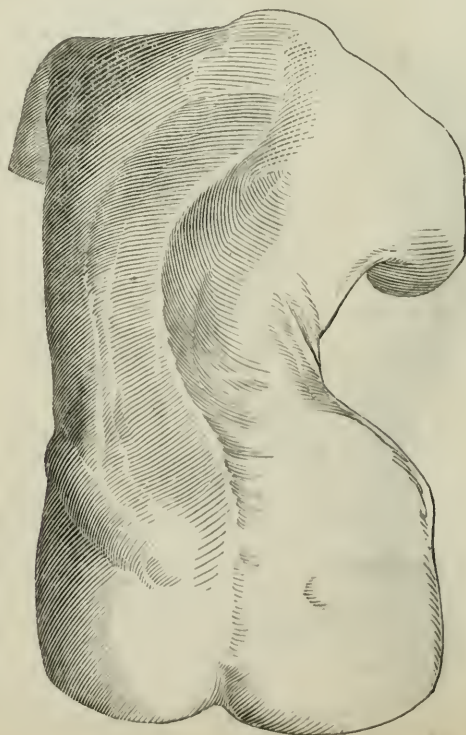
An illustration of Incipient Lateral Curvature.

the deformity follows ; and as the erect position cannot be maintained with one portion of the spine *alone* curved, a second curve takes place in the lumbar vertebræ. As it proceeds, the ribs, from their direct attachment to the spine, are also displaced, project on the convexity of the curve, and fall in on the concavity : hence the projection of one shoulder, and the falling in or flattened condition of the other (vide fig. 2). The sides also alter in shape according to the nature of the deformity, being hollow on the concavity, round and projecting on the convexity. The ribs become compressed, and approximated to the ilium on one side, raised and separated on the other ; so that one of the first things for which you will be consulted is a supposed enlargement of the hip. The shoulders become unequal, the one apparently raised, the other depressed, and approximated to the ilium of the corresponding side. The chest also becomes altered in its anterior aspect, being flattened on the side corresponding with the convexity, projecting on the side corresponding with the concavity. The bodies of the vertebræ themselves become separated more or less on the convexity of the curve, compressed

in the concavity ; and the intervertebral substance, from the undue pressure it is subjected to in the concavity, becomes condensed, and in some cases more or less absorbed ; whilst the ligaments of the spine are elongated on the convexity, and in permanent curvatures become contracted, and offer a great resistance in the concavity. The muscles are more prominent on the convexity, from the diminished space occasioned by the projection of the ribs and transverse processes ; less so on the concavity, from the increased room derived from the flattened condition of the ribs, and the diminished length and increased breadth which naturally result.

These, then, are the general results from ordinary curvature in the form of the italic *S*. Occasionally a treble curvature will be met with : one high up, affecting the lower cervical and upper dorsal vertebræ ; a second abruptly following it, in which the middle and lower dorsal are curved in the opposite direction ; and a third in the lumbar vertebræ, in the opposite direction to that last mentioned (vide fig. 3). In ordinary cases of this description the bones themselves of the spine, or of those of the pelvis, *do not suf-*

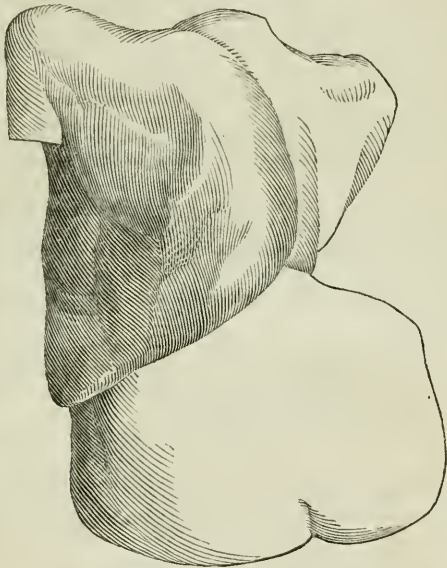
FIG. 3.



fer; it is a simple malposition, which affects the passive attachments more or less, together with the position of the muscles. In the more severe cases, and especially those connected with rachitis, there is not merely a lateral deviation, but an actual twisting of the spine, a semi-rotated condition of the vertebræ; and in the rachitic curvatures which commence at the age of three or four years, and sometimes earlier, an actual compression of the bodies of the vertebræ in the concavities of the curves. The ribs also be-

come flattened, and present posteriorly not merely a round projection, but an acute angle. The scapula on the projecting side becomes raised, and its posterior edge looks directly backwards, the glenoid cavity directly forwards, the spine outwards, and the venter inwards; in fact it becomes loosened half-round, as it were, and gives the patient more the appearance of having a large tumor growing at the back of the neck, and approaching the ear, as if the head had sunk between the shoulders (vide fig. 4); in fact, so great is

FIG. 4.



the amount of distortion occasionally met with, and the consequent alteration in the relative size of the cavity of the chest or abdomen, that it is a matter of surprise an individual can exist and possess, as some unquestionably do, a tolerable state of health. The general symptoms are those common to a weakened state of constitution. There is generally an inability to bear even slight bodily exercise without suffering from fatigue; a constant sense of lassitude and weakness; pain in the side or sides, and back, occasioned in all probability by the stretching of the ligaments, and by the interruption to the functions of respiration, as well as from the derangement of the general health of the patient. The catamenia are frequently irregular, and attended with much suffering; in fact, the deformity itself must of necessity, from the mechanical impediment to the exercise of the muscles of the back and of respiration, as well as the limited amount of bodily exercise which almost necessarily results, present an effectual barrier to the possession of good health.

The use of stays, as well as various other supposed causes, has been assigned by different writers on this subject. I do not myself believe that they exert so great an influence as is supposed, certainly not in producing this deformity. Stays are worn in all classes, whereas the deformity is very rarely met with in the lower class of life. Many other causes have been assigned, which I believe to be merely effects, and although they may increase the deformity when once in existence, yet I cannot regard them as causes.

INFREQUENCY OF ANTEVERSION OF THE UTERUS.—I have met with a very considerable number of cases of retroversion of the womb; and though familiarly conversant with medical affairs for more than thirty years, I have not been able to meet with more than one single decided case of anteversion of the organ.—*Dr. Meigs.*

OBSERVATIONS ON THE
EFFECTS OF DISEASE ON ANIMAL HEAT,

MADE AT THE SUFFOLK GENERAL HOSPITAL, FROM JULY 2, TO JULY 18.

By T. G. HAKE, M.D, Physician to the Institution.

Name of Patient.	Age.	Sex.	Amount of exercise taken.	Pulse.	Disease.	Temperature of the		
						Mouth.	Hand.	Atmo- sphere.
						Fah.	Fah.	Fah.
1. David Mulley	22	M.	None	90	Lithiasis; sciatica	95°.	78°.8	68°.0
Complexion sallow.								
2. Susana Arban	35	F.	None	120	Abscessus	98°.6	89°.6	68°.
After her confinement, six months ago, began to feel pain in left hip, which continued, accompanied by hectic fever and night sweats, until matter formed. The fluid has gravitated downwards on the outside of the thigh.								
3. William Day	35	M.	None	96	Paralysis; phthisis	100°.4	77°.	68°.
He has lost three sisters from phthisis. Respiratory murmur imperfect; dullness of both sides on percussion; incomplete paralysis of right side; speech affected. Disease of one month's duration, preceded by dizziness. Temperature in both hands alike.								
4. Alfred Adams	31	M.	None	80	Hypochondriasis	96°.8	80°.6	68°.
Nervous temperament. Sense of sinking at the epigastrium; pain in forehead and loins; imperfect respiration; sonorous râle. Has lived on poor diet.								
5. John Everitt	35	M.	None	56	Hypochondriasis	96°.8	77°.	68°.
Symptoms and circumstances the same as above. Expectorates phlegm occasionally streaked with blood.								
6. Eliz. Lofts	24	F.	None	100	Chlorosis	100°.4	86°.	68°.
Bruit de diable at the neck; menstruates every five or six weeks—fluid black, or green; leucorrhœa; anorexia; constipation—motions dark-coloured; urine pale and dark by turns; complexion characteristic.								
7. Alfred Milton	24	M.	None	112	Paralysis Phthisis	98°.6	80°.6	68°.82°.4
Numbness and loss of power (following typhus) in both feet, especially in the right, also in the right hand. Feet swelled; temperature in right hand 27° C., in left, 28° C. Dull sound at right lung; action of heart transmitted there; its inspiratory murmur rough, expiratory prolonged.								
8. Rhodi Millar	13	F.	None	82	Chorea St. Viti	98°.6	89°.6	62°.6
Chorea affecting the left hand. The patient has never menstruated; lips red—hypertrophy of the upper; hands generally cold.								
9. Maria Pearson	31	F.	None	64	Lithiasis	97°.7	91°.4	62°.6
Married; miscarried six months ago; she had hæmaturia two months prior to miscarriage; has lumbar, frontal, and occipital pains.								
10. Sophia Hogg	26	F.	None	80	Dysmenorrhœa	94°.1	77°.	62°.6
The patient is a dressmaker; is often bilious; has constant chills and flushings. Suffers from coronal headache, with sense of pressure; palpitation. Respiration sluggish—want of expansibility of lung.								
11. Charles Kemp	32	M.	None	64	Dyspepsia; li- thiasis	96°.8	86°.	62°.6
Liquids generate acidity in the stomach; flatulence; lumbar, frontal, and occipital pains; retraction of testes.								
12. James Death	44	M.	None	63	Chronic inflam- mation of the mucous glands of the colon; intestinal hæ- morrhage	98°.6	89°.6	71°.6

Had had gastrorrhœa and chronic dysentery for some months, followed by profuse hæmorrhage, and afterwards a discharge of putrid grumous fluid, consisting of feculent matter, blood corpuscles, and rarely a pus corpuscle.

It is to be remarked that in this investigation the organs of respiration and circulation are examined in every case with the stethoscope, and that the state of the digestive, secreting, muscular, and nervous apparatuses, is strictly observed.

It is not considered necessary to note down conditions of health.

Old age has less influence on the temperature of the body than was supposed before the recent paper of Davy was published. (Phil. Trans. Part I. 1844). Still, that able observer states, that "probably in very advanced age, as in infancy, the power of resistance to cold is feeble, and the temperature of the body is easily reduced on exposure." It is thence deemed desirable to observe the relations of temperature and age in disease.

The amount of exercise is set down on account of its effect in promoting "the diffusion of temperature and its exaltation in the extremities" (Davy, loc. cit.); the temperature of the air is likewise noted, since with it the temperature of the body rises and falls perceptibly. The "tendency of a high temperature of atmosphere is to raise the temperature of the surface, and of the parts adjoining the surface, in a somewhat higher ratio than the deep-seated organs; and of a low temperature of atmosphere to raise the temperature of the deep-seated parts, whilst that of the surface is subjected to undue reduction from the cooling agencies to which it is exposed," &c. (Davy, op. cit.). If, therefore, such a law holds good in health, it is a matter of interest to observe its operation in disease.

Finally, the relation which temperature holds to the frequency of the pulse has never been investigated; it is therefore made an object of research in the present undertaking.

Bury St. Edmund's,
July 20th, 1845.

TREATMENT OF PRURITUS VULVÆ.

HAVING been a great many times consulted for the relief of pruritus vulvæ, and most frequently in pregnant women, I have rarely had occasion to order anything more than the following formula, viz.—

R Sodæ Borat. ʒss.; Morphine Sulphat.
gr. vj.; Aq. Rosæ Destillat. ʒviii.
M. F. sec. art. mist.

I direct the person to apply it thrice a-day to the affected parts by means of a bit of sponge, or a piece of linen, taking the precaution first to wash the surfaces with tepid water and soap, and to dry them before applying the lotion. I can confidently recommend the prescription as suitable in most of the cases of this most annoying malady.—
Dr. Meigs.

ON THE DIAGNOSIS OF RUPTURE OF THE STOMACH, OR INTESTINES.

By JOHN J. DAVIES, M.D.

Lecturer on Forensic Medicine at the Aldersgate-Street School of Medicine.

THE perusal of Mr. Bransby Cooper's Lecture, reported in the *MEDICAL GAZETTE* of the 8th ult., brought to my mind the recollection of a circumstance, of some diagnostic value, which I formerly noticed in, and now apply to cases of, peritonitis, resulting from perforation of the stomach or intestines.

Some years back, in the examination of the body of a young woman who had died from rupture of the stomach, I observed that the abdomen was remarkably distended, and on the application of percussion found that the tympanitic resonance was most exquisitely marked, and that it was universal over the whole abdomen; being equally distinct in the right hypochondrium, which (usually occupied by the liver) normally returns a dull sound to the percussion stroke, and a sensation of little or no vibration to the finger used as a pleximeter.

On cutting into the peritoneum some gas escaped, and the liver was found to be marked with a dark green tinge upon its antero-superior convex surface, whilst usually this aspect presents no such discolouration. The stomach was ruptured, and a portion of its contents had escaped into the cavity of the peritoneum, which presented the usual characters of inflammation.

The cause of the phenomena particularly mentioned, viz. the extreme resonance of the parietes, and the unusual tympanitic sound in the site of the liver, were due to the escape of gas through the perforation in the stomach. The comparative lightness of the gas caused it, in the supine position, to ascend and to separate the abdominal parietes from the liver by an interval determined by the quantity of the gas; and the hydrosulphuric acid which it contained thus coming in contact with the upper surface of the liver, imparted to it the dark stain, from which it is generally preserved by its immediate and accurate approximation to the wall of the abdomen.

Shortly after the occurrence of this case I was enabled to apply the facts in the following instance.

Thomas Eakin, a sailor, æt. 48, was brought to the London Hospital late in the evening of Jan. 13th, 1843: it being Mr. Scott's receiving week.

History.—He stated, that at 5 o'clock P.M. he had fallen from the rigging of a vessel, a height of twenty-five feet, and alighted with his belly on the edge of an upright cask, which was unheeded.

On examination it was ascertained that he had a severe lacerated wound of the left leg, which laid the tibia bare to the extent of six inches. He complained of pain and tenderness in the abdomen, and was in a state of extreme collapse. The abdominal parietes were much distended, exquisitely resonant on percussion, and returned a similar tympanitic sound over the region of the liver.

Diagnosis.—Peritonitis, complicated with rupture of the alimentary canal.

Treatment.—The wound of the leg was lightly closed with a strip of plaister in two or three places, and the water dressing was applied. The junior dresser and myself watched him during the night, and administered repeated doses of the Tinctura Opii.

The pain became gradually more violent, the extremities cold, the collapse greater, and he expired at 6 A.M. the following morning, eleven hours after the accident.

Post-mortem inspection.

Body muscular and well formed. The blood uncoagulated. Cranium and contents normal. *Thorax:* The lungs were congested, and each contained two irregularly circular patches of extravasated blood, about four inches in circumference. *Abdomen:* Parietes tense, universally resonant; gas escaped when the peritoneum was cut through. The cavity of the peritoneum contained four pints of dark fluid blood, and whitish gruel-like matter, which had escaped from four lacerations in the convex border of the small intestine, opposite to the attachment of the mesentery; the margins of the wounds were circular, well-defined, and coated with lymph, and the apertures filled by the everted and protruding mucous membrane. The peritoneum encircling the lacerations to the extent of an inch

was of an uniform red colour; around this extended another circle, between two and three inches in diameter, in which redness of the maculiform and punctiform types prevailed, the whole being coated with a distinct false membrane, detachable in a thin but perfect film. The mucous membrane was congested and extravasated around the lacerations. The upper convex surface of the liver was of a dark colour; the under concave surface was quite pale. A small fatty tumor, and a compound serous cyst, were contained in the investment of the left spermatic cord; a hydrocele and two minute epididymic pendulous cysts existed in connection with the right testes.

REMARKS.—The diagnosis in this case was correct, but the numerous apertures in the gut, and the rough handling he had undergone previous to admission, had led to the escape of almost the entire contents of the intestine with an unavoidably fatal result. It is remarkable that, notwithstanding the degree of prostration, and the short interval of eleven hours between the receipt of the injury and death, the process of reparation was considerably advanced.

The preceding cases will suffice to establish the practicability of the means of diagnosis pointed out; but I may mention that subsequently I have been enabled several times to prognosticate correctly in cases of ruptured intestine.

In peritonitis without perforation, the abdomen is often much distended by flatus, and becomes very resonant on percussion. But, in the first place, it seldom occurs until after the lapse of two or three days, whilst in cases of perforation it may be noticed, if not immediately, at least in the course of a few hours. Secondly, the intensity of the tympanitic resonance is much greater where there is perforation, for in ordinary peritonitis the distending gas is distributed within the intestines, and among their contents, the intervention of which, together with the omentum more or less loaded with fat, and more or fewer layers of false membrane, tend to damp the sound and vibration. In peritonitis with rupture of the alimentary canal, however, the gas is without the intestinal wall, in immediate contact with the abdominal parietes, and there is nothing to interfere with their vibration. Indeed, the difference is so

manifest that the slightest tap will generally suffice to enable the practised auscultator to distinguish whether the gas occupy the one or the other situation, the relation between the sounds being analogous to that which he immediately appreciates between the resonance of the normal condition of the thorax and that of pneumothorax. The presence of emphysema may furnish a temporary source of fallacy in the chest; as great emaciation, conjoined with tympanitis, may for a moment embarrass in the abdomen; but this is met by the third circumstance—the resonance in the region of the liver, which can only be due to the presence of gas, and at once distinguishes the case from one of mere tympanitis. I am aware that in ordinary peritonitis a small quantity of air is sometimes extricated in the peritoneum, but it is so small as to escape notice unless carefully sought for. In order to determine its presence it is necessary first to define the extent of the liver by percussion: by subsequently making light pressure with the open hand upon the umbilical region any air is displaced, and ascends in a thin layer over the liver, where it is recognised by the resonance it imparts to the spot which before was dull; remove the pressure, and the gas again retires among the folds of the intestine, and the margin of the liver is again definable. The encroachment of the gas, however, in these cases, is very slight, seldom extending beyond two inches from the free margin of the liver. In rupture of the alimentary canal the gas already occupies the hepatic region and to a most considerable extent.

Once out of five hundred post-mortem inspections have I seen the liver somewhat overlapped by a portion of the gut, but so slightly as not to interfere with the diagnosis.

The history of the case is usually relied upon to determine rupture of the digestive tube, but that this is insufficient is proved by the fact that it is very frequently overlooked. But a correct diagnosis is all-important, as the indications of treatment differ from those of ordinary peritonitis, the object being to obviate the muscular movements of the intestines as much as possible, in order to prevent any further extravasation, which constitutes a physical, and, when it occurs to any ex-

tent, an irremediable cause of inflammation. By a correct diagnosis, and a consequent enforcement of the indication of treatment, Dr. Stokes has had the gratification of rescuing one or two lives from otherwise certain death.

The ordinary course of the cases under consideration is this: the healthy coats of the canal are ruptured by some violent shock, or else gradually thinned by ulceration and absorption; the integrity is only maintained by a delicate layer of peritoneum or false membrane, which gives way to simple faecal or flatulent distension, or to a sudden contraction of the abdominal muscles. A breach being established, the gases and semi-fluid contents contiguous to it escape into the peritoneal sac, instantly giving rise to pain, speedily followed by inflammation and collapse. The peristaltic action causes fresh matter to present at and pass through the opening; every addition of such matter increasing the amount and danger of the peritonitis. The object is indisputably, therefore, to produce a motionless state of gut by most rigid quietude, repeated full doses of opium, and the careful avoidance of all circumstances calculated to excite peristaltic movements, so as to forestall any further mischief, and to give an opportunity for the sealing of the aperture by adhesion to the adjacent viscera. Correct treatment can, then, only be founded upon correct diagnosis, which will, I am sure, be facilitated by conjoint observation of the three facts mentioned: 1st, the early supervention of tympanitis; 2dly, the intensity of the tympanitic resonance; and 3dly, the existence of the same over the region of the liver.

Early recognition, I need scarcely add, is almost essential for successful treatment, otherwise the accumulating extravasation defies the most judicious enforcement of rest and opiates.

46, Finsbury Square,
August 19, 1845.

At the meeting held October 31, 1837, M. Dupuy communicated to the Academy of Medicine, that, in experiments which he had made upon horses, the division of the pneumogastric nerve always enabled him to observe a progressive diminution of the fibrin of the blood, during the few weeks that the animals survived the operation.—*M. Colombat de L'Isere.*

A CASE OF
ABSCESS IN THE GROIN, ATTENDED
WITH SYMPTOMS OF STRANGU-
LATED HERNIA,

FROM WHICH TWO LUMBRICI TERETES,
AND AFTERWARDS FÆCAL MATTER,
WERE DISCHARGED, AND THE
PATIENT RECOVERED.

By THOMAS HOWELL, Esq.
Risborough, Herts.

JOHN STEVENSON, aged 70, was attacked Sept. 4th, 1844, with symptoms of strangulated hernia. He had vomiting, hiccough, constipated bowels, with tension of the abdomen, and distressing pain. I found a small hard tumor, about the size of a hen's egg, in the right inguinal region, lying over the internal third of Poupart's ligament, and about midway between the internal and external abdominal rings. At first I supposed it to be an inguinal hernia, but on careful examination, assisted by my partner, we could not detect any impulse in the tumor from coughing, nor could we trace anything like a neck towards the internal ring, nor was the tumor in the precise situation of inguinal hernia. We also took pains to examine whether it could be a femoral hernia, but we were at length led to conclude that the swelling was an enlarged inguinal gland. Still, with the existing symptoms, we looked upon the case with suspicion, and watched our patient very carefully. Calomel, gr. x. c. Pulv. Opii, gr. ij. were administered; and on seeing him a few hours afterwards I found that he had been in less pain, and had vomited less: the bowels, however, had not yet acted, and the tumor was just the same as before. A dose of castor oil was given, and the bowels then acted freely. For the two or three following days he had occasional pain and sickness, which were relieved by opium, and the bowels were kept open by aperient medicine. At the expiration of that time, the tumor (which had been carefully watched) showed evidences of phlegmonous inflammation; leeches and poultices were applied, and on fluctuation being perceived, it was opened, when four ounces of pus, but pus only, escaped. On removing the poultice the next morning two worms (*lumbrici teretes*), each from five to six inches long, were found in it: after that, feculent matter escaped

from the wound, and continued to do so for three weeks. During that period he passed *feces* also per anum, and it was observed that what came from the groin was of a brighter yellow colour than what passed by the natural passage. A probe introduced into the anus at the groin could be passed to the depth of four inches obliquely upwards and inwards; that is, in the direction of the umbilicus. The discharge of *feces* from the wound gradually diminished in quantity, and in five weeks I succeeded, by means of pressure, in healing the orifice. The patient is now quite well. I should have observed, that, on questioning him, he assured me that he had never had any hernia.

RUPTURE OF THE MEMBRANES NOT IN-
VARIABLY FOLLOWED BY ABORTION.

ALTHOUGH the escape of blood, and more especially that of the waters, is always a symptom of threatened abortion, the first of these phenomena has often been seen, and the second even has been observed, without abortion taking place. We attended, in the month of September, 1839, a lady pregnant at seven months, who, after a fall, was attacked with pains extending from the umbilicus towards the vulva, and with a considerable hæmorrhage, followed by the discharge of the waters: in spite of all these precursory phenomena, the lady reached the time of her pregnancy, and gave birth to a healthy child. A bleeding at the arm, repose, cold, and sedative drinks, an antispasmodic and astringent mixture, restored every thing to order, and dissipated the symptoms of threatened abortion. Morlanne cites the case of a female who was not delivered until six weeks after the waters had escaped. M. Velpeau relates, upon the authority of another physician, the case of a female pregnant at six months, in whom the bag of waters was formed, and then broke, so that the arm of the child engaged in the vagina; after this the labour was arrested, the fœtus resumed its position, and the pregnancy pursued a regular course. M. Velpeau adds, that the author both saw and touched, and that he ought to be believed. It is proper to know, also, that the serous fluid which escapes from the cervix uteri may come from an hydatid cyst, or from between the membranes; it may also come from a double pregnancy, in which one ovum is broken while the other remains perfect. Nevertheless, rupture of the membranes and discharge of the waters indicate, almost always, approaching abortion, or at least the death of the fœtus.—*M. Colombat.*

MEDICAL GAZETTE.

FRIDAY, SEPTEMBER 12, 1845.

OUR readers will doubtless have noticed that some extraordinary proceedings have lately taken place in the West of England, relative to what has been termed a "supposed case of poisoning." It appears that in March 1844, a General Dick died somewhat suddenly in Bath, and was interred in due form, —no inquest having been held upon his body. Perhaps, according to the common prejudice of the day, this was wrong; and at any rate, the proceedings which have recently taken place, show that it is far better to have an unnecessary inquest soon after death, than that this should take place seventeen months after the deceased has been consigned to the tomb. The common feeling of society is, that a dead body would not be disturbed under such circumstances, except upon the very strongest reasons for supposing the deceased to have died by violent means. How far the exhumation was justified in the above mentioned case will hereafter appear from an examination of the medical evidence.

We are not among those who hold that every sudden death should necessarily become the subject of an inquiry before a coroner. A very large proportion of all sudden deaths arise from natural causes, easily appreciable and easily understood by professional men. A well-informed professional man, apprised of the circumstances, could no more confound them with death from poison, than he could confound gout with asthma. We are perfectly aware that the statute of Edward I. (4 Edw. I. st. 2.) *De Officio Coronatoris*, orders that coroners should go to the place where any be slain or suddenly dead, ("statim et sine morâ accedere ad occi-

sos, vulneratos, submersos vel subito mortuos;") but we apprehend that sudden death in the days of Edward I. bore a very different signification to that which it bears in our own time. While secret assassination was then as common as it is now rare, the causes of sudden death were not understood. The rules laid down in a statute passed at so remote a period, are entirely unfitted for the guidance of a modern coroner in his duties,—*Tempora mutantur et nos mutamur ab illis*. To appeal to this statute, therefore, in favour of the maintenance of a custom which common sense shows to be unnecessary in a large number of cases, is as absurd as it would be to regulate the medical practice of the present day by that of the barber-surgeons of the fifteenth century! The results of these very unnecessary investigations, furnish the best answer to those who are disposed to advocate the system. The Registrar-General announces in his Report for 1841, that during the years 1838 and 1839, there were in England and Wales 6708 sudden deaths, which, under a forced construction of the act of Edward I., became the subjects of coroners' inquests, *in which the causes of death were not ascertained!*—i. e. while the inquiries entailed a great expense on the country, they ended in nothing;—the causes of nearly two in three sudden deaths, or in sixty-six per cent, were not even stated in the verdicts.* The practice is the more deserving of censure, when it is considered that the salary of the coroner is most absurdly made to depend upon the number of inquests which he holds, and that in a very large proportion of the cases, no inspection of the body is ordered. Apoplexies and diseases of the heart are great sources of profit; and a verdict of "Died by the visitation of God" renders even the

appearance of a medical witness quite unnecessary! There are, it is true, among coroners some honourable exceptions to these remarks, men who look to the strict performance of their duties, and who do not shelter a desire to multiply inquests for their own profit, under the literal meaning of an ancient statute, enacted in a state of society, wholly different from that in which we are now living.

All well-informed professional men know that numerous morbid causes may cut short life suddenly; and, on the other hand, cases of criminal poisoning often show us that there are many secret means employed by murderers which extinguish life slowly under all the characters of natural disease. Hence, by trusting to this criterion, *i. e.* by regarding a sudden death as violent, and a slow death as natural, mistakes are continually arising; and while, on the one hand, an inquest is held in a case of simple apoplexy, literally *super visum corporis*—without any inspection, or any medical evidence; on the other, a great crime escapes unnoticed because the symptoms happened to be slowly manifested, and partook of the characters of natural disease! A person dies suddenly in the presence of credible witnesses, and it is well ascertained that for many hours previously nothing can have passed his lips in the shape of food or medicine. There cannot be any suspicion of violent death in such a case; but an inquest is held, on the assumption that, as in the reign of Edward I., every sudden death is presumptively caused by the dagger or by poison! The suspicion of murder or suicide under such circumstances, is a simple absurdity. If it be urged that the inquest is held in order to determine the cause of death for the benefit of society, we have an answer in the fact, that, according to the report of the

Registrar-General, in sixty-six cases out of a hundred no cause whatever is assigned! Hence the inquest, both in a judicial and in a medico-political view, is, in such cases, perfectly useless; and our firm conviction is, that if coroners were paid, like all other judges, by a fixed salary, we should hear of but few inquests of this description. The inquiry would then be most properly limited to those cases in which medical evidence would be indispensable, or in which, by reason of the cause of death being obviously violent, the inquisition was instituted in order to determine whether any party had been guilty of murder or manslaughter. Let it be understood that, for the purpose of medical police, or correct registration, we do not object to an inquiry in every case of sudden death, provided only the cause be ascertained by good medical evidence; but the system at present pursued, is as unsatisfactory as it is absurd. So far as the question of supposed violent death is concerned, to which the statute of Edward, construed according to its *spirit*, is intended to apply, it is obvious, that in a very large number of these cases, the coroner's inquest is wholly unnecessary, and unprofitable to all except the presiding functionary.

While, according to "Crownors' Quest Law," therefore, sudden death is to be taken as synonymous with violent death—*i. e.* suicide or murder—we find, on the other hand, that when the death takes place slowly, it is to be presumed, contrary to the best experience with regard to a large number of poisons, that the individual has died from natural disease. Hence, if an inquest be held, an inspection of the body is sometimes denied even upon the urgent representation of the medical practitioner, who may have watched the case, and who may have had his

suspicions roused by some peculiarity in the symptoms. The jury are instructed to return a verdict of natural death, and the grave, for the time, is closed over the victims of poison. Medical men are not wholly free from blame on these occasions. Instead of protesting against the proceedings, they sometimes, through negligence or indifference, unknowingly assist the coroner in sheltering a criminal, by offering an opinion of the cause of death without an inspection, and upon insufficient data. Let the series of Shapwick murders, tried within the last year in the West of England, or the "burial-club murders" in Lancashire—where children were successively poisoned for the sake of the club allowance in the shape of burial-money—answer for the truth of this statement. It cannot be surprising, then, that, either by the discovery of circumstances, or by the confession of guilty parties, we have occasionally, after the lapse of twelve or fifteen months, a formal exhumation of the body, a second inquest, a revision of the whole proceedings, a conflicting verdict, a trial for murder, and an execution of a criminal, who, so far as the original inquiry before the coroner was concerned, might have escaped altogether! These exhumations of the bodies of deceased persons, into the causes of whose deaths a pretended legal inquiry has been once instituted, are a positive disgrace to the present state of the law regarding coroners, and call loudly for its reformation. It is no answer to this charge to allege that fresh circumstances may have come to light, which were not known at the first inquiry. In many of the cases to which we have alluded, the circumstances which ultimately established guilt existed in the body of the deceased from the very first moment of death, and would have been developed

by a proper medical inspection! The chief source of the evil appears to be a desire on the part of many coroners to keep down the expenses of inquests to a minimum, regardless of the fact that the "*inquest is to ascertain truly the cause of the party's death.*" But there is another method of diminishing these expenses, besides that of declining to call for medical evidence respecting the cause of death,—*i. e.* by not holding inquests upon the bodies of persons who die suddenly, unless there be reasonable and probable grounds of suspicion. We here quote the opinion of an excellent authority on this subject,* and it would be well if the precept were more frequently borne in mind by coroners." "The dying *suddenly* is not to be understood of a fever, *apoplexy*, or other visitation of God; and coroners ought not in such cases, nor, indeed, in any case, to obtrude themselves into private families for the purpose of instituting inquiry, but should wait until they are sent for by the peace-officers of the place, to whom it is the duty of those in whose houses *violent or unnatural* (not merely sudden!) deaths occur, to make immediate communication while the body is fresh, and if possible while it remains in the same situation, as when the person died. But, under whatever circumstances, this authority must be exercised within the limits of a *sound discretion*: and unless there be a *reasonable ground of suspicion* that the party came to his death by *violent and unnatural means*, there is no occasion, except in the case of a person dying in gaol, for the interference of a coroner. In fact, coroners have on several occasions (1 E. P. C. 382) been censured by the Court of Queen's Bench for holding repeated and unnecessary inquests for the sake of enhancing their fees, where there was no *reasonable*

* Jervis on Coroners, p. 24.

probability that the deaths occurred from violence or unnatural causes !"

We have here the interpretation of the statute of Edward by an excellent lawyer:—the words "*subito mortuos*," on the maxim of *noscitur a sociis*, should be taken to refer to death from violent or unnatural means, following, as they do, the words *occisos, vulneratos, submersos**.

The question relative to the expence of the inquisitions is easily disposed of. Let *unnecessary* inquests be done away with,—let more frequent post-mortem inspections be made, and while there will be thereby no increase in expence, the necessity for exhumations and second inquests will no longer exist. It is true that by an arrangement of this kind the income of the coroner may suffer, yet, as we have already remarked, it is a disgraceful part of the present system, that this should be made to depend on the number of inquests held. It would, we apprehend, be considered, in the present day, a strange method of remuneration to regulate the salaries of the judges of the Queen's Bench and Common Pleas by the number of causes which they respectively tried; but it would not be more absurd, than is the maintenance of this ancient custom in respect to the office of coroner.

We shall reserve the application of these remarks to the case of the late General Dick until our next.

Reviews.

An Inquiry into the Physiological and Medicinal Properties of the Aconitum Napellus. To which are added, Observations on several other species of Aconitum. By ALEXANDER FLEMING, M.D. 8vo. pp. 160. Churchill. London, 1845.

DR. FLEMING appears to be of opinion that the medicinal powers of the Aco-

nitum Napellus have scarcely been tested, and that other and less efficacious species of the plant have been commonly employed. It is true that the *Aconitum paniculatum* has of late been adopted by the London and Dublin Colleges, but, we apprehend, that, formerly, the *Napellus* was almost uniformly recommended. We have before us two works on *Materia Medica*, one published in 1791, the other in 1831, in which this is the only species of aconite alluded to as medicinal. The aconite so much lauded by Storck was given by him in the form of a dried extract of the expressed juice of the *Aconitum Napellus*. Dr. Fleming has, however, we think, proved by his experiments that most of the other common species of aconite have no particular medicinal power, and, according to the views of this gentleman and Dr. Christison, the *Aconitum paniculatum* possesses very slight active properties. Dr. Fleming has found that the root is the most powerful part of the plant, and the most eligible for medical use. The leaves ought to be gathered before or during the flowering season, and the tuber soon after it. The author treats of the remedial properties of aconite at great length. He considers that the following practical inferences may be drawn from its effects on the *cerebro-spinal and muscular systems*.

"That it is calmative, anodyne, and antispasmodic.

"That it is an advisable antiphlogistic in apoplexy, phrenitis, or any disease in which the circulation of the brain is excited.

"That it is contra-indicated in headache arising from anæmia or chlorosis, and whenever there is a torpid or paralytic condition of the muscular system.

"Its properties suggest its employment in convulsive or spasmodic diseases."

The following inferences are suggested as deducible from a consideration of the action of aconite on the *circulation*.

"That it is a powerful antiphlogistic.

"That it is calculated to be of great value in all cases where there is inordinate activity of the circulation.

"That it is contra-indicated where there is obvious mechanical impediment to the pas-

c. 7, the inquiry is stated to be "upon the view of any person slain, drowned, or otherwise dead by misadventure." Nothing is said about *sudden death*. This profitable practice is, however, justified by falling back upon a statute passed more than two centuries before. The law of 1276 is made the rule of 1845!

* It is not a little remarkable, that in the Act, referring to the duties of coroners, 1 Henry 8,

sage of the blood, particularly through the heart and lungs. It is requisite, therefore, in every case, to ascertain that no such obstruction exists before commencing its use.

That it is contra-indicated whenever there is irritability of the circulation, with great diminution of power, such as occurs after severe hæmorrhage."

With regard to its action on the *Respiratory system*, Dr. Fleming concludes that—

"Aconite will probably be found a highly advantageous antiphlogistic in pneumonia, pleuritis, &c.

It seems calculated to be serviceable in spasmodic asthma.

It is contra-indicated in difficulty of breathing arising from any other cause than inflammation or spasm.

In cases of advanced bronchitis, with excess of secretion, it would prove highly injurious, by diminishing still further the power of expectoration."

The author has found that—

"Aconite does not act powerfully upon any of the secreting organs; and what influence it does exert upon them, seems entirely attributable to its sedative effect on the vascular and nervous systems."

It produces a sudorific effect only in particular cases—in the non-inflammatory class of diseases. From the author's observations it does not appear very certain that it possesses any diuretic power. He has not met with any convincing evidence that aconite is a cumulative remedy. In two cases, however, symptoms presented themselves which induced him to suspect that it is so; but in many other instances, where the administration of the remedy was continued for weeks, or even months, no such effects were observed. Dr. Fleming has employed this remedy with success in a great variety of diseases, among which may be mentioned various forms of Neuralgia, Acute Rheumatism (his remarks upon this subject deserve perusal), in Chronic Rheumatism, Erysipelas, Carcinoma (of course merely as an anodyne), in Pruritus, applied in the form of the pure tincture when the cuticle is entire, but when there is abrasion, it is necessary to use it diluted; in severe attacks of Hysteria, and in Spasmodic Asthma.

The following is the formula recommended by the author for internal administration:—

"TINCTURA ACONITI.—Take of the root of *A. Napellus*, carefully dried and finely

powdered, sixteen ounces Troy; rectified spirit, sixteen fluid ounces. Macerate for four days; then pack into percolator; add rectified spirit until twenty-four ounces of tincture are obtained.

"As an *anodyne*, *anti-neuralgic*, and *calmative*, five minims ought to be given at first, three times daily, to be increased daily to the extent of one minim each dose, until the physiological effects described under the *second* degree of operation have been produced*."

As an *antiphlogistic*, Dr. Fleming recommends that—

"Five minims be given at first, and repeated in four hours; by which means the *second* degree of operation will, in all likelihood, have been induced. In order to sustain the sedative action thus developed, two and a half minims are to be given every three or four hours, or less frequently, according to the effect produced. Where this mode of administration is adopted, it is *absolutely necessary* that the patient should be seen, and his pulse examined, before the exhibition of each dose. When this cannot be done, the remedy may be given in the manner pointed out for its use as an anodyne and calmative." (p. 81.)

We have given the above extracts from Dr. Fleming's book, merely as matter of intelligence, and not at all

* These phenomena are as follows:—A tingling extending along the arms, and more or less impairment of the sensibility of the surface. The pulse falls to about fifty-six beats in the minute, becoming smaller and weaker than before; still maintaining, however, perfect regularity. The respirations diminish to about thirteen, presenting, at the same time, a slow labouring character. Great muscular debility is now experienced, and giddiness, with confusion of sight, comes on when the erect posture is assumed. The individual sinks into a lethargic condition, evinces great disinclination to be disturbed, although he rarely falls asleep, and complains much of chilliness, particularly in the extremities, which are cold to the touch. This is the utmost extent to which the author would recommend the physiological effects of Aconite to be carried in order to obtain with safety and success its therapeutic action (pp. 23, 24.)

The dose of five minims, considering the proportions of root and spirit, appears to us to be too large. Dr. Pereira, an experienced authority in such matters, prescribes this dose for a tincture containing one-third more spirit to the same quantity of root. The dose of Dr. Fleming's tincture, therefore, to be in the same proportion, should not exceed *three minims*. The dose of five minims of Dr. Pereira's tincture has been found in practice to be too large. Dr. Fleming recommends what is equivalent to more than *seven minims* of this tincture, which on the authority above cited, we cannot regard as a small medicinal dose. The application of these facts will be apparent hereafter in relation to the death of Dr. Male. Reporters of cases are too much in the habit of speaking of "*drop doses*" of powerful tinctures, as if they all had the same average strength. This is a dangerous practice.

from a belief that the aconite is a medicine which can be employed generally or advantageously in practice. It appears to us that, by the author's own shewing, the effect which is required to be produced upon the system by this drug before it can exert its full remedial action, is so severe, and so nearly allied in its symptoms to the working of a powerful poison, that its use must be wholly inadmissible in cases where the constitution is in any way enfeebled, and may be not a little dangerous in instances where the energies of life are known to be stronger. Furthermore, the trials of this remedy must long continue to be merely experimental; and who, in the present day, will be bold enough to pursue systematically the administration of a medicine, the action of which upon various constitutions is still very imperfectly known; while there is reason to believe, that the effects of its ordinary doses may be evidenced by the production of unexpectedly serious symptoms, or may even be attended with fatal results;—and this, too, when many other equally applicable remedies, of well known power and tested strength, are always at hand. The man who attempts to bring a remedy, which is poisonous in large doses, into common use, must be gifted with no small degree of resolution and daring. Could we trace the early history of a few of the more powerful drugs which are at present commonly employed, what a fearful record of experiment upon human life would be disclosed! What multitudes of lives may have been sacrificed in acquiring the knowledge which now enables the physician to distinguish precisely in what doses, and in what precise forms or stages of particular diseases, opium can be safely employed. What infinite numbers of constitutions have been ruined, even within our own time, by the employment of mercury upon a plan which surgeons are only just beginning to perceive is noxious in the extreme. Review the history of arsenic and prussic acid since their introduction into practice, and it would probably be found that for almost every instance in which, under careful management, the one has cured disease by its tonic and alterative effects, and the other has soothed pain and diminished irritability by its sedative powers, an instance has

also occurred where, by the carelessness of patients, or the rashness of incompetent advisers, the result of the administration of those powerful agents was aggravation of disease, impairment of the constitution, or death.

It will be observed, that many of Dr. Fleming's suggestions with regard to the use of aconite in particular forms of disease, are merely the results of the author's own reasoning from analogy upon the probable effects of the remedy in such cases. It is almost unnecessary to say, that this kind of hypothetical tampering with subjects of vital importance must be extremely dangerous; and the man who, upon the recommendation of another, ventures to employ, for the first time, a powerful remedy in a serious disease, upon which neither he nor his adviser has had an opportunity of testing its effects, must be either very credulous, or very rash. Let those who, thus strongly warned, are willing to persist in the experimental use of aconite upon the human subject, find arguments in support of their dangerous course: all cautious practitioners will, we believe, still endeavour to produce calmative and antiphlogistic effects by the employment of remedies which are of more certain action and better tested utility. The profession has lately received a melancholy and striking evidence of the uncertain and dangerous effects of this drug in the case of Dr. Male. Unfortunately, the medical facts of this painful event have been so imperfectly given, that it is, at present, impossible to reason fully upon them, or, even to decide, with legal precision, whether that gentleman actually perished from the effects of aconite or not; although the details, scanty as they are, render it, medically speaking, probable that such was the case*. The symptoms, as

* The following is the medical evidence given in the inquest upon Dr. Male, as quoted in the Provincial Medical and Surgical Journal, August 20th.

Mr. Russell, Surgeon, of Newhall street, said I have known the deceased for a number of years. He has complained to me occasionally, for six weeks or two months past, of pains in the back and loins. On Thursday morning, about half-past nine, his son, the Rev. Dr. Male, came for me, and on going to his father's house, I found the deceased in bed. His extremities were cold, the general surface of the skin cold and clammy, the pulse quick and feeble, (at 130), with cramps and pains in his legs, and spasmodic pains in his stomach. He said his head was confused. He told me that, not experiencing relief, (alluding

stated at the inquest, did not include several of those which have usually been most distinguishable in individuals poisoned by aconite; thus the pulse was much accelerated instead of being diminished, and numbness and tingling were absent; but the symptoms observed have generally been present in the cases hitherto reported. We trust that a more explicit account of the symptoms, as well as the previous state of health of the deceased, and the post-mortem appearances, may shortly be given. It is not at all evident what was the *strength* of the tincture used

to the pains), from medicines in ordinary use, he had been taking tincture of aconite. He then asked me if I had ever given the medicine, and I said no. I then asked him what doses he had taken, and he replied, on the preceding Sunday five drops two or three times a day: I am not positive whether he said twice or thrice, but I believe he said two or three times a day, and had increased it to six, eight, and ten drops. One dose of ten drops only had been taken on the previous night. He had been also suffering from diarrhoea for a few days, and he had taken a dose of ten drops of solution of opium early that morning for it. I inquired where he had got his notion from relative to the aconite. He said he had been reading a book now circulating through our societies, treating upon the advantages of aconite in similar pains. He expressed his conviction that he should die, that the medicine was too powerful for him; but he also expressed his most earnest desire that he might recover, as his life was of the utmost importance to his children at this time. This he repeated during his illness to myself and Dr. James Johnstone. I cheered him as much as I could, reminding him of his former depression when ill, and that I thought he had nervous power sufficient to wear out the effect of the medicine he had taken. I gave him mild aperients to overcome the poison, with camphor and ammonia. His son-in-law, Mr. Amphlett, saw him along with me in the evening, and we left him somewhat, in our opinion, relieved. On Friday we again met, and towards evening with Dr. James Johnstone, as we found him more sunk. Dr. Johnstone agreed with us in our treatment, &c. Late that evening I found him in a dying state, gradually sinking. He was in a torpid state, from which, however, he could easily be roused, and then his intellects were clear. He had no paralysis. His death took place about ten o'clock on Saturday morning. He was perfectly composed, and took an affectionate leave of myself and others, reminding me that for thirty-five years we had lived together in an uninterrupted friendship. Twenty hours after death I made a post-mortem examination in the presence of Mr. Clayton, Dr. James Johnstone, Dr. Bell Fletcher, and my son. His body, with the slightest possible exception, was in a healthy state. The blood was unusually fluid. Witness described the appearances, which presented nothing remarkable, and concluded by attributing death to the accumulated doses of the aconite depressing the nervous system.

In answer to some questions put by jurors, Mr. Russell said, that such doses would not be likely to leave traces in a post-mortem examination beyond a fluidity in the blood. Had deceased been a younger man, in all probability he would have recovered from the shock of the medicine. Aconite was but little used, and he was not prepared to say that ten drops would produce fatal effects.

by Dr. Male; but, if prepared according to Dr. Fleming's formula, as was probably the case, it was a much more powerful medicine than the dose alleged to have been taken would indicate. Neither is it at all clear at what intervals the drug was taken, for the account leaves it absolutely uncertain whether the ultimate poisonous effects were produced by a single dose of ten drops of the tincture taken on the day previous to the Thursday on which Mr. Russell was called in, (it is not stated in the medical evidence when the symptoms of poisoning first appeared); or from two doses of eight drops, and one of ten, taken during the course of that day; or from one dose of six, one of eight, and one of ten drops, swallowed within that period! If either of the two latter quantities were taken on the Wednesday, it is evident that such doses of Dr. Fleming's tincture swallowed at intervals of four hours could scarcely fail to produce the most dangerous effects upon the system even of the strongest man, and *à fortiori* on that of a person in weak health, and of the advanced age of sixty-six years. By reference to pp. 23, 4, 5, of Dr. Fleming's book, it will be found that the administration of twenty minims of his tincture, in five-minim doses, within six hours produces what he terms "*the fourth degree of operation*" of the drug, — a state of deadly collapse — of poisoning in fact, — so intense, that although persons have recovered from it, their condition must have been one of the most frightful peril! Under these circumstances, the use of twenty-six or twenty-four drops within twelve hours must have been attended with great danger, and the administration of even eighteen (which may have been the quantity taken) was by no means safe. If the unfortunate gentleman only swallowed ten drops of the tincture during the whole of Wednesday, assuming it to have been prepared according to Dr. Fleming's formula, he still took as much as is sufficient to cause very powerful effects ("*the second degree of operation*," according to the author), and we know that, in advanced life, the extreme dose for an adult of any narcotic cannot be given without great risk.

While we have been anxious to state the case of the late Dr. Male fairly and impartially, by showing that important

medical details are still wanting to complete it, we have no doubt that, by most professional men, his death will be regarded as furnishing a melancholy commentary on the "Inquiry into the Physiological and Medicinal Properties of the Aconitum Napellus."

Some Observations on Organic Alterations of the Heart, and particularly on the Beneficial Employment of Iron in the Treatment of such Cases.
By S. SCOTT ALISON, M.D. 12mo.
pp. 62. Longman. London, 1845.

IN the small volume before us, Dr. Alison has very succinctly dwelt upon several of the most prominent indications of treatment in organic diseases of the heart. He very justly condemns the lowering character of the system so frequently adopted in these affections, with a mistaken view of diminishing inordinate nutrition and action. His remarks upon the necessity of adopting an "adjusting practice," and of endeavouring to impart tone to the system, and to the muscular structure of the embarrassed heart, are very judicious. He shows that dilatation is a purely morbid and essentially dangerous result, which ought to be most carefully guarded against; while a moderate degree of hypertrophy is, in cases of obstructive disease, a salutary and desirable condition. Some interesting remarks are made upon the possibility of procuring the absorption of inflammatory deposits of lymph in the tissues of the valves during the earlier stages of their formation. It is perfectly evident that these matters, when recently effused, often become in part or entirely absorbed; but to effect this, appropriate treatment must be employed very early, or the lesion becomes irreparable; and we question whether the ultimate success of such treatment can be rendered as general as Dr. Alison believes. Our own observations have led us to conclude that lymph deposited in the structures of the valves or arteries, usually begins to become opaque, and to undergo the ordinary change into a semicartilaginous matter, in about two months from the time of its effusion; and then, it is probable, the absorbents no longer have any power of acting upon it. Still, we have always thought that, were it to be our misfortune to suffer

from valvular affection in consequence of acute endocardial inflammation, we would continue to keep the constitution, almost for years, under the influence of medicines which act upon the absorbent system.

The author lays considerable stress upon the value of preparations of iodine and iron—especially of the iodide of iron—in the treatment of dilatation, upon whatever cause depending, and of the other forms of heart disease in which there is evidence of diminished muscular power. The necessity of relieving congestions of the head, lungs, and abdominal viscera, is then considered, the author being of opinion that local depletion may be combined with a plan of treatment tending to invigorate the system. This is true; but we think that there are more eligible means of relieving topical congestions in heart disease than that of withdrawing blood either locally or generally. The influence of a distended stomach in adding to the embarrassment of an oppressed heart, and consequently the necessity of directing patients so affected to avoid that kind of diet which gives rise to flatulence, is very justly insisted upon.

We have read Dr. Alison's brochure with great pleasure. As a sensible and judicious attempt to ground the treatment of cardiac diseases upon sound and comprehensive principles, it certainly deserves a favourable reception from the profession.

PREVENTION OF ABORTION.

I BELIEVE that the most successful mode of treating persons who are predisposed to abortion, before the period of quickening, is one which I have long employed, and with a most satisfactory success. It was indicated to me, many years ago, by the late Dr. Physic, as one which he had been much accustomed successfully to employ. If the patient has had repeated miscarriages, I advise her to use an anodyne enema, consisting of a wineglassful of boiled starch, mixed with forty drops of laudanum, to be taken at bed-time, and to be repeated every night, until quickening takes place. Perhaps the influence of the laudanum may be useful in suppressing or lessening the (catamenial?) act, or the effect of the vesicular developments in the ovaries; or, at least, it may deprive the uterus of an abnormal degree of sensibility, the persistence of which might lead it to the early contraction of its walls, and the consequent expulsion of the fœtus.—*Dr. Meigs.*

Hospital and Infirmary Reports.

PARALYSIS AND APOPLEXY, WITH WHITE SOFTENING OF THE PONS VAROLII.

Reported by MR. C. M. WAYTE.

With Clinical Remarks,

By DR. BARLOW,
Physician to Guy's Hospital.

THOMAS H—, æt. 35, a coal-porter, living at Woolwich, admitted under the care of Dr. Barlow, April 10th, 1845. He is a tall bulky man, of loose fibre, and light complexion; single; has had several attacks of syphilis and gonorrhœa, and a mild attack of ague: with these exceptions his health has been good. A brother and a sister are stated to have died of cerebral disease. He has not been very temperate. Five weeks ago he began to suffer from headache, vertigo, throbbing of cerebral vessels, and tinnitus aurium (but no intolerance of light) which gradually increased; he was bled and purged, and enabled to resume his work. Saturday last he went to-bed at night as well as usual, but awoke on Sunday morning with entire paralysis of right leg, and loss of power of flexion of the fingers of the right hand, but he was able to bend the elbows, and elevate the arm to the head; there was also some anæsthesia; his speech was likewise affected, but the portio dura was not paralysed.

Present symptoms.—He has now almost entirely recovered his volitional power in the right leg, and to a great extent that in the hand, but his gripe is not so strong with that hand as with the other, and there is some tingling in it. There is no intolerance of light, but he has double vision, and he becomes giddy if he looks long at any object. Hearing, taste, and common sensation in all parts, unimpaired. Tongue deflected freely to that side. Pulse 60, moderately full, and compressible; respiration good; heart and lungs apparently healthy; urine abundant, limpid, and free from albumen; sp. gr. 1010.

A powder of rhubarb and calomel to be taken directly.

11th.—Bowels only once moved; in other respects much the same.

To take three grains of Calomel with twelve of Compound Extract of Colocynth immediately, and an ounce and half of the Compound Gentian Mixture three times daily. To be cupped to ten ounces behind the left ear.

12th.—Felt much relieved by the cupping,

but was this morning attacked with rigidity of the masseter muscles, preventing him from opening his mouth, or speaking; this has now, in a great measure, subsided, but his speech is a little more indistinct: there was no spasm of any other muscles, or set of muscles. He has greater power in the fingers of the right hand, but felt this morning a tingling sensation in the left hand. Bowels freely opened.

13th.—Early this morning he was breathing very stertorously, and was in a partial stupor; able, however, to be roused to consciousness, though he could not speak. He had also tingling in his left hand and leg, with some paralysis of the latter: pulse, 46: in a short time, however, he partially recovered, and sat up in bed. He is now ($1\frac{1}{2}$ P.M.) able to move his left leg quite well; mouth slightly drawn to the left side; speech indistinct. He often cries like a child. Pulse 72; tongue much furred; bowels open; skin clammy and cold. He was ordered—

To continue his mixture, to take five grains of blue pill twice a day, and to have a blister applied to the nape of the neck.

11 $\frac{1}{2}$ P.M.—Says he is better; speech muffled; anæsthesia of the left hand, with paralysis of the flexor muscles; voluntary power in the right hand restored; pupils contract readily under the stimulus of light. Pulse 70, regular.

14th.—He passed a pretty comfortable night, having spoken once or twice; his bowels also acted twice; but between seven and eight o'clock this morning he was again attacked with stertor and inability to speak. He is now (11 $\frac{1}{2}$ A.M.) breathing very laboriously and stertorously, the diaphragm hardly acting at all, but the intercostal and accessory muscles acting freely: he is quite conscious, but unable to speak. Skin soaked in perspiration; pulse 104, regular, and rather full. He appears to have paralysis of all the extremities, for when lifted up they fall flat upon the bed again; the right leg seems a little more rigid than the left; he cannot swallow; urine passed in bed. He was bled to fourteen ounces, but without any relief, the pulse becoming a little reduced in volume, not in frequency.

12 $\frac{1}{2}$ P.M.—The respiration is now more embarrassed, and the intercostals do not act at all, the whole bony framework of the chest appearing to move *en masse* by the action of the accessory muscles. The diaphragm does not appear to act in respiration, as there is no convexity of the epigastrium produced by expiration:—abdominal muscles contract well; reflex motions are apparent when the sole of the foot is pricked with a pin; they are manifested mostly in

the right leg; the skin is still sweating very freely, and keeps up its temperature; urine acid, loaded with lithates; gives no precipitate by boiling, or by heat and nitric acid, but there is a scanty and rather questionable one thrown down by acetic acid and ferrocyanide of potass; sp. gr. 1021. He seems to evince some deafness when spoken to.

A turpentine enema was administered, and sinapisms applied to the feet.

8 P.M.—Respiration irregular; pulse 120, full, and pretty regular; skin quite hot; lividity of countenance, lips, and ears; pupils contract readily by strong light: he appears to be still imperfectly conscious.

He gradually sunk, the breathing becoming less powerful, and he died at 12 o'clock, appearing to be somewhat conscious to the end.

Sectio cadaveris, thirteen hours after death.—Dura mater very vascular, and adherent to the calvaria; surface of hemispheres rather milky; and there were very strong adhesions between the dura mater and the arachnoid around the glandulae Pacchioni, which were large. The white matter of the brain shewed too many bloody points, which were also of large diameter. The cerebral substance generally seemed too watery, and the ventricles contained about a third more than the natural quantity of serum, in which were a few opaque flocculi. The arteries of the base of the brain were large, patulous, and diseased.

The central portion of the pons Varolii was soft, and quite milky, no bloody softening being visible: this softening involved only the anterior, or motor portion. About three-quarters of an inch below the pons Varolii the spinal cord was also softened in a small portion of its anterior fibres, but the intervening medulla oblongata was not affected. The spinal cord below was not examined, but there was not found any clot or sign whatever of red softening in any part of the brain. No other region of the body was allowed to be inspected.

Clinical Remarks by Dr. Barlow.

There was one circumstance in the condition of this patient which does not appear in the excellent report by Mr. Wayte, namely, a tortuosity and hardness of the radial artery: this hardness did not, indeed, render the pulse incompressible, but was such as to convey to the finger a feeling of too great substance and hardness in the artery after it had been emptied of its blood by moderate pressure.

There are in most diseases, and especially in those of the nervous system, two important questions to be answered:—1st. What is the seat of the lesion? and, 2d. What is its nature?

1. We had, here, paralysis—first on one side of the body, and then on the other—of the muscles of voluntary motion: this would seem to indicate that the diseased action was going on in some central part of the brain; and the intellects, the senses, and the muscles of the face, being unaffected, would suggest the belief that the seat of the disease was below the crura cerebri, whilst the frequent affection of the speech, and his subsequent loss of it, and the power of motion of the extremities and diaphragm, shewed that the mischief must exist above the origin of the hypoglossal nerve. These considerations seemed to fix the disease in the pons varolii, and the anticipation thus formed was, as has been seen, verified by the appearances presented on dissection. The only other permanent change observed in the nervous substance was that found in the cervical spinal marrow, and which no doubt aided in producing the paralysis of motion of the extremities.

2. The consideration of the connection between the lesion of particular parts of the nervous centres, and the loss of power of particular parts of the body, important as it is to the physiologist, and interesting to us all, is, I believe, to the practical physician of secondary consequence to that of the nature of the disease in question; for it is that which should direct him in the application of remedies.

Now in the case before us the sudden occurrence of the hemiplegia would give rise to the belief that it depended upon one of two things—viz. extravasation, or arrested circulation from disease of the cerebral vessels: I say either of these things, for I have seen several instances in which there has been disease of the cerebral vessels without extravasation, in which paralysis has come on as suddenly as where it has occurred. But the existence of extravasation was rendered highly improbable by the subsidence of the paralysis on one side, and its recurrence on the other—a circumstance which would favour the belief that the suspension of the functions of the brain depended upon some condition admitting of variation, rather than upon any more permanent change. Now interruption to the circulation arising from thickness of the arteries does admit of variation in the situation as well as in the degree of the disorder which it produces: hence, we had reason for supposing it to exist in this instance: a supposition which was also favoured by the condition of the radial arteries already noticed. The state of the urine was also such as to excite some suspicion of renal disease, (a very frequent cause of disease of the arteries, more particularly those of the brain), for, although neither heat or nitric acid gave any precipitate, there was a very slight one thrown down by

acetic acid and ferro-cyanide of potass. It was also of low specific gravity: upon this, however, I do not lay much stress, as I believe that violent muscular exertion, and the use of ardent spirits, both of which were habitual with this patient, have a tendency to produce chronic thickening in the coats of the arteries. Upon these grounds we were led to expect that the arteries of the brain, those at the base more particularly, would be found thickened, and that the change in the cerebral substance would be that most likely to ensue from impaired nutrition; namely, white softening.

The diagnosis as to the seat as well as the nature of the disease rendered the prognosis in the highest degree unfavourable, for not only is such a change likely to be progressive, but it was also probable that it was situated in the immediate neighbourhood of parts of the brain whose integrity is essential to the performance of functions necessary for the continuance of life: its character, too, was such as to allow of but little reliance upon any remedial measures.

The probability of congestion in the cerebral vessels induced me to repeat the cupping, which had been of service before the patient's admission; but even this local depletion I was afterwards inclined to regard as a measure of somewhat questionable expediency, for, as the probable tendency of the disease was to a form of atrophy of the brain, in which I considered that depressing measures were contra-indicated, for the same reason I was not disposed to place much reliance upon the exhibition of mercury to any amount. The last bleeding was, indeed, performed in my absence, but in the condition in which the patient then was, it was, I think, justifiable, (though but little good could be hoped for from any means), as the attack might have been owing to extravasation, from the giving way of a diseased vessel, either through disease of its coats or through its becoming involved in the softening of the surrounding cerebral substance. The treatment most fitted for such cases appears to me to be the combination of purgatives with mild tonics: for this purpose I believe the compound gentian mixture of the London Pharmacopœia to be well fitted. The sulphate of zinc I have also frequently used with apparent benefit; and in chronic cases, where there often exists considerable irritability with palpitatio of the heart, I have been in the habit of combining it with camphor and a little hyoscyamus. Counter-irritation will also be of service, and with this view I have frequently recommended a long incision through the scalp on the vertex, and applying to it the potassa fusa.

LIVERPOOL DISPENSARY.

Case of Spontaneous Hæmorrhage from the lining membrane of the aqueous chamber. By DR. R. H. TAYLOR.

M. G., æt. forty-two, a tall, spare woman, and unmarried, came to my Dispensary in Nov. 1840, complaining of defective sight in the right eye; the iris was of a dull greenish grey colour, the pupil was widely expanded, somewhat irregular, and fixed; its edge fringed with fragments of urea, and the aperture filled by a fully-formed lenticular cataract. She was unable with this eye to distinguish even light and shadow. In the left eye the iris was of a grey colour, the pupil about one-third above the medium size, regular, fixed, and glaucomatous: with this eye she was able to make out small type with tolerable ease. The general health was said to be good.

The patient reported that nineteen years ago vision began to fail in both eyes without pain, and in ten days became so defective that she was unable to distinguish any one's features. She entered the infirmary in this town, where she was depleted and blistered, had stimulating drops applied to the eyes, and was electrified. In the course of three months she was so much improved as to see to thread a needle. Her vision continued good till three years and a half ago, when she had typhus fever, after which the sight of the right eye began to fail, attended with the appearance of luminous rings and dark spectra, but without any pain. In about a year she was quite blind of this eye; the sight of the left eye became affected also, before that of the right was quite gone, and has continued to decline very gradually, without pain, and accompanied with the same appearances as were observed in the right eye. Within the last two months, she says that it has got considerably worse. On stooping and rising suddenly she is unable to see at all with the left eye for a few seconds, and a lighted candle appears to her as if burning in a fog. She describes a brilliant sparkling appearance as being visible towards the external angle of the right eye. She is subject to occasional head-ache. When able to see sufficiently well she used to employ herself a good deal in sewing.

Examined catoptrically the images were of course invisible in the right eye, while in the left they were normal, with the exception that the deep crest was rather more defined than usual.

The following remarks upon the case were written at the time the patient presented herself to me; and I now transcribe them, as subsequent observation and reflection have not induced me materially to alter my opinion. "The failure of vision nineteen years ago would appear to have been de-

pendent upon some retinal affection, from its completeness, and the nature of the remedies which apparently effected its removal. Fever was a likely cause to rouse into activity a predisposition to disease of the internal texture of the eye. The immediate cause of the recent loss of sight in the right eye, would appear from the symptoms to have produced its first effects upon the retina, and its last upon the lens, having disorganized the globe. The present condition and history of the left eye indicate the commencement of a process in it similar to that which has destroyed the other. The retina is evidently materially injured, and probably also the vitreous humours. The catoptrical indications scarcely warrant the conclusion that the lens is attacked, at least beyond a change of colour; which, however, is probably a precursor of alteration of structure."

In April, 1842, this patient's right eye became the seat of a singular affection, which, indeed, is my principal notion for wishing to make the case public. A secretion of blood began to take place from the internal surface of the membrane which lines the anterior aqueous chamber. It first appeared at the lower part of this cavity, in the form of minute specks of a crimson hue, irregularly scattered over the membrane as it invests the internal surface of the cornea. By and by a deposit of blood became evident in the lower part of the chamber, and the speckled appearances mounted higher upon the surface of the lining membrane; and thus it continued slowly to advance, the deposit of blood at the bottom of the chamber augmenting, and the speck-like secretion from the membrane gradually ascending, and preserving a nearly level line at its highest point. The secretion appeared to take place across the entire breadth of the internal surface of the cornea. In the course of six weeks or two months, the anterior chamber was filled with coagulated blood above the ordinary level of the upper margin of the pupil. This secretion within was attended with some degree of external vascularity; an irregular zone formed round the cornea; there was occasional aching or darting pain, with intolerance of light, and lachrymation. When the anterior chamber was filled to the height above mentioned the secretion ceased, the effused blood was partially absorbed, and a yellowish white mass remained, which appeared to be fibrin, filling about one half of the chamber. As the patient suffered constant irritation of the eye from the presence of this foreign matter, I resolved to evacuate the contents of the aqueous chamber, and at the same time extract the lens. This was accordingly done by the ordinary operation for the extraction of cataract; the lens came out with tolerable ease, and part of the coagulated blood and fibrin. The

lens was amber-coloured, semi-opaque, and of large size. The wound of the cornea healed rapidly, with the exception of a small portion which did not completely unite for ten days. The patient has since continued free from pain or uneasiness in this eye, but of course is unable to see with it, vision having been lost previously to the operation. The sight of the left eye has now so far declined that the patient with difficulty finds her way along the street, but the lens has not yet become opaque.

REMARKS.—Effusion of blood into the anterior chamber is a frequent result of blows and other injuries to the eye, and in the section entitled "Sanguineous effusion into the eye," of Dr. Mackenzie's Practical Treatise, several cases are quoted from different authors, in which the hæmorrhage appears to have occurred spontaneously without any preceding violence. But the case above narrated differs from these, and from any with which I am acquainted, in the very gradual and peculiar manner in which the blood was poured out, exhibiting in this respect no small analogy with the hæmorrhages observed from different parts of the body in purpura. No blood-vessels could be discovered upon the internal surface of the cornea even under a strong light; the blood effused seemed to be a true exudation from the membrane. That it was not vicarious of the menstrual discharge I ascertained by inquiry, nor indeed was it likely to be so, from the very small amount of the blood excreted. If one may be allowed to hazard a conjecture with regard to the cause of this singular phenomenon, I should be disposed to refer it, in some degree at least, to the irritation produced in the iris and ciliary processes by the presence of a large opaque lens, which seemed to press forward upon these structures, and probably caused the setting up of inflammatory action in the investing membrane of the aqueous chamber. Why the inflammation should have run a course so different from what is usually observed in these circumstances I cannot pretend to describe, any more than why the effusion should have ceased at last, while the cause which apparently produced it still continued to operate.

A GASEOUS chalybeate water may be prepared in the following manner:—Take of crystallized sulphate of iron 2 drachms, white sugar 3 drachms; pulverize, and make into twelve powders. Take of bicarbonate of soda 2 drachms, white sugar 3 drachms; pulverize, and divide into twelve powders. One paper of each of these powders is dissolved in half a glass of water: then the two portions of water are mixed and swallowed during the effervescence.—*Colombat.*

Correspondence.

PECULIARITIES OF ANCIENT TEETH.

SIR,—A communication from Rio Janeiro, recently received in this country, states that Dr. Lund, the celebrated Danish naturalist, has discovered in the province of Minas Geraes, a quantity of fossil human bones, including some entire skeletons. The skulls exhibit the peculiar characters of those of the existing indigenous tribes of Brazil, excepting that in many of them the "incisor and molar teeth are exactly alike."

This peculiarity of conformation has been observed, in many instances, in the earlier inhabitants of different countries; in those of New Zealand, for instance, in Egyptian mummies, and even those of our own country, ancient Rome, and the Germanic tribes, as disclosed by the remains in Celtic, Roman and Saxon tumuli. In the year 1838, I first drew attention to this curious subject, by publishing, in the *MEDICAL GAZETTE*, an account of the skull of an ancient Roman, which had then been recently exhumed from a barrow on the Berkshire Downs. The circumstance was then to me a comparatively insulated novelty, and I scarcely know whether to ascribe it to accidental causes, or to original malformation, but subsequent writers on archæology have so frequently adverted to its existence, that the fact has become clearly established, and is too universal in the ancient models to be attributed to anything but a natural construction.

The following extract from my paper in the *MEDICAL GAZETTE*, November 24th, 1838, to which I have above alluded, may serve to give some general idea of the appearance presented by the Roman relic, which, with a few trifling exceptions, may be taken as a *type* of the peculiarities presented by the whole, hitherto described. Its date may be traced to a period corresponding with the reign of Antoninus:—

"The existing teeth in the upper jaw (the only one, unfortunately, preserved) are eleven in number: five of the molares were lost during life, as the alveolar processes are consolidated by ossification. The crowns of the incisors stand prominently from the jaw, and are evidently not worn to any extent by attrition, but instead of presenting the usual wedge-shaped appearance, they are of an irregular solid oval form, strongly coated with enamel, and in every respect like the natural molares. The bicuspidæ have also lost their identity, and partake of the same peculiarity, so that the whole row presents the appearance, along the entire line, of a set of sturdy and uniform molares."

Mr. Pettigrew has in his museum some

Egyptian mummies, and Mr. Nasmyth the tattooed heads of New Zealanders, which exhibit these dental peculiarities. Mr. Roach Smith also, in his *Collectanea Antiqua*, has noticed them as frequently occurring in the ancient Celtic barrows of Britain.

I am, sir,

Your obedient servant,

R. H. ALLNATT.

Parliament Street, Whitehall,

August 1845.

P.S. The question which arises from these peculiarities has never been satisfactorily explained; and would form, I think, an interesting point for the Ethnological Society.

R. H. A.

ON THE NATURE AND TREATMENT OF FLOODINGS AFTER DELIVERY.

SIR,—In the last number of your journal there is a communication from Mr. Adams, of Aberdeen, "On the Nature and Treatment of Floodings after Delivery," a part of which I consider myself called upon to notice.

I do not intend to follow that gentleman in the positions he has laid down, nor in the arguments he uses; such a *critique* would occupy too great a space in your pages, though I think there would be no difficulty in showing that most of them are based on false principles, are erroneous both in a physiological and pathological point of view, and are highly dangerous in their practical tendency. But I cannot permit anything which I have written to be misinterpreted or misrepresented without putting forward a contradiction.

In the paper I refer to, your readers will find the following passage:—"Dr. Ramsbotham very candidly relates a case, which illustrates in a very striking manner the danger of introducing the hand into the uterus after a great loss of blood. He attended a woman in convulsive fits, and bled her to an enormous amount; the convulsions ceased, and delivery took place naturally. He adds, she then looked quite well, and he had no doubt but that if the placenta had come away all would have been well; unfortunately, however, it was not cast off, and he having introduced his hand to remove it, the woman fell into a convulsive fit and expired."

Now, sir, in this short sentence there are four things that I feel it necessary to animadvert upon. In the first place, Mr. Adams has given a complexion to my case which certainly does not belong to it, and has contorted it to suit an hypothesis of his own, by leading to the inference that the fatal event was dependent on the introduction of the hand into the uterus at a time when the system was suffering considerably

from the loss of blood. Secondly, he has stated what is not true, in saying I bled my patient "*to an enormous amount*," for although she was bled "*largely*," I will not admit the epithet that Mr. Adams has employed; by which, indeed, I would understand bleeding carried *beyond the legitimate rules established by practice*. Thirdly, he has suppressed the facts that the removal of the placenta was undertaken more than forty-eight hours after the last bleeding; and that the operation was had recourse to, not in consequence of any loss of blood from the uterus, but merely from the time that had elapsed since the birth of the child. And fourthly, he has misquoted my words in regard to the patient's state when I was called to her subsequently to her delivery. My words are not "*she then looked quite well*," but "*I found her perfectly well, in good spirits, and she made no complaint*." But that there may be no mistake upon the subject, I shall take the liberty of transcribing the case at length; it will be found in a note at page 568 of the first, and p. 452 of the second edition of my work on *Obstetric Medicine and Surgery*.

"I was called, some years ago, by one of the midwives of the Royal Maternity Charity, to the assistance of a woman under puerperal convulsions. When I arrived, I found she had been bled largely by a medical friend living in the neighbourhood, who had been sent for on the instant of the attack. The bleeding had relieved her partially, but it was thought right to repeat it. A third quantity of blood was taken some time after, with such a beneficial effect that the convulsions entirely ceased, and in a few hours consciousness had gradually returned. About *fifty* hours after the attack, active labour came on, and in less than five hours more the child was born dead. The placenta did not descend, and two hours subsequent to the expulsion of the child I was summoned. I found her perfectly sensible, in good spirits, and she made no complaint. There had been no hæmorrhage, the uterus was not strongly contracted, and the placenta was entirely within it. Under no greater anxiety than I usually feel when the placenta is retained, I proceeded in the ordinary manner to remove it. The moment I had passed my hand completely into the uterine cavity, the patient turned upon her abdomen, and, without uttering any expression of pain, went into a convulsion, though not of a violent kind; intense coma supervened, which yielded to no treatment I could devise, and terminated fatally in about two hours from the removal of the placenta. The vagina, and especially the inner surface of the uterus, communicated to the hand a more pungent sense of heat than I recollect to have experienced on any other occasion."

I then give the appearances on dissection, which displayed nothing morbid, except there being a smaller quantity of blood in the vessels of the brain than usual; and proceed—"Here was as clear a case as can possibly be made out of irritation propagated immediately from the uterus to the brain; and I have no question in my own mind that if the placenta had not unfortunately been adherent, but thrown off naturally, the woman would have recovered perfectly."

It appears to me that it would require no small ingenuity to derive, even in the remotest degree, the convulsion which was followed by *coma of two hours' duration*, and resulted in the death of this poor creature, from depletion; it is with much more justice to be explained, as I have attempted to do, upon the principle that the *remote* cause of puerperal convulsions consists frequently, if not generally, in some source of irritation situated within the uterus, and propagated through the nervous system to the brain.

There is one other point in Mr. Adams's communication which I must notice while commenting upon it. He gives an extract from a table of "*flooding cases*" published by Dr. Churchill in his work on Midwifery, by which it appears that out of 131 cases reported by Dr. Collins, 12 of the women died, and 17 of the children were lost; that of 69 reported by my father, 30 *of the women*, and 13 *of the children*, perished; while out of 25 reported by Dr. Churchill, every woman and child were saved; and he remarks, that "the difference between the result in Ramsbotham's and in Churchill's cases is certainly very singular." And so it undoubtedly would be, were the two sets of cases at all parallel. My father's cases were selected for publication out of a vast number of the kind that had come under his notice; and they were chosen by him, some to illustrate a particular doctrine, or mode of practice, but the greater number in consequence of their alarming characters. I need not say that such cases as the latter would be more likely to terminate fatally than those generally met with in practice. On the contrary, Dr. Collins's and Dr. Churchill's consisted of the *whole number of cases of hæmorrhage* that occurred in a specified number of deliveries. It must be immediately evident that it is most unfair to class these different sets of cases together in the same tables; it is most unjust to draw any inference regarding the success of any individual practitioner from their results, and most deceptive to take them as a portion of the data from which to build up a system of statistics. It would surely strike the mind at the very first glance that all *selected* cases should be excluded from any such calculations; and that my father's were selected,

the title-page, as well as the preface, to the first edition of his book proves.

When Dr. Churchill published his "Theory and Practice of Midwifery," I thought it right to caution the profession against receiving his tables as statistical evidence, because of the manner in which they are compiled; and I then objected strongly to my father's cases, as published by him, being used in such a way as Dr. Churchill has done. You inserted two letters from me on this subject in your journal for June 10, and June 24, 1842.

I have the honour to be, sir,

Your obedient servant,

FRANCIS H. RAMSBOTHAM.

14, New Broad Street, Sept. 2, 1845.

ON HÆMORRHAGE FROM ENGORGEMENT
OF THE OS UTERI.

BY DR. W. B. M'EGAN.

WHILST reading the remarks of Mr. Adams on "Floodings after Delivery," in this week's GAZETTE, I was much struck with the coincidence in our opinions as to the general cause of "hæmorrhage before delivery." Mr. Adams says:—"I have met with several cases in which there was alarming hæmorrhage from engorgement of the os uteri, and it is deserving of remark *that in these cases the feel of the os uteri was such as at first to convey the impression that it was a portion of the placenta.*"

I mark this latter sentence of Mr. Adams's with italics, as completely bearing me out in an opinion I had formed the very day previous to receiving the GAZETTE, whilst attending a case of labour, combined with flooding, some hours before delivery, and which I shall here relate. On Saturday, the 30th, I was requested to attend upon Mrs. P., aged 35, in her fourth labour, and on my arrival was informed by the nurse that there had been a constant *trickling* of blood for some hours. The woman looked pale, with a peculiar air of excitement, complained of dimness of vision, with ringing in the ears; the pulse was 100, quick, but feeble. On examination I felt the os uteri open to the size of a shilling, soft, and enlarged, and on superficial touch, resembling, in all respects, the placenta; indeed, at first, I considered it a case of placenta prævia, and felt much anxiety as to the termination of the case; yet after carefully examining the os, and considering the mode in which the blood was discharged, and from evidence hereafter to be adduced, I believe the hæmorrhage in this case proceeded entirely from what Mr. Adams styles "engorgement of the os uteri." To proceed with the case: I plugged the vagina with small pieces of sponge, enjoined perfect rest, with light covering, and the room

made as cool as possible, with directions to be sent for should the hæmorrhage again occur, or labour pains be induced. Accordingly, labour set in about 8 o'clock in the evening, but being suddenly called out of town, I committed the charge of the case to a medical friend, who conducted it to a successful termination, and informs me that a short time after his arrival the membranes were ruptured, with the head immediately coming down, and the labour was brought to a close in an hour afterwards; the placenta coming away in *ten* minutes after the fœtus was expelled, with little more than the usual loss of blood.

Now, had this been a case of accidental separation from the side of the uterus, there would have been hæmorrhage to a frightful extent. I am inclined to believe, after the expulsion of the fœtus, together with the earlier throwing off of the secundines, the history of the case forbids the idea of placenta prævia; but, taken together with my own impression whilst effecting an examination in the first instance, the facts lead me to think that it was a case of hæmorrhage from "engorgement of the os uteri," as laid down by Mr. Adams; and I quite agree with that gentleman in opinion, that, in many cases of flooding before delivery, hæmorrhage from this cause is liable to be, and has often been, mistaken for placenta prævia, and steps taken which were uncalled for and unnecessary in the treatment of such cases.

Torquay, Devon,
Aug. 30, 1845.

ON AIR BENEATH THE DURA MATER IN
FRACTURES OF THE BASE OF THE SKULL.

SIR,—In the MEDICAL GAZETTE of July 27th, a case is related of injury to the head, in which air was found under the dura mater. An attempt has been made by a reviewer in the Lancet to show that it was a post-mortem appearance; that the air found access during the examination of the body. He says, that "in raising the calvarium from the dura mater, and in separating the firm adhesions which constantly connect them, the dura mater had been raised from the surface of the brain, and a vacuum being *then* and *thus* produced, air entered the fracture at the base." This explanation is very plausible, and at first sight satisfactory, and, I must confess, ought to have occurred to me. But will it bear examination? I think any one familiar with subjects of this kind will doubt if the raising of the dura mater above the upper surface of the brain would draw air from a small slit in the dura mater at the base of the skull, there being a fracture to allow access to the external air. The effect of any attempt to raise the dura mater above the surface of the brain would be to bring the

former into closer contact with the sides and lower surface of the latter, and also to cause the two hemispheres to press more forcibly together, so as effectually to prevent any passage of air between the brain and dura mater from the base to the upper surface.

It is of importance to bear in mind, that the anterior lobes of the brain were compressed, and very sensibly diminished in volume, the surface being quite pale. This could not have been a post-mortem occurrence; there was, I think, less violence than usual in opening the head. What, then, filled the space left empty after this diminution of the brain's volume? What but the air found under the dura mater, for there was neither serum nor effused blood to occupy it? If this diminution of size took place during the accident, then the vacuum, or a tendency to one, occurred before death; and if so, it is not necessary to consider the effects which might be produced by raising the calvarium.

Perhaps when it is considered that the above is not the only case in which the brain has been found reduced in size, the minds of some may be relieved of any doubt of the accuracy of the fact. Littré, Sabatier, and O'Halloran, all state their conviction, from the result of post-mortem examinations, that the brain is sometimes diminished in bulk in cases of concussion.

There is a difficulty in believing that any analogy with respect to physical condition exists between an inverted bottle of water, and the skull filled with brain, blood, and serum, and supplied with foramina of exit and entrance. The conception of the analogy will be aided if we suppose the bottle to be filled with a mass of brain supplied with its proportion of blood, and suppose, also, that the vessels containing it unite in one trunk, which passes through the neck of the bottle, and which may or may not be provided with a valve. I think it will not be denied that, if this bottle were fixed in the frame described in the communication alluded to at the beginning of this letter, and then allowed to fall, a vacuum would be formed, just as if it were filled with water, though not to the same extent; or, what would be better, and beyond all cavil, decapitate a dissection subject, and having made the necessary arrangements about the base of the skull, let it fall in like manner, and what is there to prevent a similar result?

A theory which accounts for so many of the puzzling phenomena which attend injuries of the head cannot be called idle, even though it should be *false*. It gives a reason why extravasation should occur diametrically opposite to the seat of injury of the skull; why the brain should be found bloodless in concussion, as in the case of Mr. Watson Beaver; it accounts satisfactorily for that

otherwise inexplicable fact—the diminution in size of the brain, noticed above. It explains why concussion should take place from the mere commotion of the body, without the head receiving any external injury. It also, I must still be permitted to affirm, explains how air found its way under the dura mater in the case we have related. It renders a happy solution of the reason why progression in a rarefied atmosphere causes staggering, dizziness, and sickness; while in a balloon, whose movements are not so abrupt as to amount to shocks, these symptoms are absent.

Even grant for a moment that the reviewer's explanation of the presence of air be correct, the *modus operandi* of shocks to the head advanced by me remains unaffected. It was advanced long before the case occurred, and rests on a sure and simple foundation—the inertia of matter. The truth lies not in a well, nor on the surface, but within the small compass of a snuff-box; the preliminary tap, and the accumulation of snuff towards the side struck, illustrating the law of nature upon which the theory is founded.

Before concluding, I would express the reasonable wish, that objectors to this theory, instead of lazily calling it an idle and groundless speculation, would address themselves to overturn the arguments which support it.

I am, sir,

Your obedient servant,

THOMAS HAWORTH, M.D.

Bolton, August 26, 1845.

Selections from Journals.

SURGERY.

TREATMENT OF NEURALGIA BY THE DIRECT APPLICATION OF SEDATIVES TO THE NERVES.

A WOMAN, æt. 59, of spare habit, came under the care of Mr. Rynd, at the Meath Hospital, May 18, 1844, complaining of acute pain over the entire left side of the face, particularly in the supra-orbital region, shooting into the eye, along the branches of the portio dura in the cheek, and along the gums of both upper and lower jaw. She stated that about six years ago she fell from a wall, and, in the act of falling, a stone struck her in the temple:—twelve months after this she was much exposed to cold, and one night was suddenly seized with the most agonizing pain in the situation above described. Since that time it had continued up to the period of her coming under Mr. Rynd's care, coming on at irregular intervals; but each time, generally, more in-

tense in character:—until, at last, weary of her existence, she came to Dublin for relief. She had been salivated three times, and had been so much in the habit of taking laudanum, that latterly half a drachm, three times a day, and the quantity she commonly took, had no effect in lulling the pain. She was a miserable sallow-complexioned looking creature, had been sleepless for months, and her face was furrowed with constant pain.

On the 3d of June a solution of fifteen grains of acetate of morphia, dissolved in one drachm of creosote, was introduced to the supra-orbital nerve, and along the course of the temporal, malar, and buccal nerves, by four punctures of an instrument made for the purpose. In the space of a minute, all pain (except that caused by the operation, which was very slight) had ceased, and she slept better that night than she had done for months. After the interval of a week she had slight return of pain in the gums of both upper and under jaw. The fluid was again introduced by two punctures made in the gum of each jaw, and the pain disappeared. After this the pain did not recur, but she was detained in hospital for some weeks, during which time her health improved, her sleep was restored, and she became quite a healthy-looking person. She left the hospital, on the 1st of August, in high spirits, and promised to return if she ever felt the slightest pain again. It was concluded she continued well, as she has not been heard from since.

CASE II.—A thin, spare man, æt. 28, was admitted into hospital Sept. 9th, 1844, and came under Mr. Rynd's care on the 10th of November, complaining of acute pain in the right hip, thigh, and leg, to the sole of the foot, along the entire course of the sciatic nerve, and its branches, but chiefly in the main trunk of the nerve. He is unable to sleep from the pain, and quite unable to walk. He is much emaciated, and the muscles of the limb are attenuated and wasted. He has been ill for three years, during which time he has been almost always confined to bed. He has frequently been treated, for the disease, with calomel, to produce salivation, cupping, blistering, leeching, &c., all without any salutary effect. Exposure to cold and wet is assigned as the cause of the disease.

On the 13th of November the fluid was introduced, ten grains of acetate of morphia to a drachm of creosote, one puncture behind the trochanter, and one half way down the thigh. He was instantly relieved from pain, and walked steadily through the ward without any pain or difficulty;—before, walking increased the pain. For about half an hour after the operation he felt uneasiness from the puncture.

10th.—Says he is perfectly well in the thigh, and feels only a slight pain in the course of the anterior tibial nerve. The fluid was again introduced to-day to the seat of pain, by two punctures; it disappeared as before.

29th.—Says he is perfectly well: has walked every day since; has slight stiffness in the knee from previous want of use. Ordered—

Camphorated oil, to rub the knee with.

December 15th.—Left the hospital to-day, saying he felt perfectly free from all pain and uneasiness.

February 6th.—He walked up to Dublin to-day (twenty miles), and says that since the last operation, on the 16th of November, he has never felt his old pain, and is perfectly well.—*Dublin Medical Press.*

It is to be regretted that Mr. Rynd has not described the manner in which the punctures were made, and the fluid applied in the above cases, or the nature of the instrument which he has invented for the purpose. In a communication, published in a subsequent number of the same journal (March 26th), Mr. Arthur Guinness, of Clontarf, states that he has treated some cases in a similar manner, and with most happy results. Mr. G. relates the case of an elderly female who had severe neuralgia of the nerves on the outer side of the leg, shooting from her knee to her ankle and foot. She had been subjected to a variety of treatment, such as leeches, blisters, an incision down to the nerve, and cutting it across, &c. She was quite lame when Mr. Guinness saw her, and it hurt her much to put her foot to the ground; she suffered greatly at night, and could not sleep. The narrator made several small punctures along the course of the nerve affected. He used a common lancet, armed with morphia, mixed in a little water, about the consistence of paste, and operated precisely as is done in vaccinating an infant: he did not use creosote with it. She felt slight stinging and uneasiness for a short time after, but that night she slept well, and next day stated that the pain, with the exception of one or two spots, was quite gone. Punctures were again made in these places. She recovered. She is stated to have continued in good health ever since—a period of nearly nine months.

Mr. Guinness adopted the same mode of treatment in a case of sciatica, with similar success. In another bad case of neuralgia in the foot and leg in a man who had been subjected to a variety of most active treatment in hospital, and with very little benefit, he determined on using creosote without morphia. It was of decided benefit, and the man was able to go to his work, and has continued well up to this time—a period of about seven months.

[REMARKS.—It is certainly a startling announcement that severe neuralgia of several years' standing, and in great probability depending upon some organic change in the nerves of the affected part, may be instantaneously and almost permanently cured by the application of an opiate to punctures in the course of the affected nerves; still, as the plan appears to have been so successful, we join with Mr. Guinness in recommending the profession to give it a fair trial.—*Ed. Gaz.*]

PATHOLOGY.

CASES OF TETANUS, IN WHICH RECOVERY TOOK PLACE.

THE subject of this case (which is recorded by Dr. Patrick Newbigging, of Edinburgh) was a baker, *æt.* 28. About a week before the day on which he first complained, he had occasion to go into the open air to chop wood, while in a state of profuse perspiration, at a season when the cold was very intense. In the evening he complained of stiffness about the angles of the jaw, which gradually increased until the fourth day, when the jaw became almost completely fixed or locked. When Dr. N. saw him, on the seventh day, the masseter and temporal muscles, as well as the muscles of the back, were extremely rigid, and paroxysms of spasm of the muscles of the face and abdomen occurred about every half hour, lasting nearly a couple of minutes. The tetanic symptoms had continued, but latterly with considerable abatement, for about a fortnight, when the patient was suddenly seized with great difficulty of breathing, and general tremor, accompanied with lividity of the face and lips, which, however, was speedily removed by placing him in the erect posture. Five days after this the spasms returned, as also the attacks of breathlessness. The different symptoms, however, were gradually disappearing; but there was still considerable difficulty in opening the mouth. A month after the commencement of his attack he expectorated a considerable quantity of matter mixed with mucus, and occasionally to such an extent as to cause symptoms of suffocation, owing, in all probability, to the contraction of the muscles of the jaw, thereby causing obstruction to the discharge of pus. The expectoration of matter continued for about three weeks, and then subsided. It was afterwards proved that he inclined his head much forward, and, upon examining the back of the neck, considerable thickening was found on both sides of the spinous processes of the vertebrae, unaccompanied, however, with pain on pressure. As the general symptoms progressively improved, anasarca appeared, and the limbs became swollen to a very considerable extent; but this was re-

moved by the use of diuretics; and, with the exception of a slight inclination of the head forward, and some stiffness of the jaw, which did not admit of the mouth being fully opened, he got quite well, and was able to return to his business; the duration of the case having been upwards of three months. The treatment, in the earlier stages of the disease, consisted in small bleedings, the administration of croton oil and claterium, until the obstinate constipation was overcome. Morphia, in doses of from fifty to seventy drops, was given, at first, in the evening, afterwards four times a day: to this were several times added thirty drops of the tincture of Indian hemp. Blisters were applied successfully to the upper and lower parts of the spine: a tobacco enema was once administered; and on the sixth day arsenic was prescribed. Colchicum was also among the remedies employed. Dr. N. conceives the successful issue of the treatment to have resulted from the persevering use of croton oil and opium; and attributes little of the benefit to the other remedies. He has occasionally observed benefit from the Indian hemp in allaying irritation and causing sleep, particularly when opium was contra-indicated, but is doubtful of the value of this remedy in tetanus. Dr. N. considers it probable that the complaint was produced by some degree of inflammation at the upper part of the spine, as indicated by the thickening felt externally; and that this was followed by the formation of matter which escaped internally and was expectorated. He does not believe that the bones or articular apparatus were diseased, as the motions of the cervical vertebrae were perfectly normal.—*Abridged from Northern Journ. of Med.*

In October last, Mr. James Miller, of Edinburgh, treated with success a case of traumatic tetanus; the subject of which was a girl, *æt.* seven, who, about a fortnight before, had received a severe contused and lacerated wound of the middle finger of the right hand. The symptoms of muscular spasm and rigidity continued, although latterly with great abatement, for rather more than a month:—recovery was complete. Mr. Miller says, that "the symptoms, at first severe, gradually, yet very perceptibly, gave way before the treatment employed. The trismus, opisthotonos, and rigidity of the upper extremities, as well as of the abdominal muscles, were at first great, and underwent frequent and cruel exacerbation, and these aggravations were induced by the slightest exciting cause. Rigidity gradually relaxed; and the exacerbations became less painful, less frequent, and less easily induced. During a temporary interruption of the treatment the symptoms threatened to return to their original severity, and again

yielded to the resumption of the appropriate remedial means." Mr. M. proceeds to remark:—"For some time I have been satisfied that in the treatment of traumatic tetanus the most likely means of relief are to be found,—1st. In early amputation of the injured part, or isolation of it from the general nervous system by suitable incision on the cardiac aspect. 2d. In effectual and early evacuation of the bowels, and maintenance of free movement in them. 3d. In maintaining a sedative effect on the nervous centre implicated in the disease by cold applied to the spine. 4th. In the continued use of some one remedy calculated to allay muscular spasm, perhaps aconite, Indian hemp, or tobacco. 5th. In careful administration of nourishment, so as to husband the strength as much as possible. 6th. In maintaining quietude, and avoiding all excitement likely to induce aggravation of the spasm." In pursuance of this system, the injured finger was amputated on the day after slight spasmodic symptoms had appeared. The bowels were acted upon by brisk purgatives and enemata of turpentine and assafoetida. Tincture of Cannabis Indica was given from the commencement of the disease, at first in doses of ten drops every four hours. (A drachm being equal to three grains of the extract.) On the following day the dose was increased to twenty drops every two hours, and in the evening to thirty drops every hour. On the third day thirty drops were ordered every half-hour. On the fourth the dose was again ordered to be given every hour. On the following day it was doubted whether the tincture was genuine, as but moderate narcotism had been induced, and she was ordered two drops of the strong tincture of aconite every two hours. In the meantime one dose (thirty drops) of the Indian hemp was given to a middle-aged adult in the adjoining ward, an inmate on account of neurosis of the fibula. "The medicine was given at bed-time, and he speedily fell into a sort of trance, during part of which he fancied himself transported, not inappropriately, to Constantinople." As it was found at the next visit that the spasmodic attacks had become both more frequent and more severe, it was decided to give up the aconite and return to the cannabis, giving thirty drops every hour. From this time the narcotic appears to have been continued in these doses for ten days, when it was reduced to thirty drops every second hour. In ten days after this the same dose was given every third hour. The hemp was continued, at increased intervals, a few days longer until all spasms had ceased, (although some hardness of the abdominal muscles remained), it having been employed but with one day's intermission for about a month, and was now beginning to induce a quick and irritable state

of the circulation. Mr. Miller felt very hopeful of ice applied to the spine, as a remedial agent, considering its action to be obviously sedative to the nervous system,—powerfully and directly so. As soon as circumstances permitted, it was had recourse to in this case, and was maintained in almost constant operation for ten days, the bags of ice being laid along the whole spine, but with the chief effect directed on the upper part. When the symptoms began to yield the ice was discontinued. The fifth indication of cure was never lost sight of. From the first very strong beef-tea was ordered to be frequently administered. As the trismus yielded, and the power of swallowing was regained, ordinary food was offered in addition, and usually taken with greediness. Mr. Miller attributes to the Cannabis Indica, the power—which, he thinks, is probably not slight—of controlling inordinate muscular spasm, and directs attention to the marked tolerance of this remedy in tetanus. This valuable case deserves to be carefully perused in the original.—*Lon. and Edin. Monthly Journ.* Jan. 1845.

TOXICOLOGY.

POISONING BY AMERICAN FLOUR. By WILLIAM TAIT, M. D.

Surgeon of the Edinburgh Police.

ABOUT one o'clock on the morning of the 28th September, 1844, I was called to the house of a respectable victual-dealer in town, where several members of the family were reported to have become seriously unwell. On my arrival, my attention was first directed to the mistress of the house, a corpulent-looking female, about forty-seven years of age. At this time, she was lying in bed, supported by one of her daughters, and presented a countenance which was pale and collapsed, cold extremities, and a quick feeble pulse. She seemed to comprehend every thing which was said to her, but was so oppressed as to be unable to return any answer to the questions put, otherwise than by a slight inclination of the head. The pupils were rather contracted, and very sensible to light. The tongue was covered with a thick frothy mucus. Thirst was incessant, and fluid was only swallowed a very few minutes before it was rejected. Her agony always appeared much increased before vomiting. This was evinced by a constant rolling of the head and eyes, a twisting of the body, and a convulsive pressing with both hands over the umbilical region. The matter vomited in my presence appeared to be simply the fluid which was swallowed, mixed with mucus, and a few streaks of blood. She could not tolerate the slightest pressure over the epigastrium or other part of the abdomen. The bowels had been re-

peatedly opened, but unfortunately the stools had not been preserved, and I had no opportunity of obtaining any exact information regarding them.

Besides Mrs. J., Mr. J., two daughters, and three sons, the youngest of whom was fifteen years of age, were affected in a similar manner. The symptoms in all, however, were not exhibited in the same degree of intensity; and whilst they were nearly similar in their origin and progress, some of them were altogether absent. Mr. J., for example, had no vomiting, although he suffered more from sickness and tormina than any of the others.

So many individuals exhibiting similar symptoms in the same family, led me at once to suspect that all must be attributable to the same cause; and this, I had no doubt, was of a poisonous nature. On inquiry into the history of the cases, I learned that, besides broth and meat, the family had, on the preceding day, partaken of an apple-dumpling, the paste of which had been made of American flour. This, from its fine appearance, was considered to be of a very superior quality. Soon after dinner, a heavy uneasy sensation was felt in the stomach. This was accompanied by great sickness and inability to sit in an erect posture, which in some members of the family was soon followed by vomiting. Two of them, who got speedily rid of the contents of the stomach, recovered quickly. In four, vomiting did not take place before five or six hours had elapsed. In these the sickness was accompanied with lancinating pains in the stomach and bowels, and a burning heat in the epigastrium, a dry sensation in the mouth, thirst, pain in the forehead, and restlessness. When vomiting took place, relief was obtained for a short time, until it returned. The vomiting was succeeded by purging, general depression, paleness, and collapse of the countenance. In all but one young man, the pulse was quick and feeble, and in him it was full and bounding. He complained much of headache, and his eyes were prominent and congested.

The treatment pursued was varied according to circumstances. Vomiting was encouraged by draughts of tepid water in some; sedative draughts were administered in others; and warm-water enemata to those who had still a desire to go to stool. A vein was opened with complete relief in the young man with the full pulse; and the mistress of the house, besides receiving sedative draughts to allay the irritation in the stomach and bowels, had bottles of warm water applied to different parts of the body to preserve the heat, and a large sinapism over the epigastrium. In two hours from my arrival, all had experienced almost complete relief, and some of them had fallen asleep. Next

day all had headache and thirst, but these symptoms in twenty-four hours after had entirely disappeared. The mistress of the house was the only one who appeared to have permanently suffered. For several weeks she continued pale, and suffered from irritability of the stomach and bowels, and is still in an infirm state of health; but her period of life may also have had its influence in producing some of the ailments of which she complains.

The next question to be considered is, what was the cause of these symptoms? That it was something in the flour will appear probable from the facts, that some members of the family dined solely on the broth and meat which was at the table that day, and were in no way affected; and those of them who partook of the apples, and did not taste the paste, also escaped with impunity. Mrs. J., who was much worse than any of the others, took none of the apples, but dined almost entirely upon the paste. In short, after the fullest inquiry, I found that the severity of the symptoms was in direct proportion to the amount of the paste which had been taken.

Previous to making use of any of the flour referred to, Mr. J. had sold two stones of it to two different parties; but as these were both strangers, he had no opportunity of finding them out, or ascertaining whether its use was followed with any bad consequences.

A careful analysis by myself, and my highly accomplished friends, Messrs. T. and H. Smith, chemists, Duke Street, made separately, showed no trace of mineral poison; and the only other conclusion left for me to adopt is, that some acrid vegetable poison was mixed with the flour. The symptoms did not exactly resemble those which are said to follow the taking of the Darnel grass, but approach them more nearly than those of any other poison with which I am acquainted. In two members of the family, along with their irritant effects, they seemed to act also on the nervous system. Mrs. J. was reported to have fainted twice before I saw her. She had a good deal of rolling of the eyes and twitching of the muscles and headache which continued for a considerable time. All had headache next day; and one had very decided symptoms of congestion of the brain at the time, which was relieved by venesection. These conjectures, however, are merely thrown out for the purpose of directing attention to the subject, in the hope that some one with more time at his command than I have, and better qualified for the inquiry, will endeavour to give a more satisfactory explanation than that which I have so imperfectly attempted to submit.—*Northern Journal of Medicine*, September 1845.

MIDWIFERY.

COMPRESSION OF THE ABDOMINAL AORTA
IN CASES OF SEVERE MENORRHAGIA
AFTER PARTURITION. MEMOIR BY M.
SCUTIN*.

THE compression of the abdominal aorta is only recommended in classical treatises after all other remedies have been had recourse to. But, according to M. Scutin, the practice ought to be adopted however slight the hæmorrhage, and the ordinary remedies should be regarded as merely auxiliary.

As regards the mode of its execution, the woman ought to be placed horizontally, and the surgeon should stand on her right side, having his right hand free either to assist in the compression, or to aid any obstetric attempts to check the hæmorrhage; such as exciting the contraction of the uterus, removing the placenta or clots, &c. The three middle fingers of the left hand, slightly bent so as to bring their pulps into one plane, should be pressed behind and to the left of the enlarged uterus, near the level of umbilicus; and when the pulsations of the aorta are distinguished, the fingers should be applied along its course, but with a slight obliquity from above to below, and from within to without, so that the three fingers should only completely close the vessel by their simultaneous apposition. The axis of the artery is thus fixed in a plane on the left side of the bodies of the vertebra. *Compression of the vena cava must be avoided*, by not moving the plane of the fingers too much to the right.

The right hand, if at liberty, may be used to aid the efforts to compress the vessel. Forty or fifty seconds will be sufficient to check, and often to arrest the circulation, and in dangerous cases the compression may be continued for a longer period. But M. Scutin fears that in prolonging it much beyond this time, especially if the pressure be not at all relaxed, dangerous congestion of the superior viscera might result. The compression must therefore be occasionally remitted for a few moments. For this purpose the superior finger of the plane must be raised so as to admit of the passage of a small stream of blood; then the other fingers may be slackened in succession, or reapplied according as the hæmorrhage is diminished or not, after this manœuvre. This alternation of pressure, more or less often repeated, is usually required for from ten to twenty minutes. But the compression should not be entirely removed until all danger be over.—From the *Archives de la Médecine Belge*.

CEMENT FOR THE TEETH.

IN consequence of the imperfection of the plans proposed by the different dentists to fill the cavities of decayed teeth, M. Osternaer recommends the following composition with some confidence. It closely resembles, both in solidity and whiteness, the natural enamel. It is composed of thirteen parts of caustic lime and twelve parts of anhydrous phosphoric acid. The lime ought to be chemically pure and finely pulverised, and the phosphoric acid should be obtained from the combustion of phosphorus in dry air. The two substances must be quickly mixed, when a white powder, becoming moist during the process, results. The hollow of the tooth, having been previously dried with wadding, should then be filled with this powder; and the surface levelled, smoothed and then moistened with a little water.—*Gazette Médicale*, 1845.

Medical Intelligence.

THE Royal College of Surgeons has just issued a circular letter, addressed to all the Demonstrators of Anatomy in the Medical Schools of England, requiring them to state the amount of dissection performed by each pupil during the anatomical session. The form is somewhat inconveniently worded; but we believe that a proper return of this kind, is likely to prove a "heavy blow and a great discouragement" to the nefarious system of grinding hitherto pursued. Whether a man puts himself under a grinder, who guarantees his passing for a certain sum or not, will be henceforth of little importance. By a reference to the return, it will be easy to see whether his knowledge is derived from books and plates, or from the dead subject.

DR. J. C. PRICHARD has been appointed by the Lord Chancellor a Medical Commissioner in Lunacy, in place of Dr. H. H. Southey, resigned.

DR. KING writes to inform us, that the appointment of Surgeon to her Majesty's yacht William and Mary, vacant by the retirement of Mr. Edwards, has been given by Lord Haddington to Mr. McCormick, the adventurer to both Poles, he having accompanied Sir Edward Parry to the North, and Sir James Clarke Ross to the South.

OBITUARY.

DIED, on the 7th ult., Dr. R. Graham, late Professor of Botany in the University of Edinburgh, in the 59th year of his age. He filled the botanical chair in the University with great credit for a period of twenty-four years.

* *Gazette Médicale*, 24th March.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

THURSDAY, August 28.—Richard Gillard, Salcombe, near Kingsbridge, Devon.—Alf. Stephens, Ilminster, Somerset.—William Withers Moore, Doncaster, York.—Thomas George Wrench, Salehurst, Sussex.—William Waind, Helmsley, York.—William Symington.—George Dawson Nelson, Yorkshire.

THURSDAY, Sept. 4.—John Eardley, Bloomsbury Street, London.—Thomas John Kent.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Aug. 30.

BIRTHS.	DEATHS.	Aver. of 5 yrs.
Males.... 644	Males.... 413	Males.... 491
Females . 647	Females . 422	Females . 472
1291	835	963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	141
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	113
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	154
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	211
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich (Pop. 479,469)	216
Total	835

CAUSES OF DEATH in the Week ending Aug. 30.

Col. A. Weekly Averages of 5 Summers; Col. B. of 5 Years.

	A.	B.
ALL CAUSES	835	904 963
SPECIFIED CAUSES	835	897 954
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	188	198 184
Sporadic Diseases, viz.—		
2. Dropsy, Cancer, &c. of uncertain seat	71	101 106
3. Brain, Spinal Marrow, Nerves, and Senses	165	158 159
4. Lungs, and other Organs of Respiration	180	229 292
5. Heart and Blood-vessels	31	21 24
6. Stomach, Liver, and other Organs of Digestion	92	88 71
7. Diseases of the Kidneys, &c. ..	7	6 6
8. Childbirth, Diseases of the Uterus, &c.	12	9 10
9. Rheumatism, Diseases of the Bones, Joints, &c.	4	6 6
10. Skin, Cellular Tissue, &c.	3	1 1
11. Old Age	44	55 70
12. Violence, Privation, Cold, and Intemperance	38	25 26

The following is a selection of the number of Deaths from the important special causes:—

Small-pox	10	Convulsions 4 ¹	
Measles	58	Delirium Tremens	
Scarlatina	16		
Hooping-cough ..	24	Bronchitis	11
Croup	6	Pneumonia	38
Thrush	9	Phthisis	107
Diarrhœa	33	Dis. of Lungs, &c. ..	9
Dysentery	4		
Typhus	22	Teething	15
		Gastritis	1
Hæmorrhage	2	Enteritis	17
Dropsy	16	Peritonitis	3
Debility	12	Tabes Mesenterica ..	19
Sudden deaths ..	3	Dis. Stomach, &c. ..	7
		Dis. of Liver, &c. ..	8
Hydrocephalus ..	30		
Apoplexy	29	Childbirth	4
Paralysis	14	Dis. of Uterus, &c. ..	6

REMARKS.—The total number of deaths was 69 below the summer, and 128 below the annual average. The deaths from Zymotic diseases, with the exception of Measles, Hooping-cough, and Diarrhœa, are also below the averages. The mortality from Measles still continues very great. In the East districts, the mortality is above the averages. In all the others, it is below the averages.

ROYAL OBSERVATORY, GREENWICH.

METEOROLOGICAL SUMMARY

For the week ending Saturday, Aug. 30.

	Max.	Min.	Mean.
Height of Barometer ^a	30.17	29.78	30 ^c
„ Thermometer ..	69.4	45.5	57.6 ^a
Self-registering do.	98 ^b	33 ^c	
„ in the Thames water	60.8	59.2	

^a From 12 observations daily. ^b Sun.

RAIN, in inches, 0.04: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 7° above that of the climate of London for the year, but 5° below the mean summer temperature. The extreme range in the thermometer was 65°.

NOTICES TO CORRESPONDENTS.

Mr. R. Smith's request respecting the case of Suffocation by Carbonic Oxide shall be attended to. The case will be inserted as early as possible.

Mr. W. D. Wragge's letter is referred to the Publishers.

Dr. R. Elliott.—We are obliged for the communication; but it is our intention to lay before our readers the whole of the medical bearings of the Health of Towns' Bill. The canvassing system, with respect to the appointments to Medical Charities, is disgraceful.

Mr. Newnham's paper on Revaccination will be inserted.

The communications of Dr. Dick and Mr. Calder have been unavoidably postponed until our next.

Lector's suggestion is a good one, and it shall be communicated to the Clinical contributors. Dr. Palmer's request shall be attended to.

Our correspondent θ wishes us to correct an error in his paper on the pulse, at p. 457. In line 2, for "beyond," read "behind." θ had not seen Dr. T. Williams's paper on the subject. Dr. R. Elliott's second communication is under consideration.

We shall be glad to report any cases showing the good effects of the plans to which Mr. J. Houlton refers.

Received.—Dr. King.—Dr. R. Elliott.—Mr. G. M. Mowbray.—Dr. R. Lee.—Dr. Palmer.

LONDON MEDICAL GAZETTE.

Lectures.

CONTRIBUTIONS TO MICROSCOPICAL MORBID ANATOMY,

*Selected and Translated from the German
Work of*

DR. JULIUS VOGEL, of Göttingen,
Entitled "Erläuterungstafeln zur pathologischen
Histologie."

By W. S. KIRKES, M.R.C.S.L. &c.

Fibrous Tumors.

A MIDDLE-AGED woman was admitted into the Munich Hospital, on account of severe abdominal pains. Her statement was, that for several years there had been a fluctuating tumor on the right side of her abdomen, but which had never hitherto caused her further pain or uneasiness than an occasional sense of weight or bearing down, as if in labour, until just previous to admission, when there had suddenly occurred in it most intense pain, with tenderness on pressure. In defiance of the most energetic treatment, this pain rapidly grew worse, and the woman died on the third day after its first occurrence. Upon examining the body after death, the following appearances were presented. The right side of the great omentum was considerably thickened, and inseparably united, on the one hand, with the walls of the abdomen, on the other with a firm tumor which extended downwards into the cavity of the pelvis, and which was about the size of a large orange. The surface of this tumor was irregularly tuberculated, of a whitish colour, and on the whole tolerably firm to the feel; it was intimately connected with the uterus, especially with its fundus. The upper part of this tumor had begun to soften, and its substance was here and there hollowed out into irregular excavations, which were traversed by bridges and shreds of tissue, soft and friable externally, but tolerably firm in their interior. These excavations were partly empty, partly filled with small grumous masses of blood, or with a greasy greyish-white purulent looking matter. The softening which was going on in this tumor had at one part approached quite to the surface, burst, and a portion of the softened matter had escaped into the cavity of the peritoneum, inducing secondary peritonitis, from which had resulted the sudden severe pain so speedily followed by death.

The inner surface of the uterus was healthy, its mucous membrane being unaltered; but within its cavity was situated a

roundish tumor, about the size of a billiard-ball, tolerably firm, of a bluish white colour, and covered on its surface with a yellowish purulent-looking matter. It lay quite free in the cavity, having no connection at any part with the walls of the uterus. The parietes themselves were very thick; the degrees of this thickness, however, varied, being in some places as much as three inches. Imbedded within their substance were found numerous roundish tumors, of all sizes, from that of a pea to that of a billiard-ball. These tumors for the most part lay free, or at least so nearly free, that they could be separated without any difficulty from the substance of the uterus, within which they were imbedded; they were of a whitish colour, very firm in texture, and of a globular form, though most of them were irregularly tuberculated and nodular. When cut into each tumor was found to consist of a firm, compact, polished white tissue; but with the naked eye no trace of a fibrous or other well-marked structure could be discerned. In the vaginal portion of the uterus was situated another tumor, about the size of a dove's egg, somewhat soft in consistence, and inseparably connected with the substance of the organ; it had a whitish colour, and when cut into was found to be made up of a fibrous network, the areolæ of which were large, and filled with a thickish albuminous fluid.

A careful microscopic examination of the several parts described above furnished the following results. The substance of the uterus was composed of its usual organic muscular fibres, from $\frac{1}{150}$ to $\frac{1}{300}$ of a line in diameter. Here and there between these fibres were scattered numerous granule-cells of a dark brownish colour. The tumor, which was situated within the cavity of the uterus, presented a structure almost exactly similar to that of the uterus itself, being made up of fibres closely resembling those peculiar to organic muscle [with which, indeed, Vogel considered them to be identical], and containing also the same dark-looking granule-cells noticed between the fibres of the uterus. Similar characters were also presented by those tumors, both large and small, which were imbedded within the parietes of the uterus. The softened mass at the upper part of the large tumor which was situated outside the uterus, contained, besides small grumous masses of blood and separate blood corpuscles, numerous pus corpuscles, the presence of which justified the supposition that the softening of the tumor was the result of inflammation. The usual changes were produced on these pus corpuscles by the addition of acetic acid, namely, the gradual disappearance of the cell-wall of each, and the coming into view of its double or triple nucleus; these nuclei

were left entangled in a coagulum formed by the acetic acid, and consisting of a perfectly amorphous structureless mass, resembling coagulated mucus. The bridles and shreds of tissue which traversed the excavations in this softened part, exhibited beneath the microscope the remains of fibro-cellular tissue, which had resisted the process of softening and destruction. The soft tumor situated in the vaginal portion of the uterus seemed to be a fibrous tumor in the process of formation; for in the albuminous fluid which filled up the meshes formed by the network of the fully developed fibro-cellular tissue, were found beneath the microscope numerous roundish or oval cells, containing nuclei and nucleoli, some single, others arranged in groups; these were in all probability primary cells, which would eventually have become developed into fibres.

Several of the other tumors contained in the substance of the uterus were carefully removed, cut into small pieces, and after being repeatedly washed, were subjected to several chemical tests. They gradually dissolved in boiling concentrated hydrochloric acid, forming a colourless solution. In acetic acid they swelled up, became transparent and gelatinous-looking, but a complete solution was not effected even after the lapse of some weeks. Several pieces from these tumors, after being repeatedly washed, and dried with blotting-paper, were weighed, then were thoroughly dried in a water-bath at a temperature of 212° F., and again weighed. Of 1000 parts of the fresh substance, there remained when thus thoroughly dried, only 220, consequently 780 parts consisted of water and other matters volatile at a temperature of 212° F.

*Malignant Tumors.—Medullary Carcinoma.**

The following cases have been selected for the purpose of showing the results obtained from a microscopic examination of masses of medullary cancer from various organs and parts. It will be observed how diversified are the microscopic elements of which such masses are composed.

CASE I.—Medullary cancer of the bladder from a man aged 66, who died of this affection. The bladder was entirely converted into a medullary mass; its walls were more than an inch thicker than natural; the bulk of the organ externally was greatly increased, yet its cavity was much diminished in size; both its external and internal surfaces were rough, uneven, and nodulated. The inguinal glands of the right side and the prostate were, as well as the bladder, implicated in the medullary disease.

The medullary mass into which the blad-

der was converted was of a whitish colour, soft and brain-like in consistence, and easily reducible to a pulp by pressure: it had begun to soften in places. Upon a microscopic examination the following results were obtained: the mass was made up entirely of cells of various forms and sizes—some were round, others oval, others caudate; no one kind predominated over the others; there was the same diversity in respect to size; each cell contained a nucleus, and most of these nuclei were provided with nucleoli. The roundish cells measured from $\frac{1}{100}$ to $\frac{1}{50}$ of a line in diameter, the elongated ones varied from $\frac{1}{50}$ to $\frac{1}{100}$ of a line in length, and from $\frac{1}{100}$ to $\frac{1}{300}$ in breadth; the nuclei in the elongated cells averaged about $\frac{1}{200}$ of a line in diameter; those in the round ones were somewhat smaller. Some of the cells were very large, about $\frac{1}{30}$ of a line in diameter, and these for the most part contained within them several smaller cells, each of which was provided with a nucleus (fig. 35, a. *). There were also a few cells which contained a number of dark granules within them (b.)

FIG. 35.



On treatment with acetic acid, neither the nuclei nor the membranes of these various cells underwent any change. With nitric acid the cells became agglutinated together and enclosed within the amorphous coagulated mass, consisting probably of albumen; the cells themselves underwent no change, with the exception of their nuclei becoming somewhat indistinct (? through the coagulation of albumen in their interior).

In ammonia the cells themselves were not dissolved, being simply rendered paler, but their nuclei entirely disappeared. The dark granules were unaffected by these several reagents. It was clearly discernible that blood-vessels traversed this medullary mass. The diseased inguinal glands, when examined, were found to correspond in all particulars with the above account, the only difference being that in them it was very apparent that the cells of the medullary substance had been developed between the fibres of the fibro-cellular tissue of the gland.

* This and the subsequent figures are represented as magnified 200 diams.

* Medullary fungus, soft cancer, &c.

CASE II.—The tumor in this case was found situated in the lesser arch of the stomach, about two inches from the pylorus, in an aged woman who died of pneumonia. It was of an oval form, about three inches long and two broad, depressed in the centre, and seemingly made up of several lobules, the sizes of which varied from that of a bean to that of a walnut. The tumor was covered over by the mucous membrane of the stomach, which was unaltered; it was of a tolerable consistence (somewhat steatomatous), and was not in any part softened. Its cut surface presented a yellowish white colour: it exhibited no trace of blood vessels. When examined beneath the microscope it was found to be composed entirely of colorless nucleated cells of various forms, which were arranged together in a tessellated manner without the intervention of any connective medium or tissue. The cells when isolated presented partly a roundish or oval, and partly an elongated form, a few only being caudate, (fig. 36): they varied in length from $\frac{1}{16}$ to $\frac{1}{8}$ of a line, in breadth from $\frac{1}{16}$ to $\frac{1}{8}$ of a line, the nuclei being from $\frac{1}{32}$ to $\frac{1}{16}$ of a line in a diameter. These cells were dissolved neither by acetic acid nor by ammonia.

FIG. 36.



CASE III.—An aged woman died of a malignant disease of the uterus, which after death was found to consist of medullary carcinoma affecting the vaginal portion. The carcinomatous mass was very soft, and of a yellowish white colour; beneath the microscope it presented several varieties of cells, and other microscopic objects, viz. caudate cells with nuclei and nucleoli (fig. 37, *a, a*); roundish cells also possessed of nuclei and nucleoli (*c*); cell-nuclei containing nucleoli (*b, b*); very large cells which contained a considerable quantity of nuclei in their interior (*d, d*); numerous drops and granules of fat (*e*); and lastly, several crystals of cholesterine. A large softened medullary mass occupied the situation of the left psoas muscle; it was composed of similar microscopic elements to those found in the disease affecting the uterus.

FIG. 37.



CASE IV.—Fig. 38 illustrates the microscopic elements of a medullary disease affecting the liver of a middle-aged woman, in whom the bladder and vaginal portion of

FIG. 38.



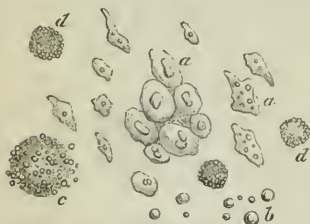
the uterus were similarly diseased. The liver was not enlarged, but every part of its substance was beset with yellowish white circumscribed tumors of various sizes and forms, some spherical, others kidney-shaped, and others nodulated; they varied in size, from a pea to a walnut. These tumors were quite circumscribed, and surrounded by the healthy parenchyma of the liver; at no part did they project from the surface: in texture they were fibrous and radiated, in consistence tolerably firm, presenting no trace of softening; they contained blood-vessels, distinctly visible to the naked eye. Beneath the microscope they appeared to be composed entirely of cells, possessed of nuclei and nucleoli. These cells were for the most part round or oval, a few being caudate; on the addition of acetic acid they were rendered pale, and their nuclei brought more distinctly into view (*a*): here and there, deposited within an amorphous eytoblastema, were observed simple cell-nuclei (*b*).

CASE V.—In an officer who had frequently suffered from gonorrhœa, there was found after death, deposited in the lung, a

tumor about the size of a walnut, of a yellowish white colour, and of a soft brain-like consistence; this morbid growth was regarded as one of medullary carcinoma. When examined beneath the microscope with rather low powers* it was found to be provided with a very distinct network of capillary vessels which were still full of blood; with higher powers† it appeared to be entirely composed of an immense number of small drops of oil, from $\frac{1}{200}$ to $\frac{1}{350}$ of a line in diameter; these drops were dissolved both by alcohol and by æther, but were not affected by ammonia. Upon removing these oil drops by pressure and by washing, the healthy tissue of the lung was brought into view, which, as well as the pulmonary tissue immediately surrounding the tumor, did not appear to have undergone any change.

CASE VI.—Fig. 39 illustrates the mi-

FIG. 39.



croscopic characters presented on the examination of a medullary carcinomatous mass, affecting the right inguinal glands of an aged female, in whom the uterus was similarly diseased, and exhibited the same microscopic elements. The mass of diseased glands was of a yellowish white colour, of a soft brain-like consistence and an unctuous feel. Beneath the microscope it was found to be composed chiefly of cells of various forms, and from $\frac{1}{400}$ to $\frac{1}{350}$ of a line in a diameter (a): they were for the most part roundish or oval, a few only being caudate. Moreover, there was observed a considerable quantity of fat, occurring in the form of scattered granules and drops (b), and of granules which cohered in good-sized heaps (c); here and there a few granule cells were observed.

A case is related by Muller‡ in which a growth of medullary carcinoma occurred in the thigh of an infant, and on examining which a number of the caudate corpuscles or cells were found arranged together in bundles as represented in fig. 40. (after Muller.)

CASE VII.—Charles S., a young man, aged 29, of good general health, with no

FIG. 40.



syphilitic taint, had suffered for four or five years from a gradually increasing swelling of the right testicle, accompanied with a hydrocele of the same side; he never experienced more than occasional pricking pains in the affected testicle, which was not painful on pressure: the hydrocele had been frequently tapped, with but temporary relief: he at length consented to have the testicle removed by operation. When examined it was found not much enlarged, being $2\frac{1}{2}$ inches long, 15 lines broad, and 20 lines in thickness; it still preserved its oval form, and its surface was not uneven. The epididymis was considerably enlarged, about the size of a pigeon's egg, nodulated, and had a fatty appearance. The tunica vaginalis was in places adherent to the tunica albuginea of the testicles, but not to the epididymis, which was quite free. When cut into, both the epididymis and testicle presented an homogeneous fatty appearance, resembling compact adipose tissue; numerous bright white points were observed here and there within the substance of the testicle; not a trace of seminal tubules could be discovered. In consistence the substance of the testicle was lardaceous or steatomatous: it had a fatty greasy feel.

Upon examining microscopically portions of the epididymis, there were observed an infinite number of small pale nucleated cells, which comprised by far the greatest part of the substance: when washed away an amorphous mass was left. These cells were from $\frac{1}{400}$ to $\frac{1}{350}$ of a line in diameter, their nuclei from $\frac{1}{500}$ to $\frac{1}{800}$ of a line; they were not dissolved by acetic acid, but the mucus-looking mass in which they were immersed was coagulated thereby; in ammonia both the cells and amorphous mass were dissolved and disappeared. Portions of the testicle which were subjected to the above tests

* 90 Diams.

† 220 Diams.

‡ Ueber den feineren Bau und die Formen der krankhaften Geschwülste. See also Dr. West's translation.

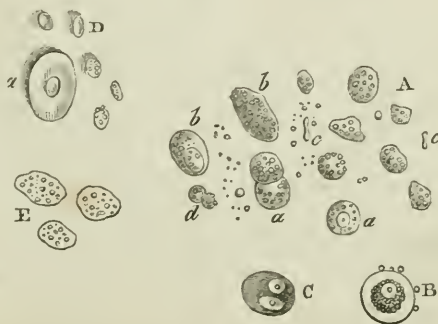
comported themselves in an exactly similar manner; they exhibited a still larger abundance of cells. Both in the testicle and the epididymis, there were observed here and there some spots about the size of a pea, which differed from the parenchyma around them, in leaving a yellowish colour, and being firmer and more compact. These portions, when examined beneath the microscope, presented no trace of cells, but were made up of a perfectly amorphous lardaceous mass (in which were many small drops of fat), which by the action of acetic was softened and rendered pellucid. Other portions were of a whiter colour, and of a somewhat tendinous structure, in which a fibrous arrangement was observed beneath the microscope. Not a trace of seminal tubules or of spermatozoa could be discovered.

CASE VIII.—The subject of the following case was a young man, in whom there was a large swelling affecting the left knee-joint; the extremity below the knee was greatly wasted; the body generally was much emaciated, and hectic fever was present; on the dorsum of the right foot was a scrofulous-looking ulcer. The affected knee was about double its natural size. Upon examination it presented a feeling somewhat akin to fluctuation; the skin over it was tense, yet nowhere discoloured. The limb was amputated by Prof. Stromeyer, at the lower third of the thigh, and was submitted to Vogel for examination immediately after the operation. Upon opening the knee-joint it was observed at once that the disease had its seat essentially in the synovial membrane, and in the adipose tissue surrounding it; there was no increase of synovial fluid. The entire synovial membrane (with the exception of at those parts where it was reflected over the articular cartilages), was converted into a soft reddish grey substance, resembling in consistence and general characters ordinary adipose tissue, from which its peculiar colour alone distinguished

it;* the surrounding adipose tissue had undergone an exactly similar change, being in some places half an inch and more in thickness, though in others not more than two or three lines. The diseased synovial membrane and its surrounding adipose substance so closely resembled each other, and were so intimately connected together, that it was not possible to distinguish the one from the other. Strewn irregularly about within this degenerated substance were observed several softened spots, varying in size from a pea to a bean, containing a dirty yellowish white fluid, of a thickish puriform character. The cartilage of the patella, as also that covering the articular surfaces of the femur and tibia, appeared perfectly healthy; a thin slice from that of the patella, when examined beneath the microscope, presented nothing abnormal; the cartilage corpuscles, together with the amorphous intercellular substance, had their usual appearance, with the exception of the corpuscles containing for the most part a large quantity of fat. The free surface of these several cartilages was however covered almost universally by a thin membranous layer about as thick as letter-paper; this layer readily admitted of being drawn off in gelatinous-looking threads of an opaque greyish yellow appearance. The following particulars were obtained from a microscopic examination of the several parts above described:—

1. The membranous layer just mentioned as covering the surfaces of the cartilages, appeared composed of a perfectly amorphous substance, resembling coagulated fibrinous exudation, and was unprovided with any trace of vessels, fibro-cellular tissue, or epithelium; there were observed in it a few cells, most of which had the appearance represented by fig. 41, A; others possessed a very thick cell-wall, and contained in their interior a number of granules as well as their nucleus (fig. 41, B); others again were provided with two or more nu-

FIG. 41.



* [This condition, which corresponds to the "degeneration of the synovial membrane," described by Sir B. Brodie, is regarded by Vogel as

a form of soft cancer, and for this reason appears under the present head.—TR.]

clei (C). Upon treatment with acetic acid the amorphous membranous substance was rendered perfectly transparent, whereupon a number of cell-nuclei came distinctly into view. It would seem from this that the layer in question was the blastema of a future morbid growth.

2. The yellowish-white purulent-looking matter, which was mentioned as being contained in the softened places observed here and there within the thickened degenerated substance of the membrane, was found to be composed of a colourless fluid holding in suspension a considerable number of large and small sized cells. These cells were of a round or oval form; the small cells were from $\frac{1}{100}$ to $\frac{1}{80}$ of a line in diameter, (fig. 41, A, *a*), some being even still smaller, not more than $\frac{1}{400}$ of a line (*d*—these were in all probability mere cell-nuclei); the large ones varied from $\frac{1}{100}$ to $\frac{1}{80}$ of a line in their longest diameter. The majority of these cells were beset with dark granules (fat?) and many of them presented a distinct nucleus with nucleus corpuscles. Besides these cells were also observed a few blood-corpuscles (fig. 41, A, *c*) and numerous granules of fat. On the addition of acetic acid the colourless fluid became coagulated, and the membranes of the cells were rendered very pale (fig. D, *a*), or entirely disappeared; the nuclei of the cells were then brought very distinctly into view (fig. D); they were all single, and very different from the nuclei of pus corpuscles, after having been subjected to the action of acetic acid. The dark granules with which most of the cells were beset were left unchanged by acetic acid (E). By liquor ammoniæ the colourless fluid was not affected, but the cell walls, as also the cell nuclei, were rendered pale thereby, and eventually disappeared; the dark granules, with which many of the cells were bedecked, were not attacked by this reagent, and consequently came more distinctly into view when the cell walls were rendered pale, as at E. Upon exposing this colourless fluid in which the cells were suspended to the action of further chemical reagents, the following were the results obtained: (*a*) Upon the addition of nitric acid it was converted into an abundant, almost amorphous, white coagulum, within which the cells were enclosed; the cells themselves underwent no change; (*b*) with ether an abundant coagulation of a dark amorphous substance (? albumen) was produced; and the dark granules with which the cells were beset were for the most part entirely dissolved, which proves that they were composed of fat; (*c*) infusion of galls threw down a very copious precipitate, which was in part granular—amorphous, and of a brownish colour (albumen), in part entirely amorphous and colourless (extractive matter): the cells

were enclosed within this precipitate; (*d*) with chloride of silver a very abundant amorphous and colourless precipitate was formed, within which the cells also were enclosed; (*e*) nitrate of silver also produced a copious precipitate, which in part consisted of a black granular substance (chloride of silver), in part of a deep-brown perfectly amorphous matter (albumen); (*f*) a small coagulation was affected by acetic acid, consisting probably of pyin; (*g*) alum produced a tolerably copious precipitate, about as much as was formed by acetic acid, though much less than that effected by the reagents which coagulated albumen: this precipitate was colourless and amorphous; it enclosed within it the unaltered cells.

3. The peculiar greyish-red substance into which the synovial membrane and its surrounding adipose tissue was converted, contained within it numerous distinct blood-vessels, which traversed every part, forming an irregular network. Within the texture of this degenerated mass were found cells exactly similar to those described as being present in the softened places (fig. 41, A). Upon washing away as many of these cells as possible, a fibro-amorphous substance, forming the ground-work of the tissue, was left behind, and which, on closer examination, was found to consist of parallel ribbon-like fibres (fig. 42, A), resembling those of organic muscle. Upon treatment with acetic acid these fibres were rendered very pale, and their nuclei were brought into view, some of which were oval, with nucleus-corpuscles, others elongated, acuminated, and shaped like a grain of wheat (fig. 42, B, *a*). Acetic acid rendered the whole fibro-amorphous substance transparent, and brought universally into view (even in those places where the individual fibres could not be distinctly seen) a number of elongated nuclei, arranged in parallel series (fig. 42, B, *b*), which rendered it most probable that each seemingly amorphous part was in reality also composed of fibres. These fibres ran in small parallel bundles, and assumed a tolerably straight course; but there seemed to be no regular arrangement of these fibres into any kind of texture. The cells were scattered between the fibres, often in considerable heaps: in many places the fibres especially prevailed, in others the cells. In some places the degenerated mass was very like ordinary adipose tissue, but with the microscope there were observed in these places only the above described elements, namely, fibres and cells, together with a large quantity of fat-drops. The transition from the diseased to the healthy tissue was very gradual. Upon examining with the microscope portions of the surrounding adipose tissue, they appeared at first sight to be quite healthy, nothing but

FIG. 42.



the ordinary fat-cells, traversed by blood-vessels, being visible; but when as much as possible of the fat had been removed by pressure and washing, only a very small portion of the substance which remained consisted of the normal elements of adipose tissue, by far the greater part being composed of the newly formed or degenerated substance (fig. 42). It seemed evident that the fibres of the degenerated tissue were here being formed (like those of organic muscle) from the spindle-shaped cells. These cells were in great abundance in the adipose tissue, some being separate, others arranged in groups (fig. 42, C); their nuclei and nucleoli were brought distinctly into view upon treatment with acetic acid. In some places between the cells of the normal adipose tissue were deposited the fibres and cells of the degenerated substance (fig. 42, A). Portions of this degenerated substance were submitted to a chemical examination, but it unfortunately was not completed, owing to an unavoidable interruption, and the following results only were obtained: that 1000 parts of the fresh substance contained 171 parts of fixed solid ingredients, and 829 parts of matter volatile at 212° F. (water), and that the diseased mass contained a large quantity of fat.

[Scherer* examined some portions of medullary carcinoma, and found that of 100 parts of the fresh substance only 13 of solid residue were obtained after being heated in a water-bath, the other 87 parts having been dissipated as water and other volatile substances: of the solid residue 4.3 consisted of inorganic salts, the greater part being phosphate of lime and magnesia.

Scherer also gives the results of a chemical and microscopic examination of some

masses discharged by vomiting from a patient affected with medullary carcinomatous disease of the stomach. These several masses had a reddish brown colour, and contained in their interior a large quantity of yellowish-white granular substance, which was encased as it were by a layer of brownish coagulated blood. Upon examining such masses beneath the microscope there were observed (a) peculiarly altered blood-corpuscles, which appeared shrivelled up, and partially dissolved; also (b) a large quantity of partly round, and partly elongated cells. The masses were then submitted to a chemical examination, and the conclusions finally arrived at, were to the effect that these vomited masses were composed of broken-down medullary carcinomatous particles and of blood, the latter of which had undergone some change, due in all probability to the action of the free acid of the stomach.—Tr.]

QUICKSILVER MINE.

It is announced in a late number of the *Athenæum*, that a mine of this valuable metal, in the state of sulphuret, has been lately discovered near Pietra Santa in Tuscany. The ore is said to yield twenty per cent. of metal. The chief sources of supply in Europe have been hitherto the mines of Almaden in Spain, and those of Idria in Northern Italy. A small quantity has been also worked in the duchy of Deuxponts. The great value of this metal in medicine and the arts, renders a discovery of this kind peculiarly interesting, and we can only hope, for the benefit of science, that this new source may turn out to be as productive as the report which we have seen, announces it to be.

* Untersuchung zur Pathologie.

CLINICAL LECTURE,

*Delivered August 27th, 1845,*BY BRANSBY B. COOPER, ESQ.
Surgeon to Guy's Hospital.*Ruptured Bladder.*

GENTLEMEN,—The first subject for to-day's remarks is the case of T.B., a man of ordinary conformation, but of a leucophlegmatic temperament, aged 35, who was admitted Tuesday the 17th of June, into No. 1 Cornelius ward, for retention of urine. He is a sawyer, living at Lambeth; is married, and has a family. He has lived rather freely, but always enjoyed good general health. On the morning of the day previous to his admission he was fighting, when his antagonist butted at him, striking him with his head in the left groin, and throwing him over his shoulder. He was carried home, and soon found himself unable to pass his water; in his efforts to do so he passed some blood; he was therefore brought to the hospital. Mr. Cooper saw him upon admission, and passed a No. 6 catheter with ease into his bladder, drew off his water, which was small in quantity and slightly bloody. He moved with difficulty in his bed, complaining that any muscular exertion gave him great pain.

June 18th.—Passed water with tolerable freedom. Complains of pain in the left groin, and across the abdomen, to an extent which prevented him sleeping last night. His bowels being costive, he was ordered the following pill:—

R. Hydrag. Chlorid. gr. iii.; Ext. Coloc.
Comp. gr. v.; Potass. Antim. Tart.
gr. ʒ. M. ft. pilulæ ij. statim sumendæ.

19th.—Pain and tenderness of abdomen increased. Bowels have not been opened since his admission. To have an injection of house medicine. Apply twelve leeches to the left pubes, and poultices; and foment the abdomen. To take—

Hydrag. Chlorid. gr. j.; Pulv. Opii,
gr. ʒ. M. ft. pilula quartâ quâque
horâ sumenda.

20th, 11 A.M.—Slept somewhat better. Tongue furred and dry; pulse 116; countenance anxious; belly very tender, rendering respiration difficult. About two o'clock in the afternoon five-and-twenty more leeches were applied to the abdomen, after which he expressed himself as being much easier.

21st, 10 A.M.—Dozed from two o'clock this morning till four. Abdomen not so tender as yesterday, excepting around the umbilicus; pulse rapid and weak; he appears to be fast sinking. He died at a quarter past 11 A.M.

Sectio cadaveris 50 hours after death.—

The external appearance of the body was that of a robust healthy man. Upon laying open the abdomen there was found in it a quantity of dark brown-coloured fluid; but the peritoneum did not present any trace of inflammation. Upon removing and laying open the bladder, its mucous coat was found of a rosy tint; and in the inferior surface, and rather to the left of the centre, was a rent about three-quarters of an inch long, the edges being of a dark colour. On the outside of the bladder the parts around the fissure were also of a dark colour; and between the peritoneum and internal abdominal fascia was found a discoloration extending upwards into the left lumbar region. From these appearances it was thought that the fluid in the abdomen might be urine; but Dr. Gull found, upon evaporating a drop to dryness upon a slip of glass, that it became thick, and that, upon the addition of nitric acid and of chloride of sodium, no crystals, either of nitrate of urea, or of urea modified by chloride of sodium, could be detected. There was not any fracture of the pubes.

REMARKS.—From the situation of the bladder when empty, and the amazing elasticity of its parietes in that state, we must regard the possibility of its rupture as somewhat problematical under the particular circumstances of this case, although this might easily have happened when both its position and elasticity were altered by distension. We must not regard the non-existence of urea in the extravasated fluid as a proof that the bladder was empty at the time of the accident, for in a temperature equal to that of the body, urine is decomposed with great rapidity; and as five days intervened between the accident and the death of the patient, there can be but little doubt that decomposition had ensued; hence the presence or absence of any of the salts of ammonia, especially of the carbonate, would perhaps have afforded a more decisive criterion of the real nature of the fluid.

I confess I was led to suspect fracture of the pubis in this case, and consequent peritoneal inflammation, from the nature of the injury, and from the patient passing blood so soon after its infliction; but you see I was mistaken. Where there is peritoneal inflammation, I consider the best plan of treatment is to get the patient under the influence of mercury as soon as possible, and therefore Cal. c. Opio was ordered. Independently of the rarity of the bladder being burst without fracture of some part of the pelvis, this case presents a peculiar feature, namely, the absence of collapse; for this is one of the most important symptoms of injury to the viscera. If a man has tympanitic abdomen, small weak pulse, anxious countenance, and collapse, you may be

pretty sure that some of the viscera have been seriously injured; if the spleen or liver have been ruptured, the collapse is fatal. But this man had merely local acute symptoms, and therefore I ordered him twelve leeches to the pubes, and not more, because I thought him a man of but little power. The cause of so sudden a death is certainly a mystery, for there was not any extravasation into the peritoneum, but only effusion into the abdominal walls.

Injury to the head.

The next case is that of T. N., a healthy-looking man, of ordinary form, æt. 28, who was admitted into Cornelius ward, No. 11, on June 13th, 1845, having received an injury of the head. Is a labouring man, living at Walworth, and has been accustomed to take three or four pints of beer a day, besides spirits. He was cleaning down a shop-front on the morning of his admission, when he fell off the steps (probably in a fit), a height of four or five feet, to the pavement. He was picked up insensible, and conveyed to the hospital. He had three fits previous to his admission, and three more afterwards, of an epileptic character. He had never been subject to them before. He slept at intervals during the day, and at other times was unconscious, frequently endeavouring to get out of bed. There is an irregular lacerated wound, about an inch long, on the back part of the head, slightly denuding the bone; it was dressed in the usual manner.

14th.—Is more sensible to-day. Has vomited several times during the morning. Has not had any more fits. The head was ordered to be shaved, and he was put upon low diet. To take Hydrarg. Chlorid. gr. v. statim.

16th.—His bowels not having been opened for the last three days, he took of colocynth and calomel, fifteen grains, and a dose of house medicine, which operated well.

17th.—Very much improved in every respect.

18th.—Complains of pain in the back of the head. Mr. Cooper being of opinion that there was matter burrowing under the scalp, an incision was made, and a small quantity of pus let out. To take Pulv. Doveri, gr. x. at bedtime.

21st.—Had a slight rigor to-day. Forehead, head, and back of neck, tender, slightly red and puffy. Appetite bad; tongue white; bowels open; pulse 88.

To take Ammonia Sesquicarb. gr. xvij.; Infusi Serpentariae, ʒiss. M. ft. haust. To be mixed with a table-spoonful of lemon-juice, and to be taken in the effervescent state three times a day.

23d.—Cuticle of forehead desquamating. Eyelids and nose swollen and tender; bowels

open; tongue furred and dry. Complains of thirst; skin cool; sleeps well; pulse 100. Ordered six ounces of Port wine, and a pint and a half of porter daily.

To take Ammon. Sesquicarb. gr. iij.; Træ. Cinchonæ, ʒj.; Decoct. Cinchonæ, ʒiss. M. ft. haust. ter die sumendus.

ʒ Pulv. Doveri, gr. v. hora somni sumend.

25th.—Eyelids suppurating, and the swelling very much diminished; bowels open; pulse 80.

28th.—Convalescent.

REMARKS.—Erysipelas of the face and head is very common after wounds of the scalp, and, indeed, more frequently occurs spontaneously in the face than other parts of the body. It is more frequently the result of constitutional derangement than of any peculiar action in the wounded part. Although sometimes following irritating applications to the wound, it is then rather to be considered as eliciting it in a constitution predisposed for the disease, than actually producing it. It generally occurs in constitutions broken down by excesses of any or every kind; and hence the great precaution necessary in depletion. I have rarely seen depletion of use, excepting in the very commencement of the disease, and then rather by acting upon the secretions than by loss of blood, which invariably increases the irritability in proportion as it diminishes the powers of the constitution. When the bowels have been opened, Dover's powder may be given, and ammonia, with serpentary or bark, and warm fomentations to the parts affected with erysipelas. Porter or wine, or both, are generally necessary. Of all things beware of cold lotions in erysipelas about the head, as they generally induce delirium, from what is called metastasis to the brain. The pulse in erysipelas is rarely that of inflammatory action, but more of the hæmorrhagic diathesis; and this is proved in some measure by the circumstance, that the effusions are seldom of coagulable lymph, but rather of pus globules imperfectly formed—in fact, exudation globules passing into pus.

Fractured Ribs.

R. B., a corpulent, plethoric man, æt. 45, by occupation a bricklayer, living at Lambeth, was admitted July 2d, 1845, into Cornelius ward, No. 2, for fractured ribs. Has enjoyed good health, with the exception of an attack of inflammation of the lungs, and typhus fever, four years ago. He states, that on the morning of his admission he tripped up and fell against the edge of a bedstead. He sent for a surgeon, who wrapped a jack-towel round his chest, and recommended his removal to the hospital.

When admitted, his breathing was exceedingly difficult, his countenance very much congested, and he experienced a pricking pain in the left side. Upon examination, crepitus could be very readily detected about the seventh and eighth ribs. A piece of wetted pasteboard was applied over the fractured ribs, and a flannel roller around the chest. He was bled to fourteen ounces, when faintness supervened. He was very much relieved by the bleeding. His abdomen was tympanitic, and there was a small reducible umbilical hernia, which was of long standing.

To take the strong antimony and opium pill, with one grain of calomel at bedtime, and a dose of house-medicine to-morrow morning.

July 3d.—Passed a good night; pulse quick and sharp; bowels opened several times by the medicine, and the tympanitis very much diminished.

15th.—Has continued to progress favourably since last report, and may now be considered as convalescent.

REMARKS.—The manner in which the accident occurs is of importance in cases of fractured ribs; for if the chest has been jammed, the salient angle will be outwards, and the accident less dangerous, than where the fracture has been produced (as in this case) by a direct blow or fall upon the ribs; for then the salient angle will be inwards, and the prognosis will be more unfavourable, from the chance of the lungs being wounded. For this reason, and from the urgent dyspnoea, the prognosis in this case was at first unfavourable, but you see the symptoms were relieved by the bleeding, bandaging, &c. The bleeding diminishes the action of the heart, and the tendency to inflammation; and after its employment the potassio-tartrate of antimony is a very excellent medicine for maintaining the influence produced by the loss of blood. Calomel also, just to affect the mouth, acts as a preventive to inflammation of the serous membranes. The use of the bandage is evidently to diminish the action of the lungs, and keep them as quiet as possible; it does not act as splints to the long bones, which are for the purpose of keeping the fractured extremities in apposition; or, if there be any analogy, it is where a splint is put behind a joint to prevent motion, for the bandage around the chest performs the same office. In diseases of the respiratory organs, the great difficulty in the treatment is to keep the parts quiet; and hence the great danger of disease of the larynx, for which, in my opinion, openings in the trachea are not sufficiently often made for the purpose of maintaining a perfect state of rest of the diseased cartilages of the larynx. During sleep these organs are

in a comparative state of rest, and therefore opiates, or rather sedatives, are indicated; the objection to the first being, that they check the natural secretions. Hence bandaging, antimony, opium, calomel, aperients, and complete rest, are the means to be employed in cases of fractured ribs under common circumstances, the effects of which remedies have been well illustrated by the result of this case.

Compound fracture of the knee-joint—amputation—death.

D. D., æt. 32, a short, healthy-looking man, was brought to the hospital on Saturday, July 5th, 1845, having received a severe compound fracture of the left knee-joint. He was originally a shoemaker, but was obliged to give up that employment on account of ill health, and has worked latterly as a labouring engineer at Rotherhithe. Has been accustomed to take four or five pints of porter daily, and occasionally spirits. About eight weeks ago he got entangled in some machinery, and fractured his clavicle and wounded his cheek. He had not recovered from this more than a fortnight, when the present accident occurred. He was employed upon the latter occasion in receiving the iron (which is red-hot) as it came from between the rollers, when, owing to some fault in the machinery, a bar weighing about six hundred-weight took a curved direction as it came out, and before he could make his escape pinned him by the left knee to the wall. As soon as extricated he was sent to the hospital. When admitted (about six o'clock in the evening) he was collapsed, and some brandy and water, with thirty drops of tincture of opium, was therefore given to him. Upon examining the nature of the accident, there were found two large wounds on the outer side of the knee, laying open the joint, the integuments around being burnt and contused. There was also a small laceration in the ham, through which protruded the fractured extremity of the femur. There was not much hæmorrhage. Mr. Cooper was immediately sent for, who recommended amputation; to which the patient readily consented; and accordingly the operation was forthwith performed. Mr. Cooper performed the circular operation after his usual method, making a short perpendicular incision in the back of the thigh. The limb was large, and gored with blood, and the muscles being torn from their attachments, rendered their division difficult. Four arteries required ligature, and some venous blood was lost. The thigh was encircled with strips of plaster, and the flaps temporarily brought together in a vertical direction by means of transverse pieces. The patient was then removed to bed; forty drops of tincture of opium given; a

sponge dipped in cold water applied to the stump, and gentle pressure kept up for three or four hours, after which the stump was finally dressed.

Upon an examination of the amputated limb, the following appearances presented themselves:—There were two large wounds on the outer side of the knee, exposing a side view of the joint, and the integuments around were burnt. The femur was fractured at the commencement of its lower third, which was bent at right angles to the tibia by the action of the gastrocnemii, the fractured extremity protruding through a wound in the popliteal space. The muscles were so torn and bruised that it was impossible to recognise them. The sciatic nerve was bruised, and several spicula of bone were sticking in it. The vein and artery were both torn through, and the upper extremity of the latter was filled with a large coagulum. The lower extremities of both vessels were so displaced, that they could not be found but by tracing them upwards from the sound parts below.

At 11 o'clock, P.M. there had been a little oozing of blood, and he was rallying from the shock of the operation.

July 6th.—Passed a good night. The stump looks well, and he himself looks remarkably well. To take

Hydrarg. Chlorid. gr. iss.; Pulv. Jacobi Veri, gr. iss.; Pulv. Opii, gr. $\frac{1}{2}$; M. ft. Pil. hora somni sumend.

7th.—Slept well, and continues to progress very favourably. About five o'clock in the afternoon, arterial hæmorrhage occurred to the amount of about an ounce and a half; it was speedily checked by the application of cold.

8th.—Passed rather a restless night, but looks remarkably well: he is depressed in spirits. Eat an egg for his breakfast, and has taken half a pint of porter since. About two o'clock in the afternoon, secondary hæmorrhage occurred, which was controlled, until Mr. Cooper's arrival, by pressure upon the femoral artery in the groin. Mr. Cooper removed the dressings, opened the stump, turned out a large coagulum, and discovered the profunda artery bleeding from its open mouth. It was seized with a tenaculum, and a strong ligature placed upon it. After exposure to the air for a short time, the stump was closed by strips of plaister, and thirty drops of tincture of opium were administered. He vomited in the evening.

9th.—Slept occasionally during the night; he was sick again this morning; complains of pain in the chest, which was somewhat relieved by a mustard poultice; stump very comfortable. Ordered four ounces of wine daily, which had the effect of making the pulse fuller, slower, and firmer.

10th.—At one o'clock this morning, he was restless and wandering, and had not slept, from an increase of pain in the chest. A pill containing two grains of calomel and a grain of opium was given, after which he dozed occasionally. Another sinapism was also applied to the chest.

At eight o'clock, A. M., the pain in the chest and catching of the breath still continuing, he took another calomel and opium pill, and two hours afterwards three drachms of castor oil, which operated three times. He ate a small piece of mutton-chop for dinner. The stump was dressed; there was a thin foetid discharge from it, but no adhesion. In the evening he was ordered four ounces of brandy.

11th.—Restlessness and delirium; countenance anxious; no sleep last night, although two grains of opium were given; he complained of pain in the chest in the night, and another sinapism was applied, which relieved the pain; skin sodden from excessive perspiration; pulse 116, full and compressible.

At 11 o'clock, P. M. Tr. Opii, 5j. was administered, and about two o'clock he became much calmer, and dozed at intervals during the remainder of the night.

12th.—Is under the influence of the opium, and when roused answers incoherently. Took an egg beat up in his tea for breakfast, and ate a mackerel for dinner: he continues to take his brandy and wine.

13th.—At two o'clock in the morning, the dresser was called up, who found him perfectly rational, and complaining of great pain in the left side. Pulse very rapid and small, and he presented every appearance of approaching dissolution. Brandy and opium were administered, but he continued gradually to sink, and died at 10 o'clock the next morning.

REMARKS.—It being obvious from the nature of the injury, that the limb could not be saved, immediate amputation was recommended, and thus early that no restorative action could have commenced, any disturbance of which necessarily becomes a second shock to nature, under the most unfavourable circumstances. No one would think of operating during collapse, but would of course wait till that form of constitutional disturbance had gone off, but yet operate, before nature had adapted the constitution to repair the injury. If the collapse lasted for two or three hours, and the operation were delayed until the patient had recovered from it, that would not constitute a secondary amputation; for however long the collapse might remain, no local or constitutional action would be set up during its continuance, and the shock to the constitution would be much less, than where nature had already set up an attempt at reparation.

The upper extremity of the artery in this case presents an excellent example of the form of the coagulum that blocks up the open mouth of a vessel. You see it is of a conical shape, the apex being contained within the vessel, and the base applied to its mouth. After a few days the red particles are absorbed, and the clot of fibrin appears to act as an extraneous body, creating a slight degree of irritation; adhesive matter is consequently thrown out between the side of the cone of fibrin, and the internal coat of the vessel, which finally becomes organized. When an artery has been divided, and the ends are not widely separated, small vessels from the upper extremity anastomose with others proceeding from the lower, and thus the circulation is again carried on through the wounded vessel. It was very early for so firm a coagulum to form in this artery, but it was probably owing to the contact of the red-hot iron inducing coagulation.

As there are different modes of checking secondary hæmorrhage after amputation, it may very properly be asked, why tying the vessel in the stump was preferred in this particular instance? The reasons were—first, that the operation had been so lately performed, and as the disposition to hæmorrhage rendered it probable that the stump was filled with coagulum, its removal would certainly be advantageous. But when secondary hæmorrhage occurs after the separation of a ligature, and sufficient time has elapsed for the cure to have proceeded to a great extent, it would be highly improper to tear through all the adhesions in the stump in order to seize the bleeding vessel; and therefore tying the femoral artery at the upper part of the thigh would be the correct mode of arresting the flow of blood under such circumstances.

Persons who have seen amputations of the limbs after injuries received by healthy men, cannot but have observed the general tendency that exists to oppression of the chest; and it is much to be regretted that in this case a post-mortem examination was not permitted, as it would probably have been found either that pneumonia or pleuritic effusion had taken place, as a means likely for nature to adopt in order to accommodate the circulation of a natural quantity of blood to a diminished quantity of body. Thus a blister, producing local effusion in the neighbourhood of an inflamed part, diminishes the tension resulting from diseased action; and also, in suppression of urine, how frequently do we find that effusions take place into the serous cavities, the blood thus getting rid of its superfluity. The considerations arising from these facts lead necessarily to the belief that circumstances may induce the propriety of endeavouring to obtain a suppu-

rate rather than an adhesive process of cure of a stump: thus following the practice of our continental neighbours, whose mode of treatment by charpie we should be careful how we condemn. Not that I advocate its employment in every case, as I think the truth will be found to lie between the extremes of the two modes of treatment, but I am certainly inclined to believe that in many instances the healing of a stump by granulation may be preferable to the usual plan we adopt of exciting the adhesive process, especially in those cases in which amputation of the lower limb is rendered necessary from the severity of the injury, and from its occurring in strong plethoric constitutions.

DILATABILITY OF THE UPPER PORTION OF THE VAGINA.

M. COLOMBAT remarks that, instead of being a cylindroid canal, as it is described to be by almost all the anatomists, the upper third part of it exhibits a dilatation so considerable as to admit of the finger pressing it aside in every direction, and even to our examining the very corpus uteri. The translator observes, that this part is often noticed in the management of early abortions, say of six weeks, or two months. In such cases, when attended with great hæmorrhage, it is common to find the part of the tube in question enormously distended, even when it does not, at the moment, contain but little fluid or coagulated blood. The lower or exterior end of the organ is tight and firm, whereas it would seem that the upper two-thirds of the canal are frequently found dilated to a size sufficient to contain a very large pippin, or an orange. He has found it similarly dilated in the mere case of menorrhagia, and has so often had occasion to find the parts in this state, that he has little doubt of its being as frequently observed by other practitioners, and it is important to dwell upon it for the purpose of indicating the necessity there is, in such instances, of employing, if at all employed, a sufficiently large tampon. A tampon, consisting of a single piece of sponge, is, in the translator's opinion, inefficient, inasmuch as a sponge of sufficient dimensions to fill up this great dilatation, cannot readily be introduced through the os externum. Hence the tampon that he invariably prefers consists of portions of linen torn into squares of three or four inches, of which the pieces are successively introduced until the cavity is quite filled. Such a tampon very rarely fails to suppress the hæmorrhage of an early or embryonal abortion.—*Meigs' Translation of M. Colombat on the Diseases of Females.*

Original Communications.

ON THE

LIQUEFACTION AND SOLIDIFICATION OF BODIES GENERALLY EXISTING AS GASES.

By MICHAEL FARADAY, Esq. D.C.L.
F.R.S. &c. &c.

[Continued from p. 544.]

Nitrous oxide.—This substance was obtained *solid* by the temperature of the carbonic acid bath *in vacuo*, and appeared as a beautiful clear crystalline colourless body. The temperature required for this effect must have been very nearly the lowest, perhaps about 150° below 0° . The pressure of the vapour rising from the solid nitrous oxide was less than one atmosphere.

Hence it was concluded that liquid nitrous oxide could not freeze itself by evaporation at one atmosphere, as carbonic acid does; and this was found to be true, for when a tube containing much liquid was freely opened, so as to allow evaporation down to one atmosphere, the liquid boiled and cooled itself, but remained a liquid. The cold produced by the evaporation was very great, and this was shown by putting the part of the tube containing the liquid nitrous oxide, into a cold bath of carbonic acid, for the latter was like a hot bath to the former, and instantly made it boil rapidly.

I kept this substance for some weeks in a tube closed by stop-cocks and cemented caps. In that time there was no action on the bitumen of the graduated tube, nor on the cement of the caps; these bodies remained perfectly unaltered.

Hence it is probable that this substance may be used in certain cases, instead of carbonic acid, to produce degrees of cold far below those which the latter body can supply. Down to a certain temperature, that of its solidification, it would not even require ether to give contact, and below that temperature it could easily be used mingled with ether; its vapour would do no harm to an air-pump, and there is no doubt that the substance placed *in vacuo* would require a temperature lower than any as yet known, perhaps

as far below the carbonic acid bath *in vacuo* as that is below the same bath in air.

This substance, like olefiant gas, gave very uncertain results at different times as to the pressure of its vapour; results which can only be accounted for by supposing that there are two different bodies present, soluble in each other, but differing in the elasticity of their vapour. Four different portions gave, at the same temperature, namely, -106° Fahr., the following great differences in pressure, 1.66; 4.4; 5.0; and 6.3 atmospheres; and this after the elastic atmosphere left in the tubes at the conclusion of the condensation had been allowed to escape, and been replaced by a portion of the respective liquids which then rose in vapour. The following Table gives certain results with a portion of liquid which exerted a pressure of six atmospheres at -106° Fahr.

Fahr.	Atmospheres.	Atmospheres.
— 40	. . 10.20	
— 35	. . 10.95	
— 30	. . 11.80	
— 25	. . 12.75	
— 20	. . 13.80	
— 15	. . 14.95	
— 10	. . 16.20	
— 5	. . 17.55	
0	. . 19.05	. . 24.40
5	. . 20.70	. . 26.08
10	. . 22.50	. . 27.84
15	. . 24.45	. . 29.68
20	. . 26.55	. . 31.62
25	. . 28.85	. . 33.66
30		. . 35.82
35		. . 38.10

The second column expresses the pressures given as the fluid was raised from low to higher temperatures. The third column shows the pressures given the next day with the same tube after it had attained to and continued at the atmospheric temperature for some hours. There is a difference of four or five atmospheres between the two, showing that in the first instance the previous low temperature had caused the solution of a more volatile part in the less volatile and liquid portion, and that the prolonged application of a higher temperature during the night had gradually raised it again in vapour. This result occurred again and again with the same specimen*.

* This substance is one of those which I liquefied in 1823 (see Philosophical Transac-

Cyanogen.—This substance becomes a solid transparent crystalline body, as Bunsen has already stated*, which raised to the temperature of -30° Fahr. then liquefies. The solid and liquid appear to be nearly of the same specific gravity, but the solid is perhaps the denser of the two.

The mixed solid and liquid substance yields a vapour of rather less pressure than one atmosphere. In accordance with this result, if the liquid be exposed to the air, it does not freeze itself as carbonic acid does.

The liquid tends to distil over and condense on the cap cement and bitumen of the gauge, but only slightly. When cyanogen is made from cyanide of mercury sealed up hermetically in a glass tube, the cyanogen distils back and condenses in the paracyanic residue of the distillation, but the pressure of the vapour at common temperatures is still as great, or very nearly so, as if the cyanogen were in a clean separate liquid state.

A measured portion of liquid cyanogen was allowed to escape and expand into gas. In this way one volume of liquid at the temperature of 63° Fahr. gave 393.9 volumes of gas at the same temperature and barometric pressure of 30.2 inches. If 100 cubic inches of the gas be admitted to weigh 55.5 grains, then a cubic inch of the liquid would weigh 218.6 grains. This gives its specific gravity as 0.866. When first condensed I estimated it as nearly 0.9.

Cyanogen is a substance which yielded on different occasions results of vaporous tension differing much from each other, though the substance appeared always to be pure. The following are numbers in which I place some confidence, the pressures being in atmospheres of 30 inches of mercury, and the marked results experimental†.

Fahr.	Atmospheres.
0	1.25
8.5	1.5
10	1.53
15	1.72
20	1.89

tions). Since writing the above, I perceive that M. Natterer has condensed it into the liquid state by the use of pumps only (see *Comptes Rendus*, 1844, 18th Nov. p. 1111), and obtained the liquid in considerable quantities. The non-solidification of it by exposure to the air perfectly accords with my own results.

* Bibliothèque Universelle, 1839, xxiii. p. 184.

† See Bunsen's results, Bibliothèque Universelle, 1839, xxiii. p. 135.

22.8	2.00
27	2.20
32	2.37
34.5	2.50
38.5	2.72
44.5	3.00
48	3.17
50	3.28
52	3.36
54.3	3.50
63	4.00
70	4.50
74	4.79
77	5.00
79	5.16
83	5.50
88.3	6.00
93.5	6.50
95	6.64
98.4	7.00
103	7.50

Ammonia.—This body may be obtained as a *solid*, white, translucent, crystalline substance, melting at the temperature of 103° below 0° ; at which point the solid substance is heavier than the liquid. In that state the pressure of its vapour must be very small.

Liquid ammonia at 60° was allowed to expand into ammoniacal gas at the same temperature; one volume of the liquid gave 1009.8 volumes of the gas, the barometer being at the pressure of 30.2 inches. If 100 cubic inches of ammoniacal gas be allowed to weigh 18.28 grains, it will give 184.6 grains as the weight of a cubic inch of liquid ammonia at 60° . Hence its specific gravity at that temperature will be 0.731. In the old experiments I found by another kind of process that its specific gravity was 0.76 at 50° .

The following is a table of the pressure of ammonia vapour, the marked results, as before, being those obtained by experiment:—

Fahr.	Atmospheres.
0	2.48
0.5	2.50
9.3	3.00
18	3.50
21	3.72
25.8	4.00
26	4.04
32	4.44
33	4.50
39.5	5.00
41	5.10
44	5.36
45	5.45
45.8	5.50

49	.	.	.	5.83
51.4	.	.	.	6.00
52	.	.	.	6.10
55	.	.	.	6.38
56.5	.	.	.	6.50
60	.	.	.	6.90
61.3	.	.	.	7.00
65.6	.	.	.	7.50
67	.	.	.	7.63
69.4	.	.	.	8.00
73	.	.	.	8.50
76.8	.	.	.	9.00
80	.	.	.	9.50
83	.	.	.	10.00
85	.	.	.	10.30

Arseniuretted Hydrogen.—This body, liquefied by Dumas and Soubeiran, did not solidify at the lowest temperature to which I could submit it, *i. e.* not at 166° below 0° Fahr. In the following table of the elasticity of its vapour the marked results are experimental, and the others interpolated:—

Fahr.	Atmospheres.
75	0.94
70	1.08
64	1.26
60	1.40
52	1.73
50	1.80
40	2.28
36	2.50
30	2.84
23	3.32
20	3.51
10	4.30
5	4.74
0	5.21
3	5.56
10	6.24
20	7.39
30	8.66
32	8.95
40	10.05
50	11.56
60	13.19

The following bodies would not freeze at the very low temperature of the carbonic acid bath *in vacuo* (—166° Fahr.):—Chlorine, ether, alcohol, sulphuret of carbon, caoutchoucine, camphine or rectified oil of turpentine. The alcohol, caoutchoucine, and camphine, lost fluidity and thickened somewhat at —106°, and still more at the lower temperature of —166°. *The alcohol then poured from side to side like an oil.*

Dry yellow fluid nitrous acid, when cooled below 0°, loses the greater part of its colour, and then fuses into a white,

crystalline, brittle, and but slightly translucent substance, which fuses a little above 0° Fahr. The green and probably hydrated acid required a much lower temperature for its solidification, and then became a pale bluish solid. There were then evidently two bodies, the dry acid, which froze out first, and then the hydrate, which requires at least —30° below 0° before it will solidify.

The following gases showed no signs of liquefaction when cooled by the carbonic acid bath *in vacuo*, even at the pressures expressed:—

	Atmospheres.
Hydrogen at	27
Oxygen at	27
Nitrogen at	50
Nitric oxide at	50
Carbonic oxide at	40
Coal gas	32

The difference in the facility of leakage was one reason of the difference in the pressure applied. I found it impossible, from this cause, to raise the pressure of hydrogen higher than twenty-seven atmospheres by an apparatus that was quite tight enough to confine nitrogen up to double that pressure.

M. Cagniard de la Tour has shown that at a certain temperature, a liquid, under sufficient pressure, becomes clear transparent vapour or gas, having the same bulk as the liquid. At this temperature, or one a little higher, it is not likely that any increase of pressure, except perhaps one exceedingly great, would convert the gas into a liquid. Now the temperature of 166° below 0°, low as it is, is probably *above* this point of temperature for hydrogen, and perhaps for nitrogen and oxygen, and then no compression without the conjoint application of a degree of cold below that we have as yet obtained, can be expected to take from them their gaseous state. Further, as ether assumes this state before the pressure of its vapour has acquired thirty-eight atmospheres, it is more than probable that gases which can resist the pressure of from twenty-seven to fifty atmospheres at a temperature of 166° below 0° could never appear as liquids, or be made to lose their gaseous state at common temperatures. They may probably be brought into the state of very condensed gases, but not liquefied.

Some very interesting experiments on

the compression of gases have been made by M. G. Aimé*, in which oxygen, olefiant, nitric oxide, carbonic oxide, fluosilicon, hydrogen, and nitrogen gases were submitted to pressures, rising up to 220 atmospheres in the case of the two last; but this was in the depths of the sea, where the results under pressure could not be examined. Several of them were diminished in bulk in a ratio far greater than the pressure put upon them; but both M. Cagniard de la Tour and M. Thilorier have shown that this is often the case whilst the substance retains the gaseous form. It is possible that olefiant gas and fluosilicon may have liquefied down below, but they have not yet been seen in the liquid state except in my own experiments, and in them not at temperatures above 40° Fahr. The results with oxygen are so unsteady and contradictory as to cause doubt in regard to those obtained with the other gases by the same process.

Thus, though as yet I have not condensed oxygen, hydrogen, or nitrogen, the original objects of my pursuit, I have added six substances, usually gaseous, to the list of those that could previously be shown in the liquid state, and have reduced seven, including ammonia, nitrous oxide, and sulphuretted hydrogen, into the solid form. And though the numbers expressing tension of vapour cannot (because of the difficulties respecting the use of thermometers and the apparatus generally) be considered as exact, I am in hopes they will assist in developing some general law governing the vaporization of all bodies, and also in illustrating the physical state of gaseous bodies as they are represented to us under ordinary temperature and pressure.

Royal Institution, Nov. 15, 1844.

OVARIAN TUMORS RARELY COMMENCE AFTER THE CESSATION OF THE MENSES.

I HAVE never seen ovarian tumor commence after the cessation of the menses; and though such a case may have happened, it appears highly probable that the disease is intimately connected with the menstrual function, which, by the alternate excitement and repose of the vesicular development, exposes it evidently to the danger of inflammation, acute or chronic, with all its consequences in the depravation of its texture.—*Dr. Meigs.*

CINICAL MIDWIFERY.

THE HISTORIES OF EIGHT CASES OF UTERINE HÆMORRHAGE FROM PLACENTAL PRESENTATION.

By ROBERT LEE, M.D. F.R.S.

THE fifth report in my work entitled *Clinical Midwifery*, contains the histories of thirty-five cases of placental presentation. The following report contains eight additional cases, being the total number that have come under my observation since the publication of that work in 1842.

CASE XXXVI.—On the 15th October, 1842, I saw in consultation a case of uterine hæmorrhage in the eighth month of pregnancy, where the placenta was adhering all round to the neck of the uterus. The discharge of blood had taken place at intervals for two or three weeks. The os uteri was not much dilated, but it was soft and yielding, and I resolved to deliver without delay by turning: the hand was passed up without difficulty into the uterus, the membranes were ruptured, and the child extracted dead. The placenta soon followed, the hæmorrhage ceased, and the patient quickly recovered.

CASE XXXVII.—On the 24th Feb. 1843, Mr. Hawkins requested me to see a patient residing at No. 23 Goodge Street, Middlesex Hospital. She was in the seventh month of pregnancy, and had been suffering from profuse uterine hæmorrhage for three weeks. The os uteri was open to the size of a crown piece. Immediate delivery being necessary, I passed the hand into the vagina, and endeavoured to introduce it into the uterus to turn the child, but the resistance was so great that I could not succeed without the danger of inflicting an injury upon the parts. I resolved to attempt the delivery with the fore and middle finger passed between the placenta and uterus, and with these I ruptured the membranes, seized a foot, and speedily extracted the child, without having been able to pass the whole hand into the uterus. There was no pulsation in the funis, but in a few minutes the child began to breathe and cry. The placenta was expelled soon after, and the hæmorrhage entirely ceased, and the

* *Annales de Clinique*, 1843, viii. 275.

patient recovered as favourably as if it had been a natural labour.

CASE XXXVIII.—On the 11th July, 1843, Mr. Tucker requested me to see a patient of the Newman Street Lying-in Institution, with profuse hæmorrhage in the eighth month of pregnancy. It was a case of partial placental presentation. The membranes were ruptured, the liquor amnii discharged, ergot of rye administered, and the child and placenta were both expelled without further assistance, and the mother recovered.

CASE XXXIX.—On the 30th December, 1843, I was called by Mr. French, Surgeon, to the St. James's Parochial Infirmary, to see a patient in the Lying-in Ward, who was eight months pregnant, and had been suffering for two weeks from profuse flooding. A great quantity of blood had been lost. Mr. French had attempted to deliver by turning, but the rigid state of the os uteri rendered it impossible to introduce the hand. I felt the edge of the placenta, and as turning was impracticable, I ruptured the membranes and discharged the liquor amnii. Labour pains did not follow, and the hæmorrhage continued undiminished. It being obvious that death would soon take place if the delivery was not very speedily effected, and as there was no alternative, I employed the perforator and crotchet. The placenta soon followed the extraction of the child, the flooding ceased, and the patient got well.

CASE XL.—On the 25th March, 1843, I was called by Mr. Skegg, of St. Martin's Place, to a lady who was eight months pregnant, and who had been suffering from flooding for three weeks. The os uteri was open to the extent of a crown piece, but it was thick and rigid. A large portion of placenta was felt through the os uteri; the membranes had been ruptured, and the liquor amnii had escaped. The os uteri was gently dilated, the binder applied, and stimulants given, but the pains became more and more feeble, and at last entirely ceased, while the hæmorrhage continued to increase to an alarming extent. The operation of turning was impracticable, and the child was ascertained from the funis to be dead. The perforator was passed up between the uterus and detached portion of placenta, and the head of the child

opened and extracted, but with much difficulty. The placenta followed the child, the flooding entirely ceased, and the recovery was rapid and complete.

CASE XLI.—On the 26th May, 1844, Mr. Angus, of Greek Street, requested me to see a patient, æt. 41, residing in Carnaby Street, with uterine hæmorrhage in the eighth month, from placental presentation. For several days the discharge was moderate, but slight pains coming on, and dilatation of the os uteri taking place, an immense gush of blood suddenly occurred, and immediate delivery became necessary. I felt the edge of the placenta behind, covering about the half of the cervix uteri. I ruptured the membranes and discharged the liquor amnii, but pains did not follow, and the hæmorrhage continued. The os uteri was neither sufficiently dilated nor dilatable to allow the hand to be introduced to turn the child. The head was opened, and the child extracted through the rigid os uteri with difficulty. The placenta was soon expelled, and the discharge ceased. The patient recovered most favourably. It will be observed that in all these cases the rigidity of the os uteri, and not the presence of the placenta, was the cause of the difficulty.

CASE XLII.—At 8 P.M. April 3d, 1845, I received a note from Mr. Duffin, of Langham Place, requesting me to go immediately to his assistance in the country. "I think," he said, "I have a case of placenta presentation." I went, and found the case to be as he had stated, and one in which the placenta was adhering all round to the cervix uteri. The lady was eight months pregnant; there had been hæmorrhage, but not very alarming, for three weeks, and then suddenly, without any external cause, the blood flowed in large quantities. The os uteri was found but little dilated, and very rigid. A mass of placenta was felt adhering all round. A large sponge was introduced, and pressed up firmly against the os uteri. The hæmorrhage ceased during the night, but at three o'clock in the morning of the 4th, slight labour pains were experienced, and the blood came away in great gushes from the vagina. The sponge was removed, and Mr. Duffin, on examining, found the os uteri thick

and rigid, and only dilated to the extent of half-a-crown. On passing the finger through the os uteri the whole cervix was felt covered with placenta. The blood continued to flow profusely, and there being great faintness, it was considered necessary to attempt to empty the uterus, as the only means of saving her life. After employing all the force which he considered justifiable, and for a sufficient period to introduce the hand without success, Mr. Duffin withdrew it, believing it to be impossible to turn the child, without certain injury to the uterus. He resolved to re-introduce the sponge, and attempt by this means to control the discharge till delivery should become possible. On examining I found the os uteri in a condition which left no hope of effecting the delivery by passing the whole hand into the uterus, but recollecting that in similar cases of rigid os uteri I had succeeded in bringing down a foot with the fore and middle fingers, where the whole hand could not be introduced, I attempted to grasp a foot in this manner, and succeeded after a few efforts. The trunk and head of the child were drawn down, the placenta soon followed, and the flooding entirely ceased. In six hours the patient had recovered from the immediate effects of the loss of blood, and the shock of the labour, and no bad symptoms followed. The child was dead. The portion of placenta which had been detached when the hæmorrhage first occurred was covered with a thin but dark clot of blood, and the whole cavernous or cellular structure of the part was filled up with coagulated blood. The condition of the detached portion of placenta rendered it certain that for some time before delivery no maternal or foetal blood could have circulated through this part of the placenta, and that the hæmorrhage in this case had proceeded from the exposed arteries and veins in the uterus. In every case where a portion of the placenta has been for some time detached from the uterus, I have seen it in the same condition, proving that the flow of blood had not proceeded from the placenta, but from the vessels of the uterus.

CASE XLIII.—On the 23d of Jan. 1842, Mr. Kell, of Bridge Street, Westminster, requested me to see in consultation with him, and the late Dr. Hin-

geston, a patient, who was in the seventh month of her first pregnancy, and whose pelvis was greatly distorted by rickets. I perforated the membranes, and on the 27th the os uteri was considerably dilated, and the nates were felt presenting. After extracting the body of the child, the head was drawn through the brim of the pelvis with great difficulty by the crotchet.

On the 2d of December, 1844, when the same patient was in the fifth month of her second pregnancy, I induced premature labour by the same means, and the fœtus, and its appendages, were expelled by the natural efforts, and she recovered most favourably. She again became pregnant, and miscarried about the end of the second month on the 18th of March last.

Mr. Kell requested me to see the same patient with him on the 24th August 1845, she being again five months advanced in pregnancy. I had no difficulty in reaching the os uteri, and passing the point of the stiletted catheter within it and through the cervix, but some force was required to make the instrument enter completely within the uterus, and when this was effected, and the stilet pressed forward in the usual manner, blood escaped instead of the liquor amnii. A profuse hæmorrhage took place on the 25th, without any sign of labour. On the 26th it ceased, and I found the os uteri beginning to dilate; the finger was introduced as high as possible, and no part of the ovum could be felt, although we inferred that the placenta was situated over the cervix uteri, and that it had been perforated and partially detached by the point of the instrument. We resolved, if the hæmorrhage returned, to introduce a large sponge into the vagina, and press it up against the os uteri, and to check the discharge by the employment of all the other means in our power. A slight oozing of blood continued during the 27th, without faintness; labour pains commenced on the morning of the 28th, and three hours after, when Mr. Kell saw the patient, he found the whole placenta in the vagina which he removed with the fœtus and a mass of coagulated blood which lay between them. The patient has recovered without an unfavourable symptom. There was no reason in this case to suspect, and no means to determine, that the

placenta adhered to the neck of the uterus before the instrument was introduced and the hæmorrhage took place. It was fortunate we did not ascertain the fact that the placenta was adhering to the neck of the uterus,

for a knowledge of it might have deterred us altogether from attempting to induce premature labour, which probably would have been fatal to the patient.

A Tabular View of Eight Cases of Placental Presentation.

No.	Complete or Partial.	Treatment.	Child.	Mother.
36	Complete	Turning	Dead	Recovered
37	Complete	Turning	Alive	Recovered
38	Partial	Membranes ruptured		Recovered
39	Partial	Craniotomy	Dead	Recovered
40	Partial	Do.	Dead	Recovered
41	Partial	Do.	Do.	Recovered
42	Complete	Turning	Do.	Recovered
43	Uncertain	Perforation of Placenta	Do.	Recovered

In the treatment of the forty-three cases of placental presentation contained in this and the previous report, it will be seen that I have not departed from the practice adopted in similar cases by the most distinguished practitioners in midwifery from the days of Ambrose Paré to the present time. Guillemeau, Mauriceau, Portal, Levret, Giffard, Smellie, Rœderer, William Hunter, Denman, and all the most eminent accoucheurs of the present century, have recommended delivery by turning the infant, in cases of placental presentation, where the orifice of the uterus is in a condition to allow the hand to be introduced without the employment of much force. It does not appear that any of these great practical accoucheurs attempted in a single instance to tear away or detach the placenta from the neck of the uterus, when it was so undilatable as to render it impossible to pass the hand to turn the child and deliver, nor in any other condition whatever of the part, before the birth of the child; and none, I am firmly convinced, but the most rash and inexperienced, would have recourse to a plan of treatment which offers no advantage to the mother, and would be followed by the certain destruction of the child. When the placenta is wholly separated and expelled from the uterus, it can then be of no further use either to the mother or child, and ought to be removed.

The Statistical Tables which have recently been published by Dr. J. Y. Simpson, for the purpose of proving the propriety of detaching the pla-

centa from the neck of the uterus, and extracting it before the child, however imposing in appearance, furnish no evidence to justify any practitioner in departing from the rule which has been established in the treatment of cases of placental presentation during the last two hundred years.

The following is the first of these Tables:—

Table of Maternal Mortality in Placental Presentations.

Reporters.	No. of Cases.	Mothers lost.
Mauriceau	17	3
Giffard	24	7
Smellie	17	3
Rigby	42	12
Clarke and Collins . . .	15	3
Busch	13	2
Schweighauser	64	16
Lachapelle	16	10
J. Ramsbotham	19	8
F. Ramsbotham	44	8
Lever	14	2
Lee	38	14
Wilson	26	10
London Maternity Charity	50	33
Total	399	134

There are several great inaccuracies in this table; but it will suffice at present to point out the last, relating to the mortality in the Royal Maternity Charity, which the following letters from Dr. F. H. Ramsbotham do so completely.

"My dear sir,—In answer to your note received last evening, in which you say that in a table of cases of placental presentation published by Dr.

Simpson, he has stated that 44 were observed by me, and that, of these, 8 proved fatal; that 50 also occurred in the Royal Maternity Charity, of which 33 proved fatal; I must observe, that Dr. Simpson has fallen into an error in transcribing the results of my practice in this particular. From the tables which I have for many years kept of the cases that have occurred in my district only of the Royal Maternity, as published in an Appendix to the second edition of my work on Obstetric Medicine, you will find that there were 50 cases of placental presentation between the 1st of Jan. 1828, and the last day of December, 1843; and that out of these cases 32 children were still-born. I see I have not noticed the number of women that died under these circumstances; but I have stated, that out of the 126 *deaths from puerperal causes*, that happened during that period, 56 were either immediately or remotely the consequence of hæmorrhage. Dr. Simpson has, then, it seems, mistaken the number of still-born children in the 50 cases for the number of deaths among the mothers, and by an error of the press, most likely, 33 was printed instead of 32. In regard to the other 44 cases, the particulars of them will be found in a note at p. 498 of the first, and p. 395 of the second edition of my book. They were cases of *partial* placental presentation, which I saw between the years 1823 and 1834—indeed all the cases of that kind that came under my *personal* observation in that interval. Some of these cases were afforded by the practice of the Maternity Charity, and therefore included in the other 50; all that occurred between January 1823 and January 1828 were observed in private practice, as well as many of those between 1828 and 1834. The object I had in view in giving the summary I did of these 44 cases, was to show the advantage of rupturing the membranes in this kind of case, as well as in accidental hæmorrhage, instead of proceeding to deliver at once by turning. To ascertain the number of deaths in the 50 cases of the Charity, above alluded to, I shall be obliged to go carefully over my tables, or the reports founded upon them, which I have from time to time published in the MEDICAL GAZETTE, but I will do this, and let you have the result in three or

four days. I have not seen Dr. Simpson's tables in Cormack's Journal; I am therefore in entire ignorance as to the form in which they are made up, or the particulars they embrace.—I am, my dear sir,

“Very faithfully yours,
“FRANCIS H. RAMSBOTHAM.

“14, New Broad Street,
Sept. 6th, 1845.

“Dr. Lee.”

“My dear sir,—I have this morning looked over my reports of the placental presentations that occurred in the practice of my district of the Royal Maternity Charity from the beginning of the year 1828 to the end of the year 1843—the total, 35,743 deliveries; and I find that out of the 50 cases, 15 of the women died; 18 of these were partial presentations. I look upon this as a greater average than we meet with in general practice: because these poor creatures have all the ills attendant on poverty in its worst forms, with, in many cases, a shattered constitution, to contend against; besides that, as the women are delivered by midwives, except when extraordinary assistance is required, I presume more time is lost between the last attack of hæmorrhage and the delivery, than would be the case were a well-informed obstetrical surgeon in attendance, who could deliver on the instant.

“I am, faithfully yours,
“F. H. RAMSBOTHAM.

“14, New Broad Street,
Sept. 8th, 1845.

“Dr. Lee.”

It must be wholly unnecessary for me to point out the absolute necessity and paramount importance of observing the most rigid accuracy, the most scrupulous regard to truth, in forming Statistical Tables, from which it is proposed to adduce proofs in support of an attempt to subvert the established rules of practice in the treatment of cases of such vital importance, and substitute another mode of treatment which is of the most dangerous character, fraught with inevitable destruction to the child, and attended with no benefit to, if not actually increasing the danger of, the mother.

Dr. Simpson's views are founded on the singular and obvious fallacy, that, because in a certain number of cases,

and these the most favourable for the ordinary treatment, in which the placenta came away spontaneously before the child, and the women recovered, the same good result should take place after the still organically adhering placenta has been torn away. This tearing away of the placenta was performed two hundred years ago by an ignorant and audacious impostor, on a lady who died in Paris, whose case is related, with denunciations of the practice, by Guillemeau.

ILLUSTRATIONS OF THE
INTEREST AND IMPORTANCE OF
THE STUDY OF CASES OF SUDDEN
OR VIOLENT DEATH.

By ALEXANDER HARVEY, M.D. Ed.

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Marischal College and University, Aberdeen.

[Continued from page 806.]

I. CASES of sudden death, and the effects on the vital parts and organs of violent injuries, are interesting and important on their own account, and with a view to the means of obviating the fatal issue of the changes in which they consist.

To see a fellow-creature, just previously in the rudest health, suddenly struck down by a violent blow, or a stroke of lightning; or sink, and remain immersed in deep water; or overwhelmed by a bank of earth, or sand; or suffering from the effects of a deadly poison; or burnt or scalded over the whole or the greater part of the body; or lying in the snow; or weltering in his own blood—this gushing from a wound; or hanging suspended by the neck;—the individual in any of these possible and not uncommon cases being still *alive*, but either struggling for his life, perhaps convulsed, or motionless, faint, insensible, livid, or pale, cold, and nearly pulseless,—this is a sight which, while it appals and dismays us, never fails to create in us a deep interest in behalf of the sufferer, and to call forth our most active endeavours for his rescue.

But, great as is the interest which, by the constitution of our nature, attaches to cases of this kind, their practical importance is still greater. For the fearful urgency of the danger, the rapidity with which death advances,

the necessity for meeting the danger promptly and at the same time judiciously,—all conspire to demand of us a thorough knowledge of their real nature, and of the means the best adapted to obviate a fatal result. Here a false step may be irretrievable: a right one too long delayed unavailing. Doubtless, many of these cases are inevitably fatal, “are such as no practice will save,” but some of them may be recovered from, and in every case we ought to be fully prepared to do that, be it little or much, which the circumstances of it require.

And yet, I apprehend, it not unfrequently happens that they are very improperly treated. Persons suffering from a severe concussion of the brain, lying insensible, and nearly pulseless, with perhaps only a few feeble strokes of the heart between them and death, have been bled from the arm, and had their death thereby hastened,—or, however, have had their veins opened, and death only not hastened because no blood flowed! Nothing, indeed, is more remarkable than the indiscriminating eagerness with which, in cases of “sudden seizure,” bloodletting is often resorted to by medical men, and, still more, with which its adoption is always urged upon the practitioner in attendance by the ignorant spectators. And it requires not a little moral courage, in these cases, to resist the popular prejudice in favour of the remedy. Again, the artificial respiration has been dispensed with by some, in cases of suspended animation from drowning, as unnecessary or injurious,* although it may, I think, be confidently asserted that all other measures, however important or indispensable as auxiliaries, are not to be put in comparison with it†. It is no doubt true that individuals have been restored without that expedient, and that in many instances where it has been used it has completely failed; but these facts surely do not warrant the conclusion (which is strongly opposed by other facts, and by theoretical considerations) that the artificial respiration judiciously employed ought in any case to be dispensed with, or regarded

* For references, see Taylor's Manual of Medical Jurisprudence, pp. 507-8.

† Carpenter, Lib. of Pract. Medicine, (art. Asphyxia) Vol. iii. p. 230. Alison, Outlines of Path. and Pract. of Medicine, p. 30.

as operating injuriously*. Once more, it cannot be doubted that lives which might have been saved have been lost, in cases of narcotic poisoning, by trusting too exclusively to the stomach-pump, and other expedients, and too little to the efficacy of keeping the patient's sensibility roused by every possible means, or, failing this, of the artificial respiration. Unfortunately, it too often happens in these cases that the circulation is so enfeebled at the same time that the sensibility is impaired or abolished that the measure last alluded to must prove unavailing. Still, the experiments of Sir B. Brodie†, the recovery of one case of apparent death from opium in the human subject, by Mr. Whately‡, shew generally the value of the artificial respiration in cases of narcotic poisoning, and give us reason to expect that it may be successful in some such which would otherwise terminate fatally.

The fearful urgency, I repeat, of this class of cases, and the promptitude and judgment with which the danger attending them must be met, and the frequency of their occurrence, demand for them a very serious study at the hands of the profession. And yet it may be asked, whether many teachers in our medical schools make them an integral, not to say a prominent, part of their course of instructions?

II. These cases are interesting and important, also, in relation to the civil and criminal jurisprudence of the country.

On this department of the subject I deem it unnecessary to make any remarks, because it is sufficiently attended to, and well understood. I would only observe that, while it is chiefly from works on medical jurisprudence that the greater part of students and practitioners have heretofore derived their scientific knowledge of this class of cases, the subject is not always there

treated of, in a physiological point of view, with the precision and accuracy which is so desirable, and certainly not in such a way as to supersede the necessity for information regarding it being sought for elsewhere, and for its being prosecuted both for its own sake, and the important uses to which its principles may be applied in the study and practice of medicine.

III. Farther, the study of these cases is interesting and important in relation to pathology and practical medicine, serving to give us clear and distinct ideas, not otherwise attainable, in regard to the leading phenomena and general nature of diseases,—their more intimate or essential nature,—the modes in which they prove dangerous, or fatal to life,—and the agency of their remote, or external causes. Here there is a wide field for remark and illustration.

The cases in question, occurring in individuals previously in perfect health, can scarcely be said to be examples of *disease*. At least, if they are to be so regarded, they are instances of the simplest and least complex kinds of it; for the changes intervening between the application of the external cause, and the fatal event which rapidly follows, must necessarily be *few* in number and *simple* in their character. The changes, too, in which this event is more immediately dependent, are easily discriminated. The symptoms, also, accompanying the internal changes are equally simple, intelligible, and for the most part characteristic. And the relation subsisting between the external causes and the effects which follow on the vital organs has nothing "occult" in it, but is direct and palpable, and open to every one's observation. Thus, one has a large blood-vessel wounded; the blood gushes out in torrents; in a few seconds he becomes giddy pale, and faint, perhaps he sickens and vomits. The nervous system has sustained a shock by the large and sudden loss of blood; the shock reacts on the heart, enfeebling its action; and the state of one or other of these organs are the symptoms enumerated owing. The bleeding continues, and within a few seconds more, the sensibility fails altogether, and the pulse becomes imperceptible. The syncope is complete; the heart's action is suspended, the circulation through the brain

* An experiment of Bichat illustrates admirably the efficacy of the artificial respiration in cases of this kind. "If a stop-cock be adapted to the trachea, exposed and divided, and afterwards it be shut, the blood becomes darker, and springs for a short time with its usual force" from a divided artery, "but at length the jet becomes gradually feebler. Re-admit the air, the blood becomes almost immediately red, its saltus also rapidly increases." *Sur la Vie, &c.* p. 222:—quoted from Dr. Kay's paper, in *Edin. Med. and Surg. Journal*, Vol. xxix. p. 41-2.

† *Philosophical Transactions*, 1812.

‡ *Medical Observations and Inquiries*, Vol. vi. p. 331.

arrested; and if the irritability of the former is extinct, the syncope is fatal.—Another is struck a violent blow on the epigastrium; he instantly turns pale, falls down insensible, the pulse is imperceptible, and he expires. Here, again, is an instance, simpler even than the former, of a shock being given to the nervous system, and of this reacting on the heart, suspending its action, and destroying its vital power.

In the examples now given of death from hæmorrhage, and from a blow on the stomach, how short is the series of changes between the first and the last, how simple their character, how obvious their relation to their respective causes, and how clearly referrible the fatal issue of both to the failure of the heart's action!

It is widely different, however, with most diseases. Arising, often, from unperceived causes, and often terminating fatally in modes that are complex or obscure, they extend over a longer period of time, consist of a longer series of changes, involve various functions, and shew themselves by symptoms which vary with their progress, and are modified by the circumstances of individuals.* Amid such a multiplicity and complexity of changes, it is difficult to discriminate between the essential and the incidental, to trace the connection between causes and their effects, and to acquire clear notions of the real nature of the phenomena that are prescribed to our observation. Take, as an example, common continued fever. In this disease, all the functions are more or less engaged, and the morbid phenomena very numerous—varying with the progress of the fever, variously modified too by contingent circumstances, and complicated besides, in many cases, with local inflammation.

This being the case, it is easy to understand that we should often be unable, from the observation of diseases themselves, to form a correct judgment of the nature of many diseases which come before us. But this difficulty may often be greatly obviated or entirely removed by a careful study of the effects of violent and rapidly fatal injuries. "These simplest cases in pathology" furnish us with facts and principles, (or "analogies and illus-

trations,") which admit of an easy and direct application to morbid processes and morbid phenomena; and thus they shed a clear and steady light on the more complex and obscure cases of disease—illuminating, so to speak, these special objects of pathological research much in the same way that the mirror does the objects subjected to microscopical examination.

"When we complain," to quote the words of an able writer, "of many of the phenomena of disease being *inexplicable*, we are too apt to forget that *nothing in nature is explicable*, except in so far as it admits of *comparison* with things that are *simpler* and *more familiar*." Now the things simpler and more familiar with which morbid phenomena may be compared, and by a comparison with which they may be explained, are very few. The known principles of chemistry and of mechanics are of no avail in elucidating their nature. Those of physiology, indeed, enable us to go a certain way in our explanation of them, "by informing us what functions of the living body are disordered, in what manner they are altered, and how their alteration affects other functions," but it would be easy to shew "that there are many facts in regard to the operation of external causes on the human body, and the modes of diseased action assumed by its different organs, which could not possibly be cleared up to us by any knowledge we possess of the healthy actions of the system." "But the effects of known agents, particularly of poisons and injuries, on the animal economy, are phenomena bearing a very close analogy to those which occur from unknown or imperfectly understood causes in disease; and when the former are successfully arranged and generalized, they will afford more assistance than all other means put together, in explaining the more complicated changes which give rise to the latter."*

To point out their utility in this respect will be the object of the succeeding papers.

[To be continued.]

* Alison, *Outlines of Pathology and Pract. of Medicine*.—*History of Medicine*.—Edin. Med. and Surgical Journal. Vol. xxvi. p. 319.

PRACTICAL OBSERVATIONS
ON THE
VARIOUS FORMS OF DYSPEPSIA.

BY ROBERT DICK, M.D.

Author of a Treatise on the "Derangements, Primary and Reflex, of the Organs of Digestion, with an Addition," "Treatise on Diet," &c.

[Continued from p. 718.]

IN my last paper it was stated that Schultz had found the bile, when fresh, *always* alkaline in its reaction, one drachm of acetic acid being necessary, as he alleges, to neutralize an ounce of bile of considerable spissitude. Dr. Kemp and Buisson have more recently made observations tending to throw doubts on the accuracy of Schultz's view; they affirm that healthy bile is *always neutral*. As Dr. Prout observes, the colour of bile makes it difficult to judge of its chemical reaction, from its effect on test paper. There is, of course, a possibility that bile, like the saliva, varies in its chemical properties, being alkaline at some times, or in some circumstances, and neutral on other occasions; but if so, then either the observations of Schultz, or those of Buisson and Dr. Kemp, have been made inaccurately, or on too few occasions to justify them in coming to the unqualified conclusion that the bile is *always* one thing, or *always* another.

I stated, in my last paper, that I considered the computation that a man secretes from 17 to 24 ounces of bile, as excessive. There are two cases, the one of which was treated by Mr. Fryer, of Stamford, the other by Mr. Barlow, of Writtle, which supply some data on this subject. The former was that of a boy, thirteen years of age, who had an abscess of the liver, opening externally, from which, at different tapplings, bile, apparently pure, was discharged in quantities that might make an average of a pint a day. In Mr. Barlow's case, the quantity discharged seems to have been somewhat, but not much less. The subject of this case was a strong man of 54 years of age, a Thatcher by trade, and healthy at the time he met with the accident which caused the suspected rupture of the liver. There is one point of no small importance to be taken into consideration in connection with both of these cases, and which forbids us to regard the quanti-

ties of bile discharged as normal, namely, that both the man and the boy were under the influence of mercury at the time the bile was drawn off. It is therefore probable that the quantity of bile was greater than it would have been had no mercury been administered. But, on the other hand, it is to be taken into account, that both the subjects of observation being under the shock of accident and of disease, of depleting treatment and of restricted diet, the secretion of the liver might, but for the stimulus of the mercury, have been less profuse than it would have been in circumstances of health.

In my last paper, I suggested a doubt whether the alleged fact, that the bile is entirely re-crementitious, is to be received in its full extent. That the bile is not wholly absorbed, is proved by the colour of the fæces, in health on the one hand, and during jaundice on the other. But it is contended that it is *only* the colouring matter of the bile that appears in the evacuations, and that the other constituents of it are entirely digested. Berzelius alleges, that in 1000 parts of fæces there are only 9 parts resembling bile. Liebig makes the quantity of bile one-fiftieth part of the fæces, or even less. On the supposition, however, of this constant distinction and separation, during assimilation, of the colouring matter from the other principles of the bile, and of the former being the whole excrementitious part, we might expect that *occasionally* there should occur jaundice *without* pale stools. It may further be remarked, as regards the alleged fact that only 9 parts of *pure* bile appear in 1000 of fæces, that it is most probable that the bile undergoes, in the process of chylicification, and in the passage along the intestines of the excrementitious part of the food, some change that may make its recognition, and the estimate of its amount in the evacuations, a matter of some nicety and difficulty.

Pancreatic Derangements.

In regard to pancreatic derangements, and their treatment, scarcely anything can be satisfactorily laid down. As irritation may be propagated from the stomach and duodenum, up the biliary ducts, to the interior of the liver, so may it equally extend along the pancreatic duct, into the organ from which that duct is named.

And, on the other hand, irritation in the pancreas, descending its duct, may spread itself along the mucous membrane of the duodenum, and thence into the stomach.

Andral is of opinion that pyrosis may sometimes be owing to derangement of the pancreas.

As, from our ignorance of the physiology of the pancreas, we are unable to know when the organ acts normally, we are equally unable to discover when it fails in its function. Hence the great obscurity and vagueness of its pathology.

Its position enhances the difficulty of diagnosis. In fact, there is not a single pathognomonic symptom of a deranged or diseased pancreas. Its affections may most readily be confounded with those of the pyloric end of the stomach, of the duodenum, of the left lobe of the liver, of the colon, of the kidney. And even could we pronounce definitively, that the pancreas is the seat of disease, what, I would ask, is the specific treatment which it is incumbent on us to pursue?

I am aware of none, except in giving attention to the stomach, liver, and bowels, so far as we might suspect them to be sympathetically deranged.

I have already noticed, that we are wholly ignorant of the physiology of the pancreas. As usual, and as on almost all other subjects, physiologists differ among themselves in regard to the chemical reaction of the pancreatic fluid. Magendie and Mayer find it alkaline, and so do Leuret and Lassaigne, in the cat, the dog, and the horse. Tiedemann and Gmelin find it acid in the sheep and goat; in the first quantities extracted from the dog and horse, it was likewise acid; the last portions of the fluid were slightly alkaline. Schultz found it acid in the dog, cat, and horse, and on one occasion neutral, in a dog. Such, it may be remarked in passing, is a specimen of many of the recent investigations of physiologists. They find subjects doubtful; they leave them full of perplexing discrepancy; shewing that either great inaccuracy, or culpable haste in announcing results, is chargeable somewhere; and the only consolation is, that many of these inquiries concern matters so frivolous, and so totally devoid of any practical use or interest, that the time wasted and the

errors committed are less to be regretted.

In certain cases, in which *post-mortem* inspection discovered disease of the pancreas, the symptoms during life were as follows: vomiting, in some cases of a limpid, hot, acrid fluid; in others, of a fluid like saliva, and like it containing mucus, which is not naturally present in the pancreatic secretion. In the case of a patient of Andral's, there were copious vomitings every morning of mucous and "watery" matters. Smoking then stopped the vomiting, but about a pint more of the same fluid was passively ejected. Pain was felt deep in the epigastrium, which brandy relieved. The man died; but it is merely generally stated that the pancreas was diseased.

In another case, the vomitings were of a "spumous acrid liquor," the ejection of which was accompanied with a lively feeling of heat from the cardia to the mouth. The vomitings occasionally ceased spontaneously, and were replaced by an abundant salivation, acrid and even caustic; the gums were tumid and softened; the teeth were loose and corroded, as if the pungent saliva were dissolving them layer after layer. The father of this patient had had, at twenty, similar symptoms; but they had disappeared at fifty.

In addition to the mucous diarrhoea and vomitings, above described, which, of course, as being common to many affections, only very equivocally indicate pancreatic disease, there have been observed deep-seated epigastric pain, augmented by the fingers being plunged into the upper part of the abdomen when the stomach is empty; increased also by the patient's lying on his back when the stomach is loaded; and likewise by reclination on the left side, for then the liver, as in the former ease the stomach, rests on the inflamed pancreas. Deep inspiration has also been noticed to cause pain, in consequence of the shortened fibres of the diaphragm bridling, as it were, over the diseased viscus. Such are almost the only symptoms we have to guide us to a knowledge of the affections of the pancreas.

As I have already remarked, there is no specific treatment; the organ lies too deep for local measures. From the rarity with which reference is made to it in *post-mortem* inspections, we may

infer that it is less frequently the subject of disease than the other chylipoietic organs; and probably the greater part of its derangements is propagated from the stomach, liver, or duodenum. In one case, which I chanced to see several years ago, the pancreas was greatly enlarged, and, having pushed aside the bowels, was adherent to the spine and aorta.

Affections of the Spleen.

Of the physiology of this organ also we possess no knowledge in the least degree certain or precise, and hence our pathological and therapeutical views are equally vague. Differently from diseased lungs, heart, kidney, the derangements of which are indicated not merely by the general or universal symptoms of pain and swelling, but by the aberration of functions peculiar to themselves, namely, changes in the pulse and circulation, in the chemical constitution of the urine, and in the respiratory and thoracic sounds objective and subjective—differently from affections of these organs, I repeat, those of the spleen are only discoverable by the presence of pain and swelling, to which, perhaps, may in some cases be added, heat and change of colour in the superjacent teguments.

There is reason to believe that inflammatory action may make considerable progress in the spleen without pain being felt, unless the peritoneal coat of the organ has become implicated.

In some cases of diseased spleen, which have come under my notice, the splenic affection was confounded with dyspeptic derangement, and, in fact, such derangement was present; it being indeed obvious, that affections of an organ in such topical proximity and vascular intimacy with the stomach as the spleen is, could not have place without more or less disturbing the action of the former.

In other cases I have known affections, which subsequently there could be little doubt were splenic, confounded for some time with disease of the thoracic pleura, and even with a supposed insidious chronic pericarditis.

Treatment.—Tenderness, or pain and fulness of this organ, require leeching, blistering, moxa, frictions with mercury, iodine, &c.; attention to the stomach; residence on a dry site, and

amid a dry air. In the tumefactions of the organ which accompany some forms of intermittent fever, quinine and iodine form the most efficient means. If induration have taken place, mercurial and iodine plasters, or else assiduous friction, and the internal use of iodine, must be had recourse to.

A medical friend, of large experience in East Indian practice, informs me that the Hindoo practitioners treat the enlarged spleen of ague, as well as ague itself, with sulphate of iron and jalap, to which columba is sometimes added, and that the effect is very satisfactory. The dose of sulphate of iron is extremely small, being usually not more than a grain three times a day. The native practitioners (and I believe the British also in that quarter), make use of the moxa in the treatment of splenitis; the former resorting to it largely. It is not likely that so revolting a measure would be so often prescribed or endured, were its good effects not obvious and unquestionable.

Since the preceding part of this paper was in type, the three following cases have come under my notice.

A gentleman has for some time suffered from pain in the stomach, and from a feeling of tightness in the left calf. His epigastrium is extremely tender to pressure. His tongue is clean, but his conjunctivæ yellow, and his skin slightly so. His stools are very dark. Sulphuric acid causes first a very slight green hue in his urine, which subsequently changes to a faint reddish purple. The specific gravity of the urine is 1022; very slight irregularity of diet, more especially the use of claret, causes, singularly enough, a deposition of the phosphates; still the discharge when voided, and for some hours after, reddens litmus.

The second case is that of an individual, who, though only 27 years of age, has long used food in excess, though he has not indulged in drink. His urine is of the specific gravity 1005 only. In other respects it is healthy. The mucous membrane of the stomach is in an extremely irritable state; his liver is enlarged and chronically irritated, and secretes profusely.

The third case is that of a young man of 28, who has had an acute attack of rheumatism, complicated with gouty symptoms. He has also been an irre-

gular liver, and this as regards drink as well as food. What the state of the urine was at the outset of the disease, I cannot say. Since I have seen him, it has been of sp. gr. 1016, pale, neutral when voided, and slightly charged with the phosphates, which, in this case, I regard as the result of a permanent derangement and failure of the assimilative powers.

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[To be continued.]

SIGNOR GUARINI ON THE MOTIONS OF THE IRIS*.

Translated, with Observations,

BY JOHN F. FRANCE,

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Hospital.

ARE the motions of the iris the result of the contraction of muscular fibres; or the effect of vascular turgescence, a kind of erection of the tissue of the membrane? Signor Guarini, without rejecting either of these explanations, endeavours to reconcile them: the iris is, according to him, a membrane at once vascular and muscular; and he believes it impossible, by mere vascular erethism, to account for the extreme rapidity of its movements. An erectile organ requires a certain time to attain erection, and does not reach that state with the lightning-quick-ness which characterizes the action of the pupil; motions so instantaneous can only take place through the play of muscular fibres. Again, organs formed of erectile tissue can readily undergo the various gradations between flaccidity and turgescence; but we do not see them pass immediately from one extreme to the other, then return abruptly to their former condition, to reassume not less quickly the second: but the pupil does exhibit all these variations. Thirdly, with erectile organs the state of repose, is that of relaxation; but, on the contrary, the passive state, the repose of the pupil, is an extension midway between dilatation and contraction; and lastly, the condition of medium extension is that in which we find the pupil of the dead subject, whilst erectile organs are left by death in complete flaccidity. Signor Guarini, however, does not on these

accounts deny the share taken in production of the pupillary movements by turgescence of the iridal vessels; only, in his opinion, the latter exerts but a secondary and accessory influence which he explains in the following manner:—

All the erectile organs of the economy are environed with muscles or contractile fibres, the contraction of which, by pressure on the veins, of which these organs are principally composed, produces a momentary stasis of the blood within them, without compressing them so strongly as to impede the entry of arterial blood. The vessels of the iris being interlaced with the circular fibres which effect contraction of the pupil, these fibres cannot act without arresting the blood in the vessels; a stagnation which contributes to augment contraction. Signor Guarini then admits the two orders of circular and radiating fibres in the structure of the iris, the former to diminish, the latter to dilate the pupil; and describes, that the circular receive their motive power from filaments of the third pair, which emerge from the ophthalmic ganglion; whereas the radiating fibres are supplied by minute branches, which, arising from the superior pair of cervico-spinal nerves, enter the first cervical ganglion of the sympathetic, and, subsequently united with the sixth pair, pass into the orbit.

The following experiments tend to establish this particular distribution. If, as Professor Valentin has shown, we divide the third pair of nerves in a living animal, the pupil dilates; if we remove the first ganglion of the great sympathetic, it contracts. Now, Signor Guarini having observed that in animals killed with strychnine the pupil is dilated, conceived he could make use of this fact to determine the nervous sources of the different iridal movements: so, having extirpated an animal's superior cervical ganglion, and thus produced contraction of the pupil, he administered strychnine. The pupil of the side operated on only dilated a little, for the filaments of the third nerve, now unopposed, maintained its contraction; but the pupil was seen enormously dilated on the other side, as ordinarily occurs in poisoning with strychnine. Again: if, on a body still irritable, we prick the third nerve, or

* From the Gazette Médicale de Paris, 1845.

the ophthalmic ganglion, the pupil slowly contracts, and does not afterwards dilate; but if we lay bare the superior cervical ganglion while the animal is alive, then kill it, and irritate the third pair, we shall still observe contraction of the pupil, which will now, however, disappear on irritating the cervical ganglion. "This," says the author, "proves incontestibly the existence of muscular fibres in the iris; for muscular tissue alone has the property of contracting after death under the influence of mechanical or chemical irritation. I defy those who admit vascular erethism only as the cause of the motions of the pupil, to produce erection of the penis or clitoris in the dead subject by those means which so unequivocally determine the movements of the iris."

In conclusion, according to Signor Guarini, contraction of the pupil depends not only on the action of the circular fibres, but also on the stasis of the blood within the veins of the iris produced by that muscular action. The reality of the influence of this supplementary cause is placed beyond doubt⁽²⁾ by the following fact:—In essaying by the strongest stimulation of the third pair in a body yet irritable, to produce contraction of the pupil, one can never succeed in rendering it as circumscribed as in the living; for the circulation having ceased, the blood is not confined in the vessels so as to impart, as during life, the utmost degree of narrowness to that aperture. It appears that the dilatation of the pupil, on the contrary, takes place as the effect entirely of contraction of the radiating fibres; since the enlargement we obtain in the subject by irritating the superior cervical ganglion is quite as considerable as that which ensues on the application of belladonna to the living.

REMARKS.—Should the experiments of Valentin and Guarini be confirmed by independent observers, with uniformity of effect in a sufficient number of instances, they will, in conjunction with the results of Mayo's* experiments, and the pathological fact now ascertained, that loss of contractility of pupil follows paralysis of the third cerebral nerve, though the retina be

sound, and with the concurring arguments adducible from habit and analogy, — constitute an overpowering weight of rational testimony in favour of the muscularity of the iris. This, taken in connection with the microscopical observations of Home, Maunoir, Tyrrell, and many others, must be considered more convincing than the negative arguments of those who urge the opposite view, (especially if we consider how few pale organic fibrils, easily overlooked, would amply fulfil the function in question), and establishes satisfactorily, to my own mind at least, that the pupillary actions are indeed truly and essentially muscular. The author's endeavour to prove that venous erection is superadded to circulo-muscular contraction, as at once its effect and consummation, appears to me singularly unfortunate; for even if we admit the anatomical relation of vessel to muscular fibre, which he assumes, the hypothesis will be found inadequate to explain what it professes to do. The circular fibres are only supposed to exist at the immediate margin of the pupil, and the flow of venous blood in the iris is necessarily, in general direction, centrifugal; hence, if Signor Guarini's notion were correct, erection by venous obstruction would arise from a mechanical impediment situate at the distal side of the obstructed part, which is impossible. That arterial congestion should result from this mechanism is not, however, unlikely; yet either idea derives but little countenance from the inconclusive reasoning with which the author supports his own: for, 1st. equally vigorous contraction of pupil could not be expected in the dead as in the living body; and 2ndly, though dilatation is reported to have been disproportionately great, yet the standard of comparison (the effect produced by belladonna in the living) is too variable to allow a legitimate inference to be founded on the observation as thus recorded: the actual and positive degree of dilatation should have been specified.

Valentin's investigations of this subject, referred to by the author, are of course worthy of the highest consideration: he fully confirms the truth of the conclusions arrived at by Mayo, with respect to the powers of the 3d cerebral nerve over the contractions of

* See Mayo's Anatomical and Physiological Commentaries, No. 2, page 5.

the pupil; but he advances further, and claims, as we have already seen, but as the subsequent extracts will more satisfactorily show, an active dilating influence for nervous fibrils, originally emerging from the superior cervico-spinal nerves, and after intimate connection with the superior cervical ganglion of the sympathetic, and that of the vagus, reaching ultimately the ganglion ciliare and iris, by means of the carotid plexus or branches of the 5th. With regard to the former topic, he says, (p. 18.) "*Eodem tempore, quo nervus oculo-motorius perscinditur, pupilla oculi affecti, et sæpe ea alterius sani, vehementissime contrahitur. Mors operationem si insequitur, pupilla per agoniam aliquantum quidem dilatatur, nec vero pristinam suam magnitudinem nanciscitur. Si autem animal vivere continuat, pupilla serius dilatatur, sed paralytica remanet. Lucis solis radii, vitro amplificanti collecti et in oculum sive retinam sive iridem ducti nullam pupillæ mutationem efficiunt: sanus vero oculus solito more reagit. . . Mechanicâ vel chemicâ nervi oculo-motorii irritatione factâ, (in the dead subject and with the nerve exposed) ejusdem lateris oculi pupilla minuitur, et, quamvis, brevi post iterum denuo augeatur, tamen pristinam suam, solitamque magnitudinem per longissimum demum tempus, aut nunquam sibi parat.*"

After detailing various experiments, he draws the following conclusions (p. 3): — "*Pupillæ amplificatio non solum tanta sit, quanta omnibus fibris muscularibus iridis paralyticis est; sed eo major, quo, magis fontis spinalis musculi pupillam augentes, agunt. E contrario, fonte spinali irritato, pupilla aliquantum augetur; eo vero persecto fons cerebrialis antagonismo caret, ut hac de causâ pupilla summo pere minuat. . . . Fonte spinali resecto pupilla minuitur et minuta restat nec luce mutatur. . . . Pupillæ contractorem nervi fonte cerebriali, extensorum fonte spinali continentur*.*"

I apprehend the following case as an example of the phenomena ordinarily ensuing upon paralysis of the third cerebral nerve: similar circumstances are not infrequent; and they afford the strongest possible corroboration of Mayo's conclusions; while they in no

degree militate against the more extended and bolder theory of Valentin:

Ellen M——, æt. 25, applied to me July 21st, and stated, that nearly three months ago she was seized with headache, giddiness, tinnitus aurium, and insensibility, preceded for a fortnight by some pain across the eye-brows. The fit continued for about half an hour, and appears to have been of an apoplectic character, for on recovering from it, the left superior palpebra could not be perfectly elevated; in a week from the attack, during which this symptom gradually increased in degree, the power of raising the lid was completely lost, and it has not since been restored. A month ago she was again seized with pain in the head, and a few days subsequently her confinement took place: she lost a considerable quantity of blood at this period, owing to which, in addition to repeated venesection at the time of her first attack and since, together with leeching and reiterated blistering, her present condition is highly anæmial and debilitated. Ptosis on the left side is complete, though the upper lid can be just separated from the lower by wrinkling the forehead, and so bringing into action the occipito-frontal muscle: on raising the palpebra with the finger the globe of the eye is seen abducted, its axis making an angle of between 20° and 30° with the natural line of direction in regarding an object straight forward: it cannot be brought nearer to the central line, be the other eye ever so much abducted; but is capable of increased abduction when the opposite organ is strongly adducted; and on this effort being discontinued it gradually returns to its former position. The motions of elevation and of depression are abolished, the axis of the left eye-ball remaining horizontal however much the right may be directed upwards or downwards. The pupil of the affected eye is widely dilated, having a diameter more than double that of the right pupil; and exposure to strong light produces no change in it: the sight, however, of the affected eye is good, with the exception that the vision of small and near objects is slightly impaired: for this, the extreme dilatation of the pupil sufficiently accounts. The right eye and its appendages are perfectly healthy; but of course double vision exists when both eyes

* De functionibus nervorum.

are simultaneously employed on any object not situate toward the left hand of the patient. The sensation of the conjunctiva and of the skin surrounding the orbit is perfect.

The next case is one of those anomalous examples of paralysis of the third cerebral nerve in which the contractile power of the pupil is not abrogated; I relate it here for the sake of contrast with the foregoing:—but it must be borne in mind, that it exhibits the exception—the former case illustrates the general rule.—George D., æt. 12, who had suffered from hydrocephalus in infancy, and has a somewhat disproportionately large head, applied at the Eye Infirmary, February 7th. He is subject to frequent headache, particularly just over the left supercilium, and sometimes at the corresponding point on the opposite side:—he has been much disturbed at night by frightful dreams, causing him to wake and scream violently; and when most troubled with headache, frequently as often as two or three times a week, has had sickness and vomiting, apparently unconnected with errors in diet: his general appearance is indicative of debility; he is sallow and pallid; but in manner intelligent and lively. Nine days before application he was attacked with headache and vomiting, which lasted, together with frequent twitching of the left eyelid, for a couple of days, when the lid dropped, and he became unable to elevate it without the assistance of the hand. On his application, ptosis was complete, but he could slightly raise the lid on wrinkling the brow by the action of the occipitofrontalis. Abduction of the affected eye was well performed; the eye then slowly returning towards, but not quite reaching the centre; but adduction, elevation, and depression, more especially the two latter, were lost. The pupil, examined separately, was active, but inclined to remain rather more dilated in the dusk, than the opposite pupil; the sight of either eye is good: but when both are employed, double vision results, unless the object be held to the temporal side of the left eye, so as to permit the axes to correspond. It is needless to detail the progress of the case: I put the boy under mercurial action, so as to redden the gums; and this combined with repeated blis-

tering produced a gradual cure, the lad being discharged with restored power over the globe and palpebra on the 24th of the succeeding month.

It is right to mention that in neither of these cases, the former of which is still under treatment, was there evidence of loss of function of any other nerve than the motor oculi. In the latter, the adductor did not appear so powerless as the levator and depressor muscles, and as all the muscles supplied by the third nerve in the former case were: and perhaps the true solution of the problem, why, in some instances, paralysis of this nerve is unattended with notable alteration in the condition of the pupil, may really lie simply in the fact, that paralysis is not in such cases, as it would appear not to have been in this—total.

RETROVERSION OF THE UTERUS.

WOMEN under retroversion do certainly feel much pain in the groins and pubis from the strain on the ligamenta rotunda. I am very sure that a person in whom these ligaments are still in a healthful and natural state of tone will be extremely unlikely to have a retroverted womb; and that, where the accident has happened, it will be only necessary to give a slight help towards the reposition to make the ligaments draw the fundus upwards and forwards again, and retain it *in situ naturali* when once reposit. —*Dr. Meigs.*

CITRATE OF IRON AND DISULPHATE OF QUININE IN CHLOROSIS AND OTHER ANÆMIC STATES.

I HAVE made most advantageous use of a citrate of iron conjoined with sulphate of quina, as in the following formula, which I subjoin as a very convenient and successful one in the disorders dependent upon anæmia:—

Take of Citrate of Iron 2 drachms; Sulphate of Quina $\frac{1}{2}$ drachm; Water 1 fluid ounce.

Mix, and direct from 20 to 30 drops for the dose, in syrup and water. Agreeably to M. Raciborski's method, I advise the patient to take the draught after each meal, within half an hour of the breakfast, dinner, or supper, so that it may be carried with the chyme along the course of the bowels. The addition of the quina to the ounce of water renders the citrate and the sulphate perfectly soluble, as does also the addition of a few drops of ammonia to a solution of the citrate alone; without some addition, a part of the citrate of iron is not dissolved.—*lb.*

NECROSIS OF TIBIA, &c.; AMPUTATION ABOVE THE KNEE;—RECOVERY.

By T. BOURNE, Esq.
Surgeon, Bath.

MARK CHIVORS, aged 25, of strumous diathesis, and by occupation an engineer, states, that about 13 years ago he was injured in the left leg by a person throwing a pair of tongs at him, which struck the part just above the inner ankle. He was attended by a surgeon for twelve months; three months after the injury small portions of bone came away, and at different times forty pieces were thrown off. He consulted a surgeon in Bath about seven years ago, who advised strapping and bandages.

In November last I was sent for, when I found the limb much inflamed and swelled (being twice its natural size). He was suffering great pain, and had a good deal of febrile excitement. I recommended leeches, lotions, and other antiphlogistic means, which afforded some relief, but the leg remained enlarged, and suppuration took place; small abscesses formed in different parts, and discharged large quantities of pus. I passed a probe down to the bone occasionally, but could not detect any loose portions. I now advised a nourishing regimen, and wine, porter, and broths, were given. He took morphia at bed-time, and a tonic mixture in the day. The former was continued for some time, but the latter was soon given up, as he declined going on with it. In January his health was greatly impaired; he had cough, with much muco-purulent expectoration; a weak and quick pulse; night sweats, and was greatly emaciated.

Mr. Gane, Surgeon, of Frome, was kind enough to see the case, and his prognosis, as well as my own, was very unfavourable. He recommended some incisions to be made along the tibia, and rags, wetted with cold water, to be applied; and he agreed with me as to supporting the patient's strength with tonic medicine, and a generous diet. He visited Chivors a second time, but still thought badly of the case. This was in February. After this time I did not see Chivors very often, as I thought nothing more could be done

for him. In May, to my great surprise, his health was somewhat improved, and I then told him, if he continued to acquire strength, I might probably be enabled ere long to remove the limb, which he heard with great satisfaction. In July I considered him able to bear the operation, and on the 9th I amputated the leg above the knee, with flap incisions. The stump healed very kindly, and he is now quite convalescent.

REMARKS.—Chivors' case presents some very interesting features. The time that elapsed between the receipt of the injury and the operation—his occupation, which required him to stand many hours in a heated apartment, probably tending to keep up disease in the leg—his apparently hopeless condition in the winter—and lastly, the state of the limb, which, upon dissection, evinced great and extensive disease. There was necrosis of the shaft of the tibia, which was greatly enlarged, and presented a honey-combed appearance, with numerous projections of spicula of bone. The upper part of the fibula was diseased, and there was a considerable collection of pus in the knee-joint, and ankylosis of the patella.

CASE IN WHICH BOTH KIDNEYS WERE PLACED ON THE SAME SIDE OF THE SPINAL COLUMN.

By JOHN REID, M.D.

WHEN in charge of the dissecting rooms in Old Surgeons' Hall, Edinburgh, I found that in one of the bodies which was being dissected by the students, the kidney was wanting on the left, and that there were two kidneys on the other side. The one was placed below the other, and the lower end of the upper one, and the upper end of the under one, were fused together. The renal artery supplying the upper kidney was given off by the aorta, near its usual origin; the one supplying the lower kidney arose from the aorta near its division into the two primitive iliacs. The ureter from the lower kidney passed across the mesial line, after entering the pelvis, so that these two tubes entered the bladder in the usual manner. The preparation is now in my collection. A case where the kidneys presented exactly the same appearance is described and figured by Dr. John Hunter, in the third Volume of the Medical Transactions of the College of Physicians in London, p. 250. 1785.—*Monthly Journ. of Medical Sciences*, Sept. 1845.

MEDICAL GAZETTE.

FRIDAY, SEPTEMBER 19, 1845.

In the remarks recently made on Coroners' inquests* we endeavoured to show, 1. That it was only by a forced interpretation of the words of a statute, passed nearly six hundred years ago, that inquests were pertinaciously held in cases of sudden death, when this was obviously dependent on natural causes: 2. That these inquisitions, while they were not necessary in a judicial view, entirely failed of their purpose in relation to medical police, and the registration of the causes of death: for we have it on the best authority, that, in the large majority of cases, no cause whatever is assigned! In the course of our remarks, we took occasion to quote the opinion of a good legal authority,—that in order to justify the holding of an inquest in any case, there should be *good reasonable ground of suspicion* that the party came by his death by *violent and unnatural means*. We can understand that there may be some latitude of interpretation with respect to the signification of these words; and that when a coroner has not received a medical education,—when he is wholly unacquainted with the causes of death, or the marked characteristics which distinguish violent from natural death, whether sudden or slow, he is very liable to be imposed upon, and to believe that strong grounds of suspicion exist, where in the judgment of a well-informed professional man there would be none. Hence, it is not very surprising that *legal* coroners should hold inquests, or order exhumations, unnecessarily: this is a penalty which society must pay for appointing to an office by popular

election, a man who may be wholly unacquainted with the most common principles of medicine.

In ordering the exhumation of the body of the late General Dick, the coroner is reported to have said that he was acting not merely upon the request of the son of the deceased, but upon some solemn informations which he had seen; and that supposing it to have been caused by certain kinds of poison, there was a remote possibility that death from violence might be proved.

According to the medical evidence, given at the inquest, decomposition had not much advanced; the lungs and heart were shrunk, the former still crepitant. There was no appearance of disease in these viscera. The brain was shrunk and reduced to a pulpy mass; still its anatomical parts admitted of demonstration;—no disease could be detected; there was no effusion of blood, and the serum found in the ventricles was rather less than what would be found in a healthy brain. Death was not caused by sanguineous apoplexy: whether it was caused by serous apoplexy, might be matter of opinion: there was no serous effusion. The medical witness did not feel himself in a position to say, whether death might or might not have resulted from serous apoplexy. We are further informed, with regard to the abdominal viscera, that the stomach presented great vascularity at its larger end, extending up the œsophagus or gullet. The mucous membrane was entire, but soft. In the duodenum, there was a large patch of inflammation having the appearance of extravasated blood, deeply tinged of a bright yellow colour, which had infiltrated through the membranes, and presented the same appearance externally. On the internal surface this patch was circumscribed by the inflamed intestine; there were marks of inflammation at the junction of the duodenum with the jejunum, and for several inches there was “great inflammatory action” at the union of the jejunum with the ileum. The viscera and their contents were chemically examined, but no poison was found. The yellow substance

turned out to be the colouring matter of bile. It was admitted that some poisons, such as prussic acid or morphia, could not have been found under the circumstances. The medical witness, when again questioned respecting the cause of death, stated, according to the report before us:—"that he found *sufficient morbid appearances* in the stomach and bowels to cause death, but not as suddenly as had been described, unless accompanied by a shock to the nervous system." He admitted that the appearances might have arisen from some idiopathic disease, as from the application of some irritant. No medical man could say positively that they had been caused by an irritant, unless he knew that an irritant had been applied. The witness finally stated that there was no disease of any note except the inflammation of the mucous membrane of the stomach and bowels, and he thought that there was sufficient to cause death. A physician who was called to the deceased on the morning of his death, stated that he found him dead on his arrival. From the inquiry which he made at the time, he and another physician came to the conclusion, that the deceased had died from serous apoplexy, and gave a certificate to that effect. The jury returned a verdict, "that the deceased had died from *inflammation of the stomach and bowels*, but how produced, there is no evidence to show."

The remarks which we are about to make do not apply to the individuals who took part in these strange proceedings, so much as to the system which confers upon them a kind of legal authority. We do not know whether the coroner be a member of the medical or legal profession; but we feel confident, that had he been properly acquainted with the common principles of Medical Jurisprudence, he would have either not allowed an exhumation to take place, or he would have declined receiving a verdict, for which there was not the slightest medical foundation. That all coroners are not so facile in these matters, is proved by a case reported at p. 327 of this volume, where there was some-

thing like the *corpus delicti* made evident; and we cannot help thinking that the functionary in the Bath case, allowed "the earnest request" of a relative, contrary as it appears to us to all medical probability of the cause of death, to get the better of his judgment. What additional information he may have had, we cannot pretend to determine: but the proceedings clearly prove, that, to say the least, he must have been grossly misinformed.

I. Regarding the exhumation, there was *primâ facie* evidence that the death was natural. A respectable physician was called in by a relative of the deceased; he made "a lengthened inquiry" into the symptoms, and with a colleague came to the conclusion, that death was due to serous apoplexy. Although the detailed history of the symptoms given in the report is imperfect, we learn that there were drowsiness, giddiness, and nausea, and that death took place very suddenly. It is pretty certain that had any irritant poison been administered, the fact would have come out either by the protracted illness of the deceased, or by some incongruous description of symptoms on the part of the non-professional persons around him.* The coroner suggested that with a proper discretion, an inquest ought to have been held: but for reasons already assigned we do not agree with him;—the public are not so enamoured of inquests as to require them to be held on their deceased relatives, when the inquiry appears to be quite unnecessary.

The case would have been different had no medical man been called, or had there been any good medical grounds to suspect that death was not due to

* The whole duration of the illness could not have exceeded *three hours*. There were no signs of irritation, or any symptoms to indicate disorder of the alimentary canal. Fifteen minutes before the deceased was found by his servant in the act of dying, he had given a rational answer on the announcement of a visitor.—*Provincial Medical Journal*, Sept. 3d, 1845.

the cause assigned by the two physicians who were summoned, and who immediately made an inquiry into the circumstances. If there were no good reason for holding an inquest at the time of death, we are at a loss to understand why the exhumation was ordered *seventeen months* afterwards. The object of an inquest is not to remove the suspicions of any relative of the deceased, which the slightest acquaintance with the medical facts may prove to be unreasonable; and yet we can here discover no other ground for the inquiry.

Admitting that the individual had died from poison, it must from the circumstances, have been of a narcotic nature. The exhumation of a body *seventeen months* after death, could in such a case throw no light upon the cause of death; for the post-mortem appearances would prove nothing, and none of the poison would be found. The evidence of the physician called in at the death must, we think, satisfy every unprejudiced mind, that no irritant could have been taken by the deceased; and yet this was the only kind of poison which could possibly be detected in the body so long after death. In either case, therefore, the exhumation was, medically speaking, entirely unnecessary; and with a certificate of the cause of death—"serous apoplexy"—in his hands, the coroner, it appears to us, should have declined listening to the "earnest request" of a party who could only have a knowledge of the facts from mere hearsay!

The verdict, we think, must not a little astonish those who are at all acquainted with the pseudo-morbid appearances met with in the dead after lengthened interment. 1. It is inferred by the medical witness that sanguineous apoplexy was not the cause of death, because no effusion of blood was found! The reason assigned involves

two assumptions, which must at once destroy the inference: 1. Persons may die of apoplexy without sanguineous effusion being found even on a *recent* inspection*. 2. Effusion might have taken place sufficient to cause death, and not be evident in a brain reduced to "a soft pulpy mass" after seventeen months' interment. Again, because there was "no serous effusion," but rather less serum found in the ventricles than is commonly met with in a healthy brain, it is strongly implied that this, which was entered in the certificate, was not the cause of death. This opinion was probably intended as negative evidence, to favour the suspicion of death from poison. Our readers will at once perceive that it wholly fails of its object; for the individual may have died from apoplexy, either sanguineous or serous, and the appearances have been as described by the witnesses. All who have been in the habit of making post-mortem examinations at lengthened periods after death, must be well aware that there is a limit, beyond which these appearances will cease to furnish safe evidence either negative or affirmative; and we think our readers will agree with us, that it would be a startling medico-legal novelty for a witness to be able to swear, *seventeen months* after death, from the mere inspection of the brain, that the deceased had not died from apoplexy!

We are further informed, that the greater end of the stomach and parts of the small intestines were in a state of *inflammation*, which might have arisen from disease, or from "some irritant applied to them;" and that these morbid appearances, with the superaddition of a nervous shock, to meet the difficulty of the sudden death

* The case of the late Professor Daniell is an instance of this kind, among many others which will be found reported in pathological works.

(a qualification which the jury would hardly comprehend), were sufficient to cause death! This opinion evidently induced them to declare in their verdict, that the deceased had died from inflammation of the stomach and bowels,—thus going contrary to the medical certificate, and throwing a kind of imputation upon those relatives of the deceased who manifested “the indiscretion” of not calling for an inquest in the first instance!

The question naturally arises—Was there any inflammation in the alimentary canal, or was there simply that redness of the coats of the viscera which is so often found as a post-mortem change? We are inclined to adopt the latter view: the “vascularity” at the larger end of the stomach is almost always met with on these occasions in the bodies of those who have died from natural causes, when the inspection has not taken place for some months. Occasionally, this is obviously due to transudation by contact with the spleen; in other instances, to the gravitation of the blood; the last condition explains its frequent occurrence in the intestines. Those who have had much experience in such subjects may possibly be able, even after *seventeen months*, where no antiseptic has been used, to distinguish inflammatory redness from these post-mortem changes; but we have certainly met with no case where so positive an opinion on so difficult a question has been before given on more slender medical grounds. The most experienced are liable to make mistakes on this subject, for an opportunity seldom occurs of examining the bodies of persons who have been long dead; and if a man possess no knowledge whatever of the changes which take place in the healthy dead body, how is he justified in assigning to violent causes, either directly or by implication, those changes

which he, perhaps for the first time, sees in a body so long after death? The authority of two eminent observers bears us out in saying, that an opinion thus strongly expressed, without a shadow of proof that any irritant had been given, reflects but little credit on medical evidence; and the manner in which it was received by the coroner and jury, show how easily they may be misled on subjects which they do not understand*. A cause of death has been assigned upon what we believe to be an entire mistake as to the origin of certain appearances in the body. Such a medical opinion could not have stood the test of a skilful cross-examination. If the witness had been asked by a clever counsel, on a trial for murder, whether he had ever before inspected a body seventeen months after death? whether redness of the alimentary canal was an infallible sign of inflammation? what were the diagnostic marks to distinguish inflammatory redness from that due to post-mortem changes?—it is, we think, evident that he must either have abandoned his opinion, or have shown by his answers that it was entirely unfitted to be the basis of a solemn verdict on the cause

* Les faits qui précèdent nous permettent de répondre à la question, que nous avons posée plus haut, que *les diverses teintes rouges, brune, violacée, ardoisée, et noire peuvent être confondues avec les colorations qui se développent après la mort!*—Orfila, *Traité des Exhumations Juridiques*, tome ii. 248.

Again, Andral says on this subject: Examinez de nouveau ces mêmes organes à des époques de plus en plus éloignées de celle où l'animal a succombé, et peu à peu vous trouverez que le sang s'accumule en certains points, ou il n'y en avait pas plus que dans d'autres à l'instant de la mort, ou peu de temps après la mort: peu à peu, vous verrez des parties blanches rougir, des vaisseaux se dessiner là où l'on n'en observait pas auparavant: vous verrez se développer, soit des injections, des arborisations vasculaires, soit une coloration rouge, uniforme, disposées par taches isolées, par longues bandes, par larges plaques: vous verrez le sang sortir de ses vaisseaux, former autour d'eux des épanchemens plus ou moins étendus, ou bien imbibér les tissus environnans et les teindre en se combinant avec eux, &c.—*Précis d'Anatomie Pathologique*, i. 60. See also Dr. Yelloly's *Observations on Redness of the Mucous Membrane*, vol. xvii. of this journal p. 308.

of death! What we desire to know is, why persons should be appointed to the office of coroner who are unable to detect mistakes of this description. The jury are deceived, and they are allowed to return a verdict unsupported by correct medical doctrines, and casting an unmerited stigma upon a respectable family!

Since the above was written, we have seen, in the *Provincial Medical Journal*, a short report of this case by Dr. Blackmore. Dr. Blackmore thinks that apoplexy was not the cause of death; but his reasons for this opinion do not appear to us to be satisfactory. After all, the difference is, perhaps, more verbal than real. What Dr. B. calls syncopal "leipothymia" most persons, in common parlance, would call apoplexy. We think the experienced physicians who saw the deceased are likely to have formed a more correct judgment, as they made an inquiry into circumstances then recent. Dr. Blackmore also appears to attach more importance to the redness of the alimentary canal than we think an inspection of a body, after seventeen months' interment, will fairly justify.

MICROSCOPICAL CONVERSION OF VEGETABLE TISSUE INTO STARCH.

THE following microscopic experiment on the transformation of vegetable matter, is pointed out by M. Payen; it is founded on the facts of iodine forming a deep blue compound with starch, and of sulphuric acid possessing the power of transforming vegetable cellular tissue into starch. A portion of vegetable cellular tissue is placed beneath the microscope, and moistened with an aqueous solution of iodine; a drop of concentrated sulphuric acid is then to be applied,—the membranes of the cells expand, and assume a beautiful violet-blue colour in passing to the condition of starch; this colour gradually disappears as the process of transformation progresses, and the vegetable substance is converted into dextrine—a step beyond starch towards the formation of sugar. This principle is not affected by iodine.

Reviews.

Manual of Agricultural Analysis. By JOHN MITCHELL, Analytical Chemist, &c. 1845. Small 8vo. pp. 140. Simpkin and Co.

WITHIN the last few years a new class of chemists has sprung up, known under the name of agricultural chemists, and the appearance of numerous essays and manuals on manures, and the chemical composition of soils, is a clear proof that they are devoting themselves with industry and enthusiasm to a comparatively new subject. At the first sight of this volume, we were inclined to regard it as a Chemistry-made-easy-piece of compilation, but on carefully perusing it, we find it to be far superior to the ordinary run of works, intended to convey chemical information to the tillers of the land. The author has been judiciously concise, and has contrived to bring together many interesting facts in a small space. How far it may be expedient for farmers to analyse soils and manures for themselves, or to employ on the farm an agricultural analyst with an agricultural laboratory, is a question into which we do not propose to enter: but certain it is, that in the present rage for purchasing manures, natural or artificial, some chemical assistance is absolutely required to enable them to judge whether they have been fairly dealt with or not. The author tells us of some bone-ash selling at Hull last year, which contained ninety-five per cent of powdered limestone! Many tons of guano have been sold, of the production of which the sea-birds of the American and African coasts, must have been perfectly innocent! Thus one specimen of Manchester guano contained seventy-five per cent of brickdust! and we recollect hearing, that not being satisfied with carrying on these adulterations at home, certain speculators freighted ships to Ichaboe, with plaster of Paris and brown coal, for the purpose of adulterating the article at its source. The author speaks of the absence of urea in guano as a serious deficiency. We do not agree with him; one of the very best specimens of Ichaboe guano which we had occasion to analyse contained none, and analysts have we believe generally

come to the conclusion, that urea is not an essential constituent of this compound.

In the first portion of his Manual, Mr. Mitchell treats of the most elementary parts of chemical manipulation, giving a slight sketch of the apparatus required by the *Farmer-chemist*. Then we have an account of the most common reagents, with rules for detecting by their aid the usual saline and other constituents of soils. This is the most trying part of all compendious manuals of chemistry, but we are bound to say that the author has acquitted himself well. It is evident that he is practically acquainted with the precepts which he describes. In speaking of the alkalis he omits all notice of Dr. Clark's beautiful test for potash and soda, *i. e.* burning the minutest trace of the saline or alkaline substance at the end of a fine platina wire in a spirit-lamp flame. While it is more delicate, it is much more easily applied than the bichloride of platina; and indicates in an instant the presence or absence of either base. Owing to this omission, he is led, at page 56, into a long account of the chemical method of detecting potash when mixed with ammonia.

There is a short description of the classification of soils, with their respective agricultural characters, and the methods of determining the physical and chemical properties of their constituents. The chapter on quantitative analysis is more fitted for the advanced student than the beginner, but the details are as simple as they can be well given in a popular work. Science must, however, become much more widely diffused than it is at present, before farmers will be able to undertake the determination of the quantities of crenic and apocrenic acids (!) contained in a soil. Experiments cannot be profitably performed unless principles are well understood; a fact which will account for the many failures and disappointments that have been experienced by agriculturists. We knew an instance where a farmer-chemist, wishing to employ superphosphate of lime as a manure, prepared it by digesting calcined bone in diluted sulphuric acid: the experiment entirely failed, and it turned out on inquiry, that he had thrown away the liquid portion (*i. e.* that containing the su-

perphosphate) and applied only the dry earthy residue (sulphate of lime) to the soil! We cannot charge these crude and hasty applications of scientific doctrines to works of the description of that before us. They indicate a want of practical instruction in elementary matters, which no reading can supply; but which we hope will to a great extent be remedied by the new College of Chemistry.

We shall conclude by observing, that Mr. Mitchell's book is an unpretending little manual, containing a fair amount of information. It scarcely goes deep enough for medical students; but it may be profitably consulted by men who have not the time or inclination to refer to larger treatises on the science.

The Pharmaceutical Latin Grammar, &c. By ARNOLD JAMES COOLEY. London, 1845. Groombridge and Sons. Small 8vo. pp. 132.

THIS is a useful little compendium for those who wish to instruct themselves in the rudiments of the Latin Grammar. We are sorry that a necessity should exist for a publication of this kind, but we believe that at present a good preliminary education falls to the lot of comparatively few who enter the medical profession. Hence there are grinders in Latin as well as in *Materia Medica*, and both equally prosper, to the injury of the profession and the public. A book like this, with ordinary industry, will render the department of Latin-grinding unnecessary, provided the student have retained only a modicum of what he may have acquired at school. Independently of the general rules of the Grammar, which are concisely explained, and illustrated by apposite quotations on medical subjects, there is a very useful table of the contractions commonly used in prescriptions. The work is also intended for the use of dispensing chemists and all self-constituted practitioners in pharmacy. To them a knowledge of these contractions must be of great utility, for, according to our information, mistakes in the shop-interpretation of prescriptions are by no means unfrequent. We have heard, that where medicine was ordered for a woman recently delivered, the words *pro re natâ* were on one occasion taken to signify the new-born child!

Correspondence.

FALLACY OF DR. BIRKBECK NEVINS' TEST
FOR ASCERTAINING THE PURITY OF
DISULPHATE OF QUININE.

BY G. M. MOWBRAY,

Fellow of the Royal Medico-Botanical Society;
Member of the Chemical Society; M.P.S. &c.

THE following test has been suggested by Dr. Birkbeck Nevins, as appropriate for readily ascertaining the purity of disulphate of quinine.

"To one or two grains of the suspected salt* add three or four drops of sulphuric acid in a white evaporating dish, and twice as many drops of water; if the salt contains either starch or fatty matters they will remain, whilst if they are absent the whole will be dissolved. Let heat be next applied to the solution, and as it becomes concentrated, the acid will char any sugar which may be present, which will be indicated by a black stain round the edge of the solution, and the whole will speedily assume the same colour."

Allow me to submit, that this test is valueless, and for the following reasons:—Dr. Nevins appears to have overlooked a fact well known to chemists whose investigations have been directed to organic compounds, that salts may be readily recognised as belonging either to the organic or inorganic class, by heating on platina: if the compound under examination, after heating, yield a carbonaceous residue, then it belongs to the former class; if a whitish ash be left after ignition, then an inorganic compound has been acted upon. Now, Dr. Nevins directs us to add sulphuric acid to the disulphate: the effect of this is to convert the salt into the soluble sulphate, and on the application of heat, this soluble sulphate, in common with all organic salts, is decomposed, yielding a carbonaceous residue.

Could Dr. Nevins have shown, that which is opposed to all experimental results with organic compounds, that in the presence of sulphuric acid quinine is not readily carbonized,—and the reverse of this is the fact, as may readily be ascertained by heating a crystal of the soluble sulphate by the side of a sample of quinine purposely adulterated with sugar or gum,—his test might be so far admissible; but as Dr. Nevins has not shown this, and it cannot be shown withal, therefore his test is fallacious.

36, Paternoster-Row,
Sept. 1845.

[REMARKS.—In the September number

* If the acid be added first, the quinine will

of the Pharmaceutical Journal, Dr. Nevins admits to a certain extent the fallacy to which the test is liable. We agree, however, with our correspondent in thinking that no confidence can be placed in the test. The pure disulphate may not, under the circumstances, be so readily carbonized as that which is mixed with sugar, or other organic matter, but this is only a question of degree. Our correspondent will find in the same journal a method recommended by Mr. J. T. Barry, which depends on the relative solubilities of the pure and impure disulphate. The manipulations required, are, we fear, too delicate to render this a serviceable mode of testing.—ED. GAZ.]

Medical Statistics.

STATE OF THE PUBLIC HEALTH IN THE LAST
QUARTER, ENDING JUNE 28, 1845.

WE here give the Returns for the second quarter of the year.

"These Quarterly Returns are obtained from 115 Districts, subdivided into 576 Sub-Districts. *Thirty-four* Districts are placed under the Metropolis, and the remaining 81 Districts comprise, with some agricultural Districts, the principal towns and cities of England. The population was 6,578,912 in 1841." 40,729 deaths were registered in the quarter ending June 30th, 1845; which is 1235 more deaths than were registered on an average in the corresponding quarters of five previous years. The increase of deaths is not, however, in proportion to the probable increase of the population. After the necessary correction, the mortality of the Spring quarter is somewhat below the average.

Small-pox has prevailed epidemically in many districts, and the mortality from that disease has been considerable among children unprotected by vaccination. Several persons, said to have been previously vaccinated, and one who had been inoculated, also died of small-pox. In many districts no deaths from small-pox occurred; in others, the disease was introduced by migratory labourers, ill provided probably with household comforts and conveniences. The neglect of vaccination is adverted to by several Registrars. The Registrar of Leicester said: "I have registered *fifty deaths* by small-pox from January 1st to June 30th, 1845; only one of the fifty persons had been vacci-

not be dissolved by the subsequent addition of water; the water should first be added, and then the acid, as many dispensing chemists have found to their cost.

nated, and that was a doubtful case." The Heaton Norris, Stockport, mentions, that "in one family three infants, two sisters and a brother, all died of small pox in the short space of eleven days." "Small-pox," observes the Registrar of Great Marlow, Wycombe, "has appeared in part of my district. I find, on inquiry, that a vast number of parents have not availed themselves of vaccination, although perfectly aware that it can be done free of expense." The number of deaths (143) in the Northern Sub-District of Yarmouth is much above the average, in consequence of the "prevalence of small-pox, which has proved fatal in 62 cases. Of this number 61 died without previous vaccination. One case only is recorded in which vaccination is said to have been performed: a midwife was the operator, and the patient was attended by an old woman. The child was two months old."

Measles and *Scarlatina* have been epidemic in several districts. The 11,267 deaths which have occurred in the Metropolis are near the average of the season, if we allow for the increase of the population. The weekly deaths fell progressively in the quarter from 884 to 756, as the temperature rose. The deaths from *Small-pox* were 246—less by 235 than were registered in the previous quarter, but 102 above the average of the June quarter for five previous years. *One hundred and four* women died from Child-birth in the Metropolis within three months!

Districts in which the mortality was ABOVE the average of five June quarters:— West, North, East, and South Districts of the Metropolis; Winchester, Northampton, Colchester, Ipswich, Yarmouth, Dorchester, Plymouth, Kidderminster, Dudley, Wolverhampton, Birmingham, Leicester, West Derby (adjoining Liverpool), Blackburn, Rochdale, Chorlton, Ashton, Bradford, Leeds, Merthyr Tidal, Holywell, Anglesey.

Districts in which the mortality was BELOW the average of five June quarters:— Central District of the Metropolis, Devizes, Redruth, Penzance, Bristol, Hereford, Shrewsbury, Macclesfield, Liverpool, Preston, Bury, Wigan, Prescott, Sunderland, Tynemouth, Newcastle-on-Tyne, Kendal, Wrexham.

The mean temperature at Greenwich was 51° 9, which is 1° 1 below the average of the season*. The north and north-east winds prevailing, the temperature of the whole month of May was below the average; but the wind turning south-west, the tem-

perature of June rose above the average of the month*. The fall of rain was nearly 5 inches (4° 8). At Derby more than 8 inches of rain fell in the same time.

CAUSES OF DEATH.		Quarterly Average of Deaths in the Five June Quarters, 1832-43.	Deaths in the Spring Quarter, ending June 28, 1845.
ALL CAUSES		10960	11267
SPECIFIED CAUSES		10912	11231
The following selection has been made of the number of deaths from the most fatal diseases:—			
Small Pox		144	246
Measles		355	322
Scarlatina		325	201
Hooping Cough		438	463
Croup		99	83
Typhus		400	308
Dropsy		411	329
Sudden Deaths		173	152
Hydrocephalus		461	456
Apoplexy		209	252
Convulsions		670	641
Bronchitis		130	272
Pneumonia		813	869
Hydrothorax		54	54
Asthma		198	203
Phthisis or Consumption		1919	1819
Disease of Lungs, &c.		178	207
Pericarditis		11	29
Aneurism		9	11
Disease of Heart, &c.		240	379
Teething		205	163
Childbirth		78	104
Old Age		795	744
Violent Deaths		304	311

* According to Kaemtz, an accurate observer, with the south-westerly wind in summer, the thermometer falls, because it brings great humidity, giving rise to great evaporation, and it fills the atmosphere with clouds, which prevent the solar heat from reaching the earth. The unusual cold during the present summer appears explicable on this view. There has been, with a south-westerly wind, much rain and a cloudy sky. This wind is, on the other hand, warm in winter, the clouds preventing the loss of heat from the earth by radiation. It is the reverse with the north-easterly wind: this is generally accompanied with a clear sky; hence the surface of the earth becomes heated by the sun in summer, and the temperature rises, while radiation takes place most freely in winter, and the temperature falls to its minimum point. The coldest wind in summer is the north-west, the hottest wind is the south-east.—See Kaemtz, *Cours de Météorologie*, p. 163.

* The mean annual temperature for London, according to some observers, is 50° 4; according to others, 50° 8. The mean winter temperature for England is 37° 8, and the mean summer temperature, 62° 6.

YORK RETREAT, 49TH REPORT, 1845.

Table shewing the average proportion of recoveries and the mean annual mortality, in cases of insanity of recent and longer duration when admitted, 1796—1845.

Duration of disorder when admitted.	Proportion of Recoveries per cent. of the Admissions.			Mean Annual Mortality per cent. Resident.		
	Male.	Female.	Mean.	Male.	Female.	Mean.
FIRST CLASS.—First attack, and within 3 months	79.24	77.19	78.18	8.04	6.51	7.14
SECOND CLASS.—First attack, above 3, within 12 months.	48.07	42.85	45.54	4.94	4.23	4.44
THIRD CLASS.—Not first attack, and within 12 months	54.46	66.43	61.24	6.48	4.88	5.57
FOURTH CLASS.—First or not first attack, and more than 12 months . .	14.28	23.62	19.19	5.23	3.97	4.55
Average	43.15	50.65	47.13	5.56	4.33	4.85
Average, exclusive of those unconnected with the Society of Friends	44.47	53.17	49.04	5.47	4.23	4.76

Medical Intelligence.

RETURN OF THE AMOUNT OF DISSECTION PERFORMED BY STUDENTS FOR 1845-6.

Royal College of Surgeons of England, 6th of September, 1845.

SIR,—I am directed to transmit to you the enclosed Blank for the return of the quantity of dissection respectively performed by the several students of your school; and to direct your attention to the subjoined resolution of the Council of this College on the

14th of August, 1845.—I am, sir, your most obedient servant,

To ——— H. STONE,
For the Secretary.
Demonstrators at the School of

At a Meeting of the Council of the Royal College of Surgeons of England, on the 14th of August, 1845,

Resolved :—That, as recommended by the Committee, the following return, signed by the Demonstrator or Demonstrators, be required from each recognised school in England; and that upon any Demonstrator refusing or neglecting to make such return his recognition be withdrawn :—

FORM OF RETURN

Of the quantity of Dissection respectively performed by the Students of the Anatomical School of ——— within the Three Months preceding this 31st of December, 1845.

*** To be made on the 31st of December and the 31st of March.

Students.	Session of Dissection.	Parts Dissected.			Vessels Injected.	Relative Situation.
		Muscles and Ligaments.	Viscera.	Brain, Spinal Marrow, and Nerves.		

CAUTION IN THE USE OF PESSARIES.

WHENEVER the central opening of the pessary, particularly of a round one, an oval one, a cupped one, or one with a ring, is too large, the neck of the womb is liable to become slowly engaged within the opening, and at length strangulated, and after a time gives rise to the most serious consequences : such cases have been seen. The Annals of Medicine of Ottemberg for Oct. 1826, and the Bibliothèque Médicale t. 17, p. 269, mention a young unmarried Dutch girl, who, being affected with prolapsus, made

use of a ring pessary of ivory, the opening of which being too large, produced a strangulation of the womb, exhibiting a tumor external to the organs nearly as large as a child's head. As the patient was in the utmost pain, the reduction was attempted, but in vain, until the ivory ring had been divided with a saw. Augustin Roux, Journ. de Méd. et de Chirurg. Jan. 1778, relates that he was obliged to make use of a forceps to extract a pessary of this sort.—*Meigs' Translation of M. Colombat on the Diseases of Females.*

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Sept. 6.

BIRTHS.	DEATHS.	Aver. of 5 yrs.
Males.... 642	Males.... 371	Males.... 491
Females . 645	Females . 391	Females . 472
1287	762	963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	118
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	127
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	120
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	198
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich (Pop. 479,469)	199
Total	762

CAUSES OF DEATH in the Week ending Sept. 6.

Col. A. Weekly Averages of 5 Summers; Col. B. of 5 Years.

	A.	B.
ALL CAUSES	762	904 963
SPECIFIED CAUSES	758	897 954
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	184	198 184
<i>Sporadic Diseases, viz.</i> ..		
2. Dropsy, Cancer, &c. of uncertain seat	75	101 106
3. Brain, Spinal Marrow, Nerves, and Senses	119	158 159
4. Lungs, and other Organs of Respiration	192	229 292
5. Heart and Blood-vessels	17	21 24
6. Stomach, Liver, and other Organs of Digestion	89	88 71
7. Diseases of the Kidneys, &c. ..	13	6 6
8. Childbirth, Diseases of the Uterus, &c.	12	9 10
9. Rheumatism, Diseases of the Bones, Joints, &c.	5	6 6
10. Skin, Cellular Tissue, &c.	2	1 1
11. Old Age	35	55 70
12. Violence, Privation, Cold, and Intemperance	15	25 26

The following is a selection of the number of Deaths from the important special causes:—

Small-pox	4	Convulsions	30
Measles	61	Delirium Tremens ..	6
Scarlatina	14		
Hooping-cough ..	25	Bronchitis	17
Croup	6	Pneumonia	47
Trush	9	Phthisis	108
Diarrhoea	33	Dis. of Lungs, &c. ..	7
Dysentery	3		
Typhus	17	Teething	11
		Gastritis	0
Hæmorrhage	3	Enteritis	18
Dropsy	19	Peritonitis	5
Debility	8	Tabes Mesenterica ..	17
Sudden deaths ..	7	Dis. Stomach, &c. ..	3
		Dis. of Liver, &c. ..	11
Hydrocephalus ..	25		
Apoplexy	17	Childbirth	5
Paralysis	12	Dis. of Uterus, &c. ..	4

REMARKS.—The total number of deaths was no less than 142 below the summer and 201 below the annual average! The deaths from Zymotic diseases, with the exception of Measles, Hooping-cough, and Diarrhoea, are also below the averages. The mortality from Measles still continues very great, and appears to indicate some epidemic influence. While the total deaths in the metropolis are so considerably below the averages, having this week reached a minimum, the deaths from Measles alone are nearly three times the average of the season and the year! The 61 deaths occurred in individuals under 15 years of age. As the exact number of *casus* of Measles is not known, but the deaths only are reported, it is not easy to say whether this excessive mortality, which has now continued for *some months*, be due to a peculiar malignity of the disorder, or to defective medical treatment. The attention of practitioners should be directed to the subject. In all the districts, the mortality is below the averages*.

* The attention of the Registrar-General is called to a serious error in the weekly average mortality of the East districts for the years. This is represented as 920, which is greater than the summer weekly average for the whole of the metropolis. It is obviously a typographical error, and requires correction.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

THURSDAY, Sept. 11.—George James Macklin, Buntingford, Herts.

ROYAL OBSERVATORY, GREENWICH.

METEOROLOGICAL SUMMARY

For the week ending Saturday, Sept. 6.

	Max.	Min.	Mean.
Height of Barometer ^a	31°13	30°01	30°06
" " Thermometer ..	67°	43°4	54°6 ^a
Self-registering do.	104°1 ^b	29°4	
" in the Thames water ..	61°	58°2	

^a From 12 observations daily. ^b Sun.

RAIN, in inches, 0°07: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was only 4° above that of the climate of London for the year, but 8° below the mean summer temperature. The extreme range in the thermometer during the week was 74°7°.

NOTICES TO CORRESPONDENTS.

The papers of Dr. Ritchie, Mr. Smith, and Mr. Calder, in our next.

Mr. J. Houlton.—An erratum in our last Notices renders it necessary for us to state, that we did not insert the letter, as our correspondent could not speak from his own personal knowledge of the medicinal properties of the *Tagetes patula*.

Professor Faraday's papers on the Liquefaction of Gases will be concluded in our next; and the Lectures on the Metals will be shortly resumed.

Dr. R. Elliott.—We regret that we cannot notice the subject to which the last letter of our correspondent refers. We have, at the present moment, many communications on practical medicine and surgery waiting for insertion. The paper is left with the Printers.

Mr. Burton's paper on Hernia is unavoidably postponed until our next.

Received.—Dr. A. Buchanan.—Dr. Dick.

ST. THOMAS'S HOSPITAL MEDICAL AND SURGICAL SCHOOL.—

Session 1845-46, commencing on Wednesday, the 1st of October. Introductory Lecture by Dr. George Gregory.

Gentlemen desirous of becoming Students of St. Thomas's Hospital, are requested to produce Testimonials as to Moral Character and general Education, and are required to pay £40 for the first year, the same for the second, and £10 for each succeeding year.

Clinical Clerks, Clinical Reporters, and Surgeons' Dressers, will be selected from the Students, without any additional Fee. The Dressers will be provided with Rooms and Commons free of expense during their weeks of attendance.

Students who are now pursuing their studies at the Hospital will participate in these advantages, and will be required to pay in proportion to the sums they have already advanced.

Students requiring only a limited Course to complete their studies, can make special entries for Lectures or Practice, as heretofore.

Periodical Examinations will take place, in order to ascertain if each Student has duly availed himself of the advantages afforded; and a Testimonial will be given to each according to his assiduity and acquisitions.

The Certificates required by the University of London, College of Physicians, College of Surgeons, and the Society of Apothecaries, will be given for Practice and Lectures which have been attended.

Physicians—Dr. Williams, Dr. Burton, Dr. Barker.

Assistant-Physicians—Dr. Leeson, Dr. Goolden, Dr. Risdon Bennett.

Surgeons—Mr. Green, Mr. South, Mr. Mackmurdo.

Assistant-Surgeons—Mr. Solly, Mr. B. Travers, Mr. F. Le Gros Clark.

Clinical Lectures will be given by the Medical and Surgical Officers.

Clinical Instruction will commence the first week in November, and so continue till the end of April.

The wards are visited daily at half-past twelve. *Ophthalmic Department*.—Mr. Mackmurdo, Surgeon.

Lying-In Department.—Dr. Cape, Dr. Waller, Physicians; Mr. Woolnough, Assistant-Accoucheur.

Medicine—Dr. Marshall Hall and Dr. Barker.

The Exanthemata—Dr. George Gregory.

Materia Medica—Dr. Risdon Bennett.

Surgery—Mr. Green and Mr. B. Travers.

Anatomy, Descriptive and Surgical—Mr. F. Le Gros Clark.

The Teeth, their Structure and Diseases—Mr. E. Saunders.

Physiology and General Anatomy—Mr. R. D. Grainger.

Microscopical Demonstrations—Mr. Grainger.

Demonstrations on Anatomy—Mr. Dixon and Mr. Trew.

Demonstrations of the Preparations in the Museum—Mr. W. Adams, Curator.

Demonstrations of Morbid Anatomy—Dr. Munk.

Midwifery—Dr. Cape and Dr. Waller.

Chemistry—Dr. Leeson.

Surgery, Ophthalmic—Mr. Mackmurdo.

Physical Society.

Summer Courses.

Comparative Anatomy and Natural History—

Pathology—

Medical Jurisprudence—Dr. Leeson and Dr. R. Bennett.

Botany—

Chemistry, Practical—Mr. Heisch.

Midwifery—Dr. Cape and Dr. Waller.

The Library, Museum, Microscopical Room, and Botanic Gardens, are open to the Pupils.

A List of Persons who can be recommended to receive Pupils as Lodgers, may be obtained at the Medical Secretary's.

The Christmas recess will commence Dec. 24, and the Lectures will be resumed January 2. The Winter Session will terminate March 31, and the Summer Course will commence May 1.

Mr. Whitfield, Resident Medical Officer and Secretary, is authorised to enter Students.

WIGAN DISPENSARY.—Notice is

hereby given that, on the 1st day of October next, there will be a Vacancy in the office of HOUSE-SURGEON to the Wigan Dispensary, and that an adjourned Special General Meeting of the Subscribers will be held at the Dispensary, on the 16th day of October next, at 11 o'clock in the forenoon, for the purpose of electing a House-Surgeon to supply such vacancy.

The Rules of the Institution require the House-Surgeon to be a Graduate of one of the recognised Universities, or a Member of the Royal College of Surgeons in London, Edinburgh, or Dublin, and also a Licentiate of the Apothecaries' Company in London; and that he shall, before the day of Election, lay before the Committee his Diplomas, and also satisfactory Testimonials of his moral conduct and professional competency, and (if required) undergo an Examination before the Physicians and Surgeons of the Charity.

The Salary will be £100 per annum, with Fire, Candles, and Apartments, in addition.

By Order, CHARLES PIGOT,
Wigan, Sept. 11, 1845. Secretary.

GUY'S HOSPITAL MEDICAL and

SURGICAL SCHOOL.—The Session 1845-6; commencing on Wednesday, the 1st of October, when the Introductory Lecture will be delivered at 2 o'clock, by John Hilton, Esq. F.R.S. Assistant Surgeon to the Hospital.

Gentlemen desirous of becoming Students of Guy's Hospital, are requested to produce Testimonials as to Moral Character and general Education, and are required to pay £40 for the first year, the same sum for the second, and £10 for each succeeding year.

Clinical Clerks, Clinical Reporters, and Surgeons' Dressers, will be selected from the Students, without any additional Fee. The Dressers will be provided with Rooms and Commons free of expense during their weeks of attendance.

Students who are now pursuing their studies at the Hospital will participate in these advantages, and will be required to pay in proportion to the sums they have already advanced.

Students requiring only a limited Course to complete their studies can make special entries for Lectures or Practice, as heretofore.

Periodical Examinations will take place, in order to ascertain if each Student has duly availed himself of the advantages afforded; and a Testimonial will be given to each, according to his assiduity and acquisitions.

The Certificates required by the University of London, College of Physicians, College of Surgeons, and the Society of Apothecaries, will be given for Practice and Lectures which have been attended.

Consulting-Physician—Dr. Bright.

Physicians—Dr. Addison, Dr. Babington, Dr. Barlow.

Assistant-Physicians—Dr. Hughes, Dr. Owen Rees, Dr. Golding Bird.

Surgeons—Mr. Aston Key, Mr. Morgan, Mr. Bransby Cooper.

Assistant-Surgeons—Mr. Callaway, Mr. Cock, Mr. Hilton.

Eye Infirmary—Mr. Morgan, Surgeon; Mr. France, Assistant Surgeon.

Lying-in Charity—Dr. Lever, Dr. Oldham, Physicians.

*** A Prospectus of the School, or any further particulars, may be obtained on application, either personally or by letter, to Mr. Stocker, Apothecary to Guy's Hospital.

Lectures.

CLINICAL LECTURES

Delivered at University College Hospital,

By DR. C. J. B. WILLIAMS, F.R.S. &c.

[Taken in Short-Hand by our own Reporter, and revised by the Professor himself.]

LECTURE V.—June 5th, 1845.

Carcinomatous disease of the abdomen—history and remarks; diagnosis of regurgitant disease of the mitral valve—of tumor in the abdomen; reasons for supposing it malignant. Treatment. Post-mortem examination; with remarks; on traces of tubercle in the lungs—on the heart disease—on the cancerous growths in the omentum, mesentery, liver, &c.—proofs of malignancy—acute variety of cancer; explanation of its effects.

I HAVE another post-mortem to record—the case of Mary Brown, which is in many respects interesting. I will give the chief facts of her history, as reported by Mr. Henry, and comment on them as I go on.

“Aged 66, admitted on Monday, April 28th. The habitual state of her health was good up to the change of life, which occurred about fourteen years ago. She had then a considerable flow of blood from the uterus for three or four nights consecutively, and she was told that a vessel was ruptured. This discharge was stopped by medicine; she was ill from its effects about three weeks or a month. After this she felt nearly as well as before, until last October, except that she had been subject during the interval to palpitation coming on at times, and she also had occasionally a discharge from the uterus of a sanguineous character.

“Last October, finding the palpitation more troublesome, from mental anxiety and other causes, she applied a plaster of brown paper, soaked in vinegar, to the left side, and took some of Holloway’s pills, which, she says, did her no good. In about three weeks after taking the pills, she was seized with a profuse discharge of blood from the uterus, and the day when this appeared she went from Baker Street, Portman Square, to Walworth, in an omnibus. Next day the discharge returned in increased quantity, and for about two or three days in succession came on each day at about 10 P.M. She had medical advice the day after its appearance, and was told that there was a polypus in the uterus. Some injections were given her to restrain the hæmorrhage, which had the desired effect. She became very weak and faint from the loss of blood, but was

somewhat restored by wine and nourishing food. The discharge from the uterus has returned at various times up to the present, but not in so great a quantity, and is easily stopped by sponging with cold lotion.

“About four or five months ago she first had a cough, which she thought arose from using the cold lotion prescribed for her during the winter; it has always been accompanied by expectoration. Soon after her cough commenced, she felt by accident, when applying her hand to the abdomen during a severe fit of coughing, some hard lumps there. Before that she had a sense of heat for three or four months in the course of the transverse colon, but had not detected any tumor there. The feeling of heat existed before the last attack of discharge of blood, and was not affected by it; it has continued since that time.

“At present she does not feel rigors, the heat of the surface is rather increased, and the skin is dry. She is much weaker than she was, and thinner. Colour of the skin pale; lower extremities, especially the right, very oedematous and tender; the ankles much less so.” The oedema was greatest in the lower extremities, but not so much as usual in the lower parts, because she had not been in the upright posture. “There is some oedema of the walls of the back. Expression of countenance anxious; lips and cheeks pallid. Respiration is shorter than usual, especially after exertion; has been so for the last four or five months. Cough very troublesome at night, preventing her from sleeping; sputa copious, bronchitic, mucous. The stroke sound is good in the lower part of the chest and behind, and the breath sound is pretty clear every where, only a little tubular in the interscapular regions.

“She feels palpitation occasionally, lasting from a few minutes to some hours. Pulse occasionally intermittent. There is a long blowing murmur heard at the apex of the heart, not distinct at midsternum, where the natural double sound is plain. Tongue rather pale; it often feels sore, and her mouth dry. She has frequently a bad taste in her mouth; appetite not very good. She feels thirst and nausea when she coughs severely. Abdomen feels hot in the upper part. A hard flat mass is very easily felt, extending across the abdomen in front, about three inches in width, and passing from the hypogastric region of one side to that of the other. The lower margin is well defined, and resembles that of an enlarged liver. It passes just above the umbilicus; and between it and the margins of the cartilages of the right ribs a space is left, which is resonant on percussion, and in which, on deeper palpation, there can be felt a hard mass.” We may say another hard mass, inasmuch as it

was clearly distinct from the superficial one. "The tumor appears at first to be well defined at the sides, but at the right side a deeper-seated tumor could be detected in connection with it. There is also some dullness on percussion below the right mamma, and below this again there is resonance until we come to the tumor." Then there is a comment; it should perhaps not be introduced in the history of the case, because a case should consist of a statement of facts, and not conclusions from these; but there is put down what I mentioned at the time:—*"It appears as if the stomach or the intestines were displaced."* Bowels are not generally well opened, but were opened by a pill which she took last night. The urine has been at times scanty, but is now more free; not albuminous."

This examination was made and repeated from time to time, but I believe that much of the same result was obtained, with this exception, that the bowels were opened rather freely a few days after her admission, and the tympanitic sound which we perceived on percussion at the epigastrium was more distinct than previously, more resonant than at first, so that the distinction between the band of tumor crossing the whole abdomen, and the deeper-seated tumor which occupied the right portion of the region of the liver, was more complete than before, and confirmed me in the inference that this tumor was not an enlarged liver, but a tumor in another part.

And now I will take the opportunity of making remarks on the diagnosis of this case, as to the conclusion I formed with regard to the nature of the disease. In the first place, with regard to the lungs, there appeared to be some bronchitis, manifest by the cough and continued expectoration. The continuance of this bronchitis for so long a period, four or five months, rendered it probable, according to the notion I have laid often before you, that there was something more than mere bronchitis—that there was some consolidation tending to keep it up, and render it chronic. But the physical examination of the lungs gave very little evidence of anything of that kind, the breath sound being clear throughout, only a little tubular in the interseapular regions. There was no evidence, therefore, of considerable disease in the lung.

The heart, however, was obviously diseased, and the diagnosis of the nature of the disease was perfectly clear. There was slight dullness, and increased extent of impulse, in the cardiac region, implying a little enlargement. There was also a long blowing murmur, most distinctly heard where the apex beats—that is, below the left breast. This murmur was much less evident over the base of the heart; that is, at midster-

num, and it was still less distinct in the course of the great arteries. At midster-num, on the other hand, the natural double sounds, arising from the natural movement of the heart, were distinct. All these taken together constitute a distinct diagnosis of regurgitant disease of the mitral valve. I do not dwell further upon this, but I may remark that the case was a very clear one of that description, and the diagnosis was given or inferred accordingly. These cases are so common that I do not talk of them; they present the mere alphabet of diagnosis. We make nothing of these distinctions here, although there is but little known of them in this country, and still less abroad. It was only yesterday that I met a distinguished foreign physician who brought over a patient from Brussels for me to see. It was as clear a case as ever I saw of regurgitant and obstructive disease of the aortic valves. But this physician, and others who had seen the patient abroad, had come to the conclusion that there was some softening and dilatation of the right ventricle. What were the grounds of their conclusion I could not understand; and he could not see why I should be so positive that the aortic valves were diseased. I know full well, from various sources of information, that on the continent generally they are far behind us in the diagnosis of diseases of the heart. This was a plain case of diagnosis, because there was not much complication of valvular disease with any other, and you see how it was confirmed by the post-mortem examination.

We next come to the disease in the abdomen; and this is a matter of considerable interest. When I first felt the tumor, which was very palpable—so palpable, that I could not only feel the external part, but the part underneath, I certainly fancied that I seemed to feel the lower edge of an irregularly enlarged liver. I thought it was a case of cirrhosis with nodulated enlargement; not exactly like the case I commented upon in the last lecture, but like a case that occurred in the hospital last year, and of which there is a model in our museum. But, on a more careful examination, it was quite clear that this opinion could not be entertained; for, although the tumor had this feel, yet on going higher up towards the natural situation of the liver, the tumor seemed to cease; there was no longer that superficial hardness and resistance that was felt lower down. On trying that situation by the test of percussion, it became plain that the viscus underneath was intestinal, and not solid. The next question came to be, was it possible that the stomach and intestines had become displaced, and come in front of the enlarged liver? This crossed my mind, though I did not entertain the idea long, and I mentioned it at the bed-

side. I have seen such a case, but my reasons for believing that it was not so here were twofold. In the first place, the tumor itself, which was so superficial, seemed to end quite abruptly and completely, without any gradual shelving off, which would have been present had its front been occupied merely by a distended portion of intestine. It seemed, in fact, to be a distinct tumor, and not a part of a larger mass. I could feel its upper edge with nearly the same distinctness as the lower. On reflecting for a moment, you will perceive that that could not have been the case had the liver been displaced by a portion of intestine being in the front of it. Under those circumstances the lower edge would have been distinct, but the upper edge would have gradually sloped off. The second reason was, that the liver could itself be felt in its proper situation, occupying the right hypochondrium; yet the tumor present in the front of the abdomen was connected with the under edge of the mass of the liver, forming two distinct masses. Using pressure two or three days afterwards more carefully and freely, because the intestines being evacuated the abdominal walls were more flaccid, I was enabled to feel the mass of the liver even at the lower margin of the right ribs, under the tympanic intestine which was there placed. It is quite true that the tympanic sound of the intestine was in the wrong place, and still warranted the supposition that there was some displacement in addition to the tumor, as suggested by the comment in the history.

The tumor not being an enlarged liver, we had next to inquire what it was. It was not an enlarged spleen, very clearly; it was not confined to, nor was it chiefly in the situation of, that organ. Was it an ovarian tumor? This did not appear at all probable, inasmuch as it had not the rounded feel which such tumors present, nor did it appear chiefly in the first instance in one of the iliac regions; it was too high up. Where could the tumor be? In answering that question one must be determined partly by the result of previous experience, and having on a former occasion met with a tumor in the structure of, and connected with, the omentum, occupying a similar situation, I came to the conclusion that it was in the omentum, and that diagnosis was put down to the case. In direct support of this conclusion, I may add that the tumor, firm as it was, yet sounded tympanic on percussion, shewing that it was of no great thickness, and that intestine was underneath.

What was the nature of this tumor? It might be a simple sarcomatous growth; but there were circumstances which led me from the beginning, as soon as the form and position of the tumor were distinguished, to

believe that it was of a malignant character and this I mentioned to the friends of the patient, to some of the pupils, and to the house-physician. The reasons for coming to that conclusion were several; one, was the improbability of a simple sarcomatous growth occupying that position. Another was, the irregular feeling of the growth, which did not appear a very large one, like a sarcomatous growth might be expected to be. Another argument in favour of the same conclusion was, the symptoms of deterioration of general health that this patient's history had exhibited during the last six or eight months. Another circumstance tending to the same point was the simultaneous discharge which she had from the uterus: recurring again and again, and having first, occurred after the change of life, looked like a species of structural disease of the uterus. At that period one of the commonest forms of structural disease is carcinoma. Besides the symptoms of general deterioration of health, there was a peculiar pallidity about her countenance, and surface generally, which strengthened this supposition; and therefore the diagnosis formed was, that, in addition to its disease being situated chiefly in the omentum, it was most probably malignant, and of the same character as that which affected the uterus.

I shall not dwell further on the long history of the case, but I may point out with what a degree of minuteness we were able to examine the abdomen. This was another case in which there was a small quantity of liquid in the peritoneal sac, and its presence was very nicely detected both by percussion and by general fluctuation.

We now come to the subject of treatment. The case was obviously one which would admit of little but palliation. We could not say beforehand whether we might be able to palliate it considerably or not. Disease, even of a malignant kind, sometimes runs a very slow course indeed, and this particularly in elderly persons; therefore we should not always, because a disease is malignant, despair of doing any good at all. There are many instances which I have seen, in which not only have the symptoms been alleviated, but life has been prolonged, by careful treatment.

The treatment in this kind of incurable disease consists, not only in a palliation of the symptoms as they arise, in a mitigation of the pain, in stopping the discharges and other weakening causes which reduce the strength, but it also consists in supporting the natural powers, in strengthening the digestion, and in counteracting, as far as it is possible, the peculiar weakening influence which the disease has on the system.

Now, in malignant diseases, a great part of the destructive influence is exercised by a

peculiar cachexia which it induces, and especially induces by altering the condition of the blood, by reducing its mass, exhausting its nutrient parts, and thus withdrawing the nourishment from the vital functions. It becomes, therefore, a leading indication in all such cases (although it is an indication which cannot always be followed) to supply blood to the system, to improve the condition of the body, and to maintain its strength and nourishment. I must refer you to the report-book for the detail of the remedies by which we attempted to fulfil this indication. I cannot say that I think any of them were attended with marked success for any time. The patient herself thought that she was a little better for a time; she got better nights by opiates, and better days by nitric acid and tincture of hops. The report on the 1st of May was: "Cough and pain better; legs less swollen, but tender; urine more free:" and there were some symptoms of improvement for two or three visits; but after a while these symptoms vanished, and she became weaker and weaker. As an additional cause of weakness, great relaxation of the bowels came on, which required the administration of astringents to restrain. Keeping in view the indication of treatment to make better blood for the system, iron was given to her. I doubt whether it did not rather do her harm than good—distinctly it was attended with no good. A drawback against these remedies is, that their local injurious effect is often greater than the good that arises from their tonic influence. She sank, apparently from exhaustion, on the 28th May, no material change having taken place in the tumor, or in the condition of the heart.

This is the account of the post-mortem examination 24 hours after death. "The body was not much emaciated" (I will make a comment on that afterwards), "the fat under the integuments of the abdomen being half an inch in thickness. The skin was delicate and pale, and there was some oedema of the lower extremities. The abdomen was much enlarged, and tympanitic on percussion. The presence of a little fluid could be detected by percussion, and fluctuation in the most dependent parts; and the tumor could be distinctly felt through the parietes as during life.

"*The chest.*—The surfaces of the pleurae were slightly adherent at the apices of both lungs. The colour of the lungs was pale, largely mottled with dark iron grey. At the apex of the left was a contracted tough patch, presenting greater firmness and opacity than usual. The upper lobe was engorged; a cut surface exuded a frothy serum, and there was no thickening or induration about the root. Under a small cicatrix on the surface of the upper lobe was

a cavity, of the size of a horse-bean, containing dark-grey semifluid matter. On the upper part of the anterior mediastinum there was a small encephaloid tumor, the interior of which was in a softened state, and also several very small thin patches of the same nature under the pleura of the left lung." They were very thin and soft, and could not have attracted much attention had we not hunted for them. "The weight of this lung was 14 ounces. At the apex of the right lung was a dense opaque white patch, more depressed than the one on the left lung; and under it, in the substance of the lung, was a tubercle of white cretaceous matter, with some black substance in its interior. This lung also exuded frothy serum on being cut; weight, 1 lb. 2 ozs.

"There was a large opaque patch on the heart, between the left auricle and ventricle; also a little on the right auricle; the walls of the left ventricle were thickened. The cords and anterior lamina of the mitral valve were greatly enlarged and increased in substance, and the attachments of its tendons on the ring were thickened. The aortic valves were slightly thickened, and there was a slight atheromatous deposit on their upper rings"—nothing to interfere with their functions. "There was a fibrinous concretion in the pulmonary artery, extending along the cavity of the right ventricle. A portion of the septum below the junction of two of the aortic valves, had no muscular substance, and appeared to consist of endocardium alone." This, I presume, must have been congenital—an arrest of development. The septum is sometimes imperfectly completed. When there is an aperture altogether, it constitutes a serious variety of malformation of the heart; but here it was imperfect only with regard to the muscular walls. The separation of the two cavities was complete, but it was effected by the membrane lining the heart only, without there being any muscular structure between them. "The weight of the heart was 12 oz."—therefore slightly enlarged.

"The walls of the abdomen were adherent to the tumor beneath, and it was necessary to separate its connexion with the knife. The cavity of the peritoneum contained two or three ounces of clear serous fluid. The surface of the small intestines presented a slight inflammatory appearance, and the ascending colon was of a dark colour. *A portion of the transverse colon lay in front of the left lobe of the liver.* The tumor was situated in the omentum, and consisted of an encephaloid mass stretching across the abdominal cavity from the left hypochondrium to the lower edge of the right lobe of the liver, to which it was firmly attached; it also dipped down to the right kidney. The tumor varied much in firm-

ness in different parts; in some, especially on the wall of the abdomen, it was firm and dense, like fibro-cartilage, but much more brittle; in others it had become quite softened into a grumous pulp, like starch, tinged with blood. Portions of the tumor under the microscope presented very numerous large nucleated cells, some caudate, others oval, with many granules and molecules in them. The mesentery, although containing a large quantity of fat, was studded with numerous stellated patches of the same growth, of a dead white colour; a few milky bands of the same substance stretched across from one patch to another. Most of these patches were surrounded with vascular striæ—"giving a radiated appearance around the patches—"but the patches themselves shewed no trace of vessels in their interior, which, in many instances, contained a soft starch-like pulp. The abdominal surface of the diaphragm was studded with the same patches as the mesentery. The mucous membrane of the stomach along the lesser curvature was injected and thickened.

"The liver was paler in colour than natural. On removing the capsule, numerous granules were drawn up with it, and the texture of the liver easily broke down under the finger. On its surface, and scattered throughout its interior, were small masses of a pinkish-white hue, varying in size from a hemp-seed to that of a large pea or horse-bean. Those on the surface projected beneath the capsule." It is necessary to note that projection of the tumors, because it constitutes a distinction between growths and deposits. Growths rise beyond the organs which they affect; deposits, on the other hand, are usually interstitial, and if they extend beyond the surface, they generally spread under the investing membrane; they do not show that distinctness of form which true growths exhibit, whether malignant or non-malignant, particularly the former. "The gall-bladder was full of inspissated bile, together with about forty hard-brown concretions of different sizes, apparently consisting of cholesteroline"—they had its semi-transparent crystalline appearance. "Weight of the liver, 4 lbs."—that is, $\frac{1}{2}$ lb. above the usual weight; we must put the addition down to the malignant growths which were present.

"The spleen was rather smaller than usual, but healthy. The pancreas rather larger than usual, and perhaps a little paler. The left kidney was pale in colour, the capsule not adherent; a few serous cysts were found in the interior. Weight $5\frac{1}{2}$ ozs. The right kidney was not so pale as the left; its capsule was slightly adherent at one portion of the surface; it contained a few serous cysts. Weight, 4 oz.

"The interior of the uterus, towards the fundus, and at the upper part of the neck, was deeply and irregularly ulcerated; the walls were thickened, indurated, and of a pink-white colour. The right ovary was as large as a pigeon's egg, and consisted of a mass of firm carcinomatous structure, which, on pressure, yielded a thick, opaque, brain-like fluid. The left ovary was unaffected."

Now for remarks on the post-mortem examination. You see that throughout, the morbid appearances corresponded very exactly with the diagnosis, both as to the number of organs affected, the kind of disease affecting them, and the manner in which that disease produced the symptoms or signs.

First, with regard to the lungs. There was but little disease found in the lungs: I believe not enough to be discoverable by auscultation or percussion. The œdema and engorgement of the lung most probably occurred during the last few hours of life. It might be said that she was dying for about twenty-four hours—quite time enough to cause the great engorgement of the lung mentioned here. The chronic disease of the lung was scarcely enough to be discoverable by auscultation or percussion. It consisted of small tough deposits, or the remains of deposit, at the upper part of both lungs, and one very minute cavity at the upper part of the right lung. These lesions were more of a tuberculous than of a malignant character, and were such as are commonly met with in old subjects dying of various diseases. About eight years ago, I published a statement to the effect that in at least one-half of the bodies of persons above the age of 40 which I had seen opened for the preceding ten years in London, Paris, and elsewhere, (no matter of what disease they died) there were traces of disease of the lung, bearing more resemblance to tubercular disease than any other. I mention this, because lately M. Boudet in Paris, and Dr. Hughes Bennett in Edinburgh, have been publishing statements of the same fact, as if it were new. I not only noticed it long ago, but pointed it out as an argument in proof of a notion to which I am very partial, namely, that tuberculous disease is fatal in consequence of its extent rather than of its kind; that it exists in a great number of persons who die of other diseases, and in a great number of persons that are considered healthy. What a difference there is between that and the malignant disease of which we have now to speak! I may mention that it is rare to meet with tuberculous and malignant disease in the same subject. I have, however, met with such cases, and this is one of them. It is not that the two diseases may not be produced in the same patient, but the malignant disease, which is the more

serious, and the more rapid in its effects, supersedes the other, and goes on wasting the substance of all the textures throughout the body. It causes not only absorption of textures, but also absorption of the remains of tuberculous disease that may happen to have been deposited before. I have given examples in illustration of this in my Principles of Medicine, and therefore I will not dwell upon it now.

We next come to the Heart. In the heart there was found disease of the mitral valve, and a patch upon the surface of the pericardium. The latter was the trace of an old disease, the former was the chief affection. The disease of the mitral valve incapacitated it from closing the auricular orifice when the ventricle acted; hence regurgitation at that part, and which caused the murmur heard below the left breast. This was another verification of the diagnosis.

Now we come to the Abdomen. In the abdomen we very soon met with the tumor, and we found an explanation of its very palpable character in its being actually adherent to the walls of the abdomen. It had even grown into the walls of the abdomen; and this, no doubt, was one of the great reasons that rendered it so perceptible to the touch. But this likewise furnishes an insight into its nature, and confirms the notion that it was malignant disease. It gives us one of the leading features of malignant disease. A common growth or deposit would have pushed aside the viscera, caused a projection of the wall, and perchance, by and by, by dint of pressure, irritation and inflammation might have been excited, and adhesions might have been formed. But here there was no great protrusion, and yet this disease had laid hold of the adjoining parts; as it were, inserted its crab-like claws, or taken root, and begun to spread in it. This is one of the most characteristic features of what malignant disease is and does, spreading its parasitic offsets to surrounding textures: and it was necessary to separate the abdominal walls with a knife. The intestines, distended with gas, became apparent, and there was a little serum, as indicated during life. We saw, too, what had been announced before, that there was not only a tumor present, but displacement of the intestines. Besides the tumor which had occupied the situation which had been assigned to it, and which was clearly connected with the omentum, there was above it the colon, which had risen up in front of the left lobe of the liver, exactly explaining the situation of the tympanic sound which had been heard higher up than usual, and which led to the notion that there was displacement.

The extent of the tumor being traced illustrated another point made out during life—the attachment of the tumor stretching

from one hypochondrium to another, but attached peculiarly to the lobe of the liver. That had been distinctly felt and made the subject of diagnosis during the patient's life-time, and the post-mortem appearance corresponded very precisely with it. Although the liver itself was connected with the disease, yet that obviously was not the chief seat of it. Deposits had taken place in it, but the principal carcinomatous mass being in the omentum was in front of it, constituting, in fact, a separate mass.

The disease further proved its malignant character not only by its growth to the adjoining parts, its adhesion to and spreading to adjoining textures, but it had pervaded some vessels—whether lymphatics or blood-vessels is a matter of question—and by their means its seeds had been scattered in other textures, and had taken root and developed new masses of disease, constituting disseminated cancer; these were situated throughout the mesentery, the peritoneal covering of the diaphragm, and in the structure of the liver, to a considerable extent, and, as I stated before, slight traces were met with on the surface of the pleura.

We found the case exhibiting other of the features which attach to malignant disease. It was an organised structure, having a considerable amount of cohesion and hardness, but yet breaking down, not presenting the degree of toughness that natural textures of the same degree of hardness do. This is connected with the rapidity of growth to which I shall allude presently. This structure, thus developed, presented that brain-like or medullary-looking colour which is a character of this form of malignant disease; and parts of it, particularly portions most free from blood, the most isolated, had gone into a state of softening—softening down to that starch-like mass, mixed with blood, and sometimes without it, which exhibits the advanced or matured condition of carcinoma. Under the microscope the malignant character was exhibited in numerous nucleated cells, presenting the elements of new growths. Such nucleated cells are met with in the first development of young animals, but they are not met with in old animals, nor do they belong to their natural structures; therefore they were a new or young growth, constituting a separate existence in the parts they infested.

The manner in which these affected the surrounding texture was illustrated in several parts, but in none more than in the mesentery, where the patches of malignant growth were to be seen of milk-like colour, with vessels, not in them, but radiating around them, into which the growths, vampire-like, seemed to spread their suckers. These vessels formed a circular band, or stria, apparently reaching towards them, subser-

viently supplying the deadly parasite with blood. This seems like some horrible romance; but we let alone poetry, and study the physic of the matter. The malignant disease is an irritating body; it produces irritation in the surrounding parts, and the result is an enlargement of the vessels in the immediate neighbourhood. The parasitic growth feeds on the blood thus supplied, and the effect is to tax the structures, to sap the fluids, withdraw the nourishment and strength of the body; and thus the victim dies exhausted under its influence.

This was clearly not the common form of malignant disease which affects old persons; it was not scirrhus, otherwise it would have been slower in its progress, and probably would have run in one part to open cancer before others became affected. But it was from the commencement medullary carcinoma, or the soft or rapid form of cancer. Whether the disease was developed first in the omentum or in the uterus, we cannot determine; for although the symptoms of the first invasion are sometimes very manifest, yet at other times they are not.

I will take the opportunity of remarking how this case bears out the view which I gave at the College last year on the subject of carcinoma. Carcinoma is by no means necessarily a painful disease; its painful character depends much more on the constitution it infests, and the form it assumes, than on its actual presence. Neither in the uterus, nor in the abdomen, had there been much pain, although the growth had been in both of considerable duration and rapid advancement. The explanation of this I take to be in the first place the presence of no peculiar nervous sensibility to take cognisance of the presence of the foreign body. Secondly, much inflammation was not excited around, the blood-vessels were not excitable, and hence the common symptoms of inflammation and painful affection were absent. But, thirdly, one of the great causes of the pain of carcinoma is the hardness of the texture which is formed. It is in proportion to the hardness both of the scirrhus growth and the cacoplastic matter deposited around it, and which is intended by nature to circumscribe the growth, that carcinoma becomes painful. Here there was an absence of excessive hardness and toughness in these textures, and the reason of the rapid growth was to be found in the nature of the growth itself.

This was therefore a case of acute cancer, dependent on a large and rapid development of the seeds or primitive cells. A large quantity of these was deposited in some parts of the system, producing rapidity of growth, and injury of the textures, but without exciting much irritation or inflammation of them; thus leading to a speedy

exhaustion of the body without the peculiar sufferings which are the chief characteristics of lingering cases of the chronic or scirrhus variety.

LECTURES

ON THE

NATURE AND TREATMENT OF DEFORMITIES,

Delivered at the Royal Orthopædic Hospital, Bloomsbury Square,

BY R. W. TAMPLIN, F.R.C.S.E.

Surgeon to the Hospital.

Lateral Curvature of the Spine, continued.

Generally relaxed condition of the ligaments of the spine, without permanent deformity, existing after puberty. Treatment of lateral curvature. Cases which may be considered curable, or capable of being relieved—Incurable, or admitting only of support.

THERE is another condition I have occasionally met with, of lateral curvature of the spine, in patients past the age of puberty, which I omitted to mention to you, differing from that which I endeavoured to point out to you in the last lecture, inasmuch as the curve (in the form of italic *S*), is witnessed only during the time the patient is in the sitting or erect posture, and in which there exists a generally relaxed and weakened condition of the ligament on either side of the spine, but without any permanent deformity; for instance, when the patient is in the sitting, or erect position, the curvature is most evident, but place them in the horizontal, and it is altogether absent; and you will find that very slight pressure will, during the time they are in the erect posture, altogether remove the curves; and if the pressure is increased, the spine can be readily curved beyond the perpendicular in the opposite direction: *i. e.* a lateral curvature of the opposite side is easily made.

In the cases which have fallen under my observation, I have found upon inquiry, that from the first appearance of the deformity, they have at the suggestion of their medical advisers confined themselves during the greater part of the day in the horizontal posture, and continued this plan of treatment for years; to which, I imagine, it owes its origin, as, by so doing, the mechanical cause, namely, the superincumbent weight of the head and shoulders, is rendered inoperative, whilst the passive condition of the spine, as well as of the muscles generally, tends to keep up the first cause, namely, debility, and effectually prevents their recovering their lost tone, whereby they are

rendered incapable of supporting the column in the erect position even for a short time. The ligaments, also, suffering from the general cause, yield abnormally on either side when subjected to the stretching or pressure occasioned by the weight of the upper portion of the body, and the inability of the muscles to fulfil their proper functions.

The general health is, as a matter of course, exceedingly weak and delicate, in which all the tissues participate; for, although the means adopted unquestionably prevent an increase of deformity, and its becoming permanent, yet they, at the same time, prevent those means being used by which *alone* the general health can be restored, namely, change of air, and exercise. And it is certain that all the tonics combined, must, under such circumstances, be of no avail, beyond the temporary relief afforded. We now come to the

TREATMENT OF LATERAL CURVATURE.

The treatment of this deformity of the spine has formed the subject of so many publications, each differing more or less from the other, and the opinions entertained by the profession (I mean the legitimate portion of it), have been of so opposite a nature upon the subject, that it is not a matter of surprise, that the unfortunate patients should have been left almost exclusively in the hands of empirics, or, at the mercy of unprincipled quackery; hence, the various "couches," "reclining boards," the multitude of supports, not to mention the means formerly used for reducing a supposed dislocation of the vertebræ, "professed rubbers," by way of varying the scene, &c. &c. &c.; added to which, the time occupied in treating a case has been of so long duration, that few in the profession have had the courage to undertake the treatment of these distortions, which has been so "hedged in" with apparent, and, I may say, created difficulties, and has been so unsatisfactory in its results. If, however, the general cause be that which I believe it to be, namely, debility, unattended with disease, the indication of treatment is simple and straightforward. In all other deformities, after removing the greatest obstacle, namely, that of the most powerfully contracted muscles, by well regulated pressure and counter-pressure, the passive attachments yield, and if there is no malformation, the natural form is restored; and in paralytic cases, where there has been an unusual relaxation of the ligaments of a joint, experience teaches us that with the use of a continued support those ligaments will recontract, and with sufficient strength to hold the articulation in its proper relative position when subjected to the weight of the

body. As far as my experience goes, the spinal column differs in no way beyond that of its position and consequent peculiarities from any other articulation, with this exception, that I have never met with a paralytic condition of its muscles in these cases; and if from general debility the muscles are rendered incapable of supporting it, the ligaments of the spine will not form an exception to the general rule, but will yield and admit of a deviation from the perpendicular position, which, as I have pointed out to you, becomes rapidly increased in consequence of the mechanical cause, namely, the superincumbent weight of the head and shoulders being constantly in operation. Therefore the object we have in view is simple enough, namely, *to support the column in such a manner that at the same time the deformity is either cured, relieved, or any increase of it prevented. The patient shall be allowed to follow her usual avocations, and to take such general exercise as is conducive to, and absolutely necessary for, the preservation of health.*

In incipient cases, where the curve is slight, and scarcely perceptible, and that only at times, attention to the general health, relaxation from studies, combined with change of air and scene, will invariably cure the tendency to deformity.

In cases where the curve is slight, in the form of the italic *S*, but upon examination is found to be permanent, *i. e.* offers a firm resistance, although yielding to pressure, when the patient is in the horizontal position, even though it be of some years' duration, as a rule it may be perfectly cured.

In cases where the lateral deviation is considerable, and in which the ribs retain their form, although displaced considerably, provided the patient has not done growing, and that the spine is found to yield to a great extent when pressed upon by the hand in the horizontal posture, the deformity can at all times be relieved, and not unfrequently cured; no matter whether it be a double or treble curve.

In cases, however, that have passed the age of puberty, and in which the curve is considerable, and the spine upon examination is found to be firm and unyielding, where perhaps ankylosis of the vertebræ has taken place, but little good can be expected or derived; but, even in these cases, if there is considerable motion, as we sometimes meet with, the deformity may be relieved, and the sense of weakness altogether removed; which to the patient is of great importance.

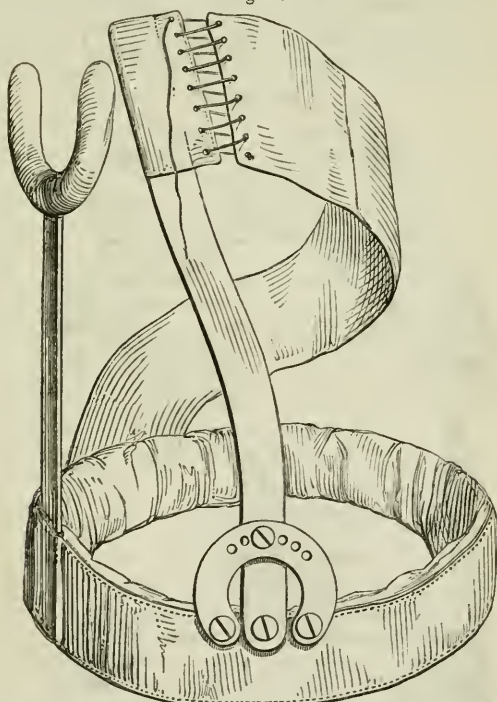
In rachitic cases, when the bones themselves become altered in form, of course a cure is out of the question. Our efforts can only be directed to apply the most efficient means to put a stop to an increase of the

deformity, and, as far as is safe or prudent, relieve that which is already in existence. I say, safe or prudent, because the distortion of the ribs and chest is occasionally so severe, that no one possessing either sense or feeling would attempt the application of such force as would have a tendency to restore them to a *straight* position, which could only be obtained at the expense of fracture of the ribs, or dislocation of the vertebræ.

In the foregoing division of cases I have purposely avoided allusion to the length of the upper or lower curve, whether the one is more or less abrupt than the other, &c. &c., inasmuch as they will be found in every variety, and do not, on that account, alter

the indication of treatment; if, however, as is occasionally met with, there is, in combination with the lateral, the antero-posterior curvature, the use of the common back-board, in conjunction with the means to be mentioned, I have found effectual in all cases that admit of cure; and in the more severe and incurable cases, the back-board represented in the last lecture will act as a constant support. The plan that I have adopted, and found so completely successful, is that of Tavnier, of Paris, namely, the use of the lever belt, to which I have added a crutch to support the shoulder on the concavity of the curve (vide fig. 1). This instrument, if properly applied, and care-

Fig. 1.



fully kept in its position, will cure any slight case of curvature by the constant support and pressure that it is capable of effecting on the projecting ribs. It must, however, be worn night and day, so that no return of the spine to the malposition is admitted of; as here, as well as in the deformities I have previously directed your attention to, unless the position is constantly maintained, the ligaments cannot recontract, neither can any resistance which those on the concavity of the curve offer be overcome: this, therefore, is indispensably necessary. In addition to the use of the

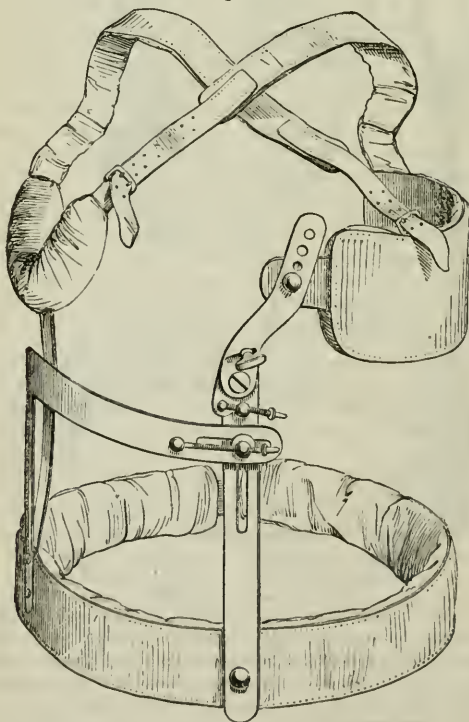
instrument, the only exercise that I have thought it prudent to adopt has been the use of a common pulley, fixed in a convenient position (which is readily done by any carpenter) for the arm, situated on the concavity of the curve, in the following manner. Let the handle of the pulley be fixed at the height of the hand of the patient, when the arm is extended in the horizontal position, whilst the patient is standing, and let the patient stand at such a distance that she can just grasp the handle; then let her flex and extend her arm alternately, having such a weight attached that she can raise without

any violent effort, just so long as she can do this without fatigue. Let this be repeated three or four times daily, directing her, however, to use only the arm, and not to throw the weight of the body on the pulley, as this would diminish the muscular effort. By this exercise the rhomboidei muscles, attached directly to the base of the scapula and the spine, are brought into a state of activity, and of course increased development—as well the body of the trapezius, the serratus magnus, and the lower portion of the longissimus dorsi and sacro-lumbalis—whilst the muscles in the convexity are rendered so far passive as to be used only in connection with the ordinary duties. I most decidedly object to the exercise of the muscles on both sides of the spinal column, during the time the curve is in existence, as is most commonly done in a variety of amusing and not less expensive ways to the

patient, as by so doing a direct obstacle is maintained, and kept in active operation, to prevent the removal of the curvature—a practice so opposed to common sense that one is at a loss to assign a reason for it, and a practice entirely opposed to the course adopted, and found to be of such essential importance, in the treatment of other deformities without exception.

In the more severe cases, then, I have not found the lever belt answer the desired end so well, as the difficulty of keeping up a constant and well-regulated pressure to any extent is so great, from the tilting of the belt, that it requires an amount of attention and watching, that none could devote to it except the friends of the patient, who cannot be expected in the mass of cases to carry out the treatment, and without which a cure is out of the question. I have therefore invented an instrument (*vide* fig. 2.), which I have

Fig. 2.



found most successful, the action of which may be compared to that of one hand pressing on the convexity of the ribs of the projecting side, whilst the opposite hand presses in the ileum of the opposite side, leaving the abdomen and chest free, and admitting of free exercise of the muscles at the same

time that the pressure is applied to that portion only which requires support; and as the spine yields, the pressure can be gradually increased, as easily as in the treatment of any one of the distortions I have had to speak of. It consists, as may be seen in the diagram, (fig. 2) of a band

which encircles the pelvis, having an upright position attached behind, at the upper portion of which is a moveable pad, so made that it adapts itself to the projecting ribs, and with the screw the pressure can be regulated according to circumstances; beneath is an arm, which extends to the opposite side of the band, and which regulates the position of the upright portion, without causing the instrument to be displaced to any extent, by means also of the screw represented in the diagram. The use of this instrument involves no sacrifice of time, nor confinement within doors, and enables the patient to take such exercise as they may feel disposed to, and to follow their usual duties, not only without inconvenience, but with absolute comfort; as the support derived from the instrument relieves them of that sense of weakness and pain that is complained of in almost every case of lateral curvature.

In all instances, I advise daily walking-exercise when the weather permits, twice or oftener, and that it should be continued so long on each occasion that the patient is not fatigued. The confinement of a school is also to be avoided, as the interval which is allowed for recreation in the middle of the day is far from sufficient to compensate for the many hours of sedentary occupation to which they are subjected. Objections have been raised to the use of the band encircling the pelvis, from the idea that the pressure upon those bones would interfere with their growth, or alter their shape and form; and thus offer an obstacle to the process of parturition. This objection has, however, been so ably met by the late Mr. John Shaw, that I have only to refer you to his work, on the treatment of lateral curvature.

With the view of improving the general health, and of giving tone to the stomach and promoting regular action in the alimentary canal, I have given small doses of the decoction of aloes, combined with the sesquicarbonate of ammonia and the spirits of lavender, two or three times daily; and if the patient is very delicate, the use of one or other of the numerous tonics, as may appear best suited to the individual case, can be had recourse to, together with a nourishing and slightly stimulating diet; with these means I have never witnessed a failure in such cases as admit of cure, nor in any have they failed to relieve the patient, and to improve or restore the general health. I have a patient at this time, aged 18 years, who is afflicted with as severe a lateral curvature, combined with an actual alteration in the form of the ribs, and relative proportion of the chest and abdomen, as can be well imagined, almost as bad as that represented in the last lecture, (fig. 4), who, by the use of this instrument alone, has been raised an inch and three-fourths in six months, whilst the im-

mense hollow in the side corresponding with the concavity of the curve is very nearly gone. It is not a case which admits of cure, but one in which great good has been effected by the removal of the severity of the deformity. In other instances of slight curvature, I have found the back retain itself in the perpendicular position unaided within three months; these, however, are cases occurring in patients who have done growing, and in whom there is no alteration in the form of the ribs themselves. Some fifteen months since, I was consulted by two of the same family, both of whom have been afflicted in this way, the one 17 years of age, the other 14; within three months the elder left off the instrument for an hour daily without any relapse, and at the end of six months she left it off the greater part of the day; and this was a patient who had long been subjected to the reclining couch, &c. &c., without having obtained any relief. The younger sister has been compelled to continue the use of the instrument up to the present time, in consequence of her rapid growth, although the spine is retained in the straight position without the slightest inconvenience to the patient or interference with her usual habits. Two years since, I was consulted by a patient aged 23, who for five or six years had been the subject of the treatment commonly adopted, that of lying down, &c., when although the curvature was slight, yet it continued in the same condition: within three months after wearing the instrument, her back was brought into the straight position, and she commenced leaving off the use of it; which for twelve months past has been omitted the whole day, and yet no relapse has followed; the exercise explained to you has in each instance been followed out.

Section of the muscles has been freely performed on the continent for lateral curvature. I once divided them in a case that admitted only of relief, and with as much success as I could have anticipated; the back certainly yielded quickly, up to a certain point, but the difficulty that presents itself is the great sense of weakness that follows, together with the necessity for the most complete support during the time the ligaments are gaining strength; so that I cannot perceive that any advantage is gained by this proceeding, as I believe any case that admits of relief or cure can be quite as quickly restored without the operation as with it.

In the variety alluded to at the commencement of the lecture, where there is no permanent deformity, I have used Tavernier's belt, adding, however, another belt to the instrument, with a view of giving complete support to the lower as well as the upper curve, and also to prevent any lateral mo-

tion, so that the ligaments may be allowed to contract upon themselves; and as merely "support" is required, not any amount of pressure, it does not interfere with the exercise of the muscles of the chest or abdomen, and thus the patients are relieved from the necessity of continuing the horizontal posture, without risk of increasing the curve; in this way they are enabled to take proper exercise, and to recover their lost health.

In all cases, before giving an opinion, your attention must be particularly directed to the nature of the deformity, the length of time it has existed, whether complicated with any alteration in the normal form of the ribs, as in rachitis, the amount of motion on pressure being made, and the nature of that motion, whether it is firm and unyielding, or whether, although firm, there exists more or less passive, yielding upon a continuance of the pressure, as of course the correctness of your diagnosis depends upon it.

As regards the various modes of treatment that are and have been so long in use, I have nothing to say upon them, beyond this, that I believe them to be wrong in principle, and in many instances directly injurious; as, for instance, that barbarous practice of keeping patients for months or years in the horizontal position; for should the curvature be relieved, the first cause of the deformity is kept in active operation, and in fact greatly increased, independently of the sacrifice of time and health; and I venture to hope that by drawing the attention of the profession to the views and treatment I have brought before you, the time will not be far distant before an end is put to such horrible practices.

PERIOD OF LIFE AT WHICH UTERINE POLYPUS MOST FREQUENTLY OCCURS.

THE age from thirty to forty, and that from forty to fifty years, are the terms in which uterine polypi are most frequently met with. Out of fifty-one cases collected by authors, M. Malgaigne found between 26 and 30 years, 4 cases; from 30 to 40 years of age, 20; from 40 to 50, 16 cases; from 50 to 60, 4; from 60 to 70, 3; from 70 to 79, 4 cases; in all 51 cases. From this statistical report, it appears that polypos excrecences are rare in very aged persons, in young women, and especially in girls under twenty-five years of age; yet Dessault extirpated a polypus in a girl fifteen years old, and Dr. Simpson informs us that Siebold has observed three polypi in the case of a girl with the hymen perfect. M. Colombat also adds a case of a girl, eighteen years of age, who had a polypus attached to the os tincæ.—*M. Colombat on the Diseases of Females; Meigs' Translation.*

Original Communications.

ON THE

LIQUEFACTION AND SOLIDIFICATION OF BODIES GENERALLY EXISTING AS GASES.

BY MICHAEL FARADAY, Esq. D.C.L.
F.R.S. &c. &c.

[Concluded from p. 892.]

Additional remarks respecting the Condensation of Gases.

Nitrous oxide.—Suspecting the presence on former occasions of nitrogen in the nitrous oxide, and mainly because of muriate in the nitrate of ammonia used, I prepared that salt in a pure state from nitric acid and carbonate of ammonia previously proved by nitrate of silver, to be free from muriatic acid. After the nitrous oxide prepared from this salt had remained for some days in well-closed bottles, in contact with a little water, I condensed it in the manner already described, and when condensed I allowed half the fluid to escape in vapour, that as much as possible of the less condensable portion might be carried off. In this way as much gas as would fill the capacity of the vessels twenty or thirty times or more, was allowed to escape. Afterwards the following series of pressures was obtained:—

Fahr.		Atmospheres.
—125	. . .	1·00
—120	. . .	1·10
—115	. . .	1·22
—110	. . .	1·37
—105	. . .	1·55
—100	. . .	1·77
—95	. . .	2·03
—90	. . .	2·34
—85	. . .	2·70
—80	. . .	3·11
—75	. . .	3·58
—70	. . .	4·11
—65	. . .	4·70
—60	. . .	5·36
—55	. . .	6·09
—50	. . .	6·89
—45	. . .	7·76
—40	. . .	8·71
—35	. . .	9·74
—30	. . .	10·85

— 25	.	.	.	12.04
— 20	.	.	.	13.32
— 15	.	.	.	14.69
— 10	.	.	.	16.15
— 5	.	.	.	17.70
0	.	.	.	19.34
5	.	.	.	21.07
10	.	.	.	22.89
15	.	.	.	24.80
20	.	.	.	26.80
25	.	.	.	28.90
30	.	.	.	31.10
35	.	.	.	33.40

These numbers may all be taken as the results of experiments. Where the temperatures are not those actually observed, they are in almost all cases within a degree of it, and proportionate to the effects really observed. The departure of the real observations from the numbers given is very small. This table I consider as far more worthy of confidence than the former, and yet it is manifest that the curve is not consistent with the idea of a pure single substance, for the pressures at the lowest temperature are too high. I believe that there are still two bodies present, and that the more volatile, as before said, is condensable in the liquid of the less volatile; but I think there is a far smaller proportion of the more volatile (nitrogen, or whatever it may be) than in the former case.

Olefiant gas.—The olefiant gas condensed in the former experiment was prepared in the ordinary way, using excellent alcohol and sulphuric acid; then washed by agitation with about half its bulk of water, and finally left for three days over a thick mixture of lime and water with occasional agitation. In this way all the sulphurous and carbonic acids were removed, and I believe all the ether, except such minute portions as could not interfere with any results. In respect of the ether, I have since found that the process is satisfactory; for when I purposely added ether vapour to air, so as to increase its bulk by one-third, treatment like that above removed it, so as to leave the air of its original volume. There was yet a slight odour of ether left, but not so much as that conferred by adding one volume of the vapour of ether to 1200 or 1500 volumes of air. I find that when air is expanded $\frac{1}{4}$ th or $\frac{1}{3}$ rd more by the addition of the vapour of ether, washing first of all with about $\frac{1}{10}$ th of its volume of water, then again with

about as much water, and lastly with its volume of water, removes the ether to such a degree, that though a little smell may remain, the air is of its original volume.

As already stated, it is the presence of other and more volatile hydrocarbons than olefiant gas, which the tensions obtained seemed to indicate, both in the gas and the liquid resulting from its condensation. In a further search after these I discovered a property of olefiant gas which I am not aware is known (since I do not find it referred to in books), namely its ready solubility in strong alcohol, ether, oil of turpentine, and such like bodies*. Alcohol will take up two volumes of this gas; ether can absorb two volumes; oil of turpentine, two volumes and a half; and olive oil one volume by agitation at common temperatures and pressure; consequently, when a vessel of olefiant gas is transferred to a bath of any of these liquids, and agitated, absorption quickly takes place.

Examined in this way, I have found no specimen of olefiant gas that is entirely absorbed; a residue always remains, which, though I have not yet had time to examine it accurately, appears to be light carburetted hydrogen; and I have no doubt that this is the substance which has mainly interfered in my former results. This substance appears to be produced in every stage of the preparation of olefiant gas. On taking six different portions of gas at different equal intervals, from first to last, during one process of preparation, after removing the sulphurous and carbonic acid and the ether as before described, then the following was the proportion per cent. of insoluble gas in the remainder when agitated with oil of turpentine, 10.5; 10; 10.1; 13.1; 28.3; 61.8. Whether carbonic oxide was present in any of these undissolved portions I cannot at present say.

In reference to the part dissolved, I wish as yet to guard myself from being supposed to assume that it is one uniform substance; there is indeed little doubt that the contrary is true; for whilst a volume of oil of turpentine introduced into twenty times its volume

* Water, as Berzelius and others have pointed out, dissolves about $\frac{1}{4}$ th its volume of olefiant gas, but I find that it also leaves an insoluble residue, which burns like light carburetted hydrogen.

of olefiant gas cleared from ether and the acids, absorbs $2\frac{1}{2}$ volumes of the gas, the same volume of fresh oil of turpentine brought into similar contact with abundance of the gas which remains when one-half has been removed by solution only dissolved 1.54 part, yet there was an abundant surplus of gas which would dissolve in fresh oil of turpentine at this latter rate. When two-thirds of a portion of fresh olefiant gas were removed by solution, the most soluble portion of that which remained required its bulk of fresh oil of turpentine to dissolve it. Hence at first one volume of camphine dissolved 2.50, but when the richer portion of the gas was removed, one volume dissolved 1.54 part; and when still more of the gas was taken away by solution, one volume of camphine dissolved only one volume of the gas. This can only be accounted for by the presence of various compounds in the soluble portion of the gas.

A portion of good olefiant gas was prepared, well agitated with its bulk of water in close vessels, left over lime and water for three days, and then condensed as before. When much liquid was condensed, a considerable proportion was allowed to escape to sweep out the uncondensed atmosphere and the more condensable vapours; and then the following pressures were observed:—

Fahr.	Atmospheres.
—105 . . .	4.60
—100 . . .	4.82
—95 . . .	5.10
—90 . . .	5.44
—85 . . .	5.84
—80 . . .	6.32
—75 . . .	6.89
—70 . . .	7.55
—65 . . .	8.30
—60 . . .	9.14
—55 . . .	10.07
—50 . . .	11.10
—45 . . .	12.23
—40 . . .	13.46
—35 . . .	14.79
—30 . . .	16.22
—25 . . .	17.75
—20 . . .	19.38
—15 . . .	21.11
—10 . . .	22.94
—5 . . .	24.87
0 . . .	26.90

On examining the form of the curve given by these pressures it is very evident

that, as on former occasions, the pressures at low temperatures are too great to allow the condensed liquid to be considered as one uniform body, and the form of the curve at the higher pressures is quite enough to prove that no ether was present either in this or the former fluids. On permitting the liquid in the tube to expand into gas, and treating 100 parts of that gas with oil of turpentine, eighty-nine parts were dissolved, and eleven parts remained insoluble. There can be no doubt that the presence of this latter substance, soluble as it is under pressure in the more condensable portions, is the cause of the irregularity of the curve, and the too high pressure at the lower temperatures.

The ethereal solution of olefiant gas being mixed with eight or nine times its volume of water, dissolved, and gradually minute bubbles of gas appeared, the separation of which was hastened by a little heat. In this way about half the gas dissolved was re-obtained, and burnt like very rich olefiant gas. One volume of the alcoholic solution, with two volumes of water, gave very little appearance of separating gas. Even the application of heat did not at first cause the separation, but gradually about half the dissolved olefiant gas was liberated.

The separation of the dissolved gas by water, heat, or change of pressure from its solutions, will evidently supply means of procuring olefiant gas in a greater state of purity than heretofore; the power of forming these solutions will also very much assist in the correct analysis of mixtures of hydrocarbons. I find that light carburetted hydrogen is hardly sensibly soluble in alcohol or ether, and in oil of turpentine the proportion dissolved is not probably $\frac{1}{15}$ th the volume of the fluid employed; but the further development of these points I must leave for the present.

Carbonic Acid.—This liquid may be retained in glass tubes furnished with cemented caps, and closed by plugs or stop-cocks, as described, but it is important to remember the softening action on the cement, which, being continued, at last reduces its strength below the necessary point. A tube of this kind was arranged on the 10th of January, and left; on the 15th of February it exploded, not by any

fracture of the tube, for that remained unbroken, but simply by throwing off the cap through a failure of the cement. Hence the cement joints should not be used for long experiments, but only for those enduring for a few days.

Oxygen—Chlorate of potassa was melted and pulverized. Oxide of manganese was pulverized, heated red-hot for half an hour, mixed whilst hot with the chlorate, and the mixture put into a long strong glass generating tube with a cap cemented on, and this tube then attached to another with a gauge for condensation. The heat of a spirit lamp carefully applied produced the evolution of oxygen without any appearance of water, and the tubes, both hot and cold, sustained the force generated. In this manner the pressure of oxygen within the apparatus was raised as high as 58.5 atmospheres, whilst the temperature at the condensing place was reduced as low as -140° Fahr, but no condensation appeared. A little above this pressure the cement of two of the caps began to leak, and I could carry the observation no further with this apparatus.

From the former scanty and imperfect expressions of the elasticity of the vapour of the condensed gases, Dove was led to put forth a suggestion*, whether it might not ultimately appear that the same addition of heat (expressed in degrees of the thermometer) caused the same additional increase of expansive force for all gases or vapours in contact with their liquids, provided the observation began with the same pressure in all. Thus to obtain the difference between forty-four and fifty atmospheres of pressure, either with steam or nitrous oxide, nearly the same number of degrees of heat were required; to obtain the difference between twenty and twenty-five atmospheres, either with steam or muriatic acid, the same number were required. Such a law would of course make the rate of increasing expansive force the same for all bodies, and the curve laid down for steam would apply to every other vapour. This, however, does not appear to be the case. That the force of the vapour increases in a geometrical ratio for equal increments of heat is true

for all bodies, but the ratio is not the same for all. As far as observations upon the following substances, namely, water, sulphurous acid, cyanogen, ammonia, arseniuretted hydrogen, sulphuretted hydrogen, muriatic acid, carbonic acid, olefiant gas, &c. justify any conclusion respecting a general law, it would appear that the more volatile a body is, the more rapidly does the force of its vapour increase by further addition of heat, commencing at a given point of pressure for all: thus for an increase of pressure from two to six atmospheres, the following number of degrees require to be added for the different bodies named: water 69° , sulphurous acid 63° , cyanogen $64^{\circ}.5$, ammonia 60° , arseniuretted hydrogen 54° , sulphuretted hydrogen $56^{\circ}.5$, muriatic acid 43° , carbonic acid $32^{\circ}.5$, nitrous oxide 30° ; and though some of these numbers are not in the exact order, and in other cases, as of olefiant gas and nitrous oxide, the curves sometimes even cross each other, these circumstances are easily accounted for by the facts already stated of irregular composition, and the inevitable errors of first results. There seems every reason therefore to expect that the increasing elasticity is directly as the volatility of the substance, and that by further and more correct observation of the forces, a general law may be deduced, by the aid of which, and only a single observation of the force of any vapour in contact with its fluid, its elasticity at any other temperature may be obtained.

Whether the same law may be expected to continue when the bodies approach near to the Cagniard de la Tour state is doubtful. That state comes on sooner in reference to the pressure required, according as the liquid is lighter and more expandible by heat and its vapour heavier; hence indeed the great reason for its facile assumption by ether. But though with ether, alcohol and water, that substance which is most volatile takes up this state with the lowest pressure, it does not follow that it should always be so; and in fact we know that ether takes up this state at a pressure between thirty-seven and thirty-eight atmospheres; whereas muriatic acid, nitrous oxide, carbonic acid, and olefiant gas, which are far more volatile, sustain a

* Poggendorff's Annalen, xxiii. 290; or Thomson on Heat and Electricity, p. 9.

higher pressure than this without assuming that peculiar state, and whilst their vapours and liquids are still considerably different from each other. Now whether the curve which expresses the elastic force of the vapour of a given fluid for increasing temperatures continues undisturbed after that fluid has passed the Cagniard de la Tour point or not, is not known, and therefore it cannot well be anticipated whether the coming on of that state sooner or later with particular bodies will influence them in relation to the more general law referred to above.

The law already suggested gives great encouragement to the continuance of those efforts which are directed to the condensation of oxygen, hydrogen, and nitrogen, by the attainment and application of lower temperatures than those yet applied. If to reduce carbonic acid from the pressure of two atmospheres to that of one, we require to abstract only about half the number of degrees that is necessary to produce the same effect with sulphurous acid, it is to be expected that a far less abstraction will suffice to produce the same effect with nitrogen or hydrogen, so that further diminution of temperature and improved apparatus for pressure, may very well be expected to give us these bodies in the liquid or solid state.

Royal Institution,
Feb, 19, 1845.

CHRONIC ERYSIPELAS.

ON the going off of erysipelas, it sometimes leaves a fulness behind it, which pits on pressure like anasæra, but which is readily distinguished from it by the thickened and roughish cuticle. Now, it is a remarkable fact, that, if the skin be left in this morbid condition, it will be attacked a second time with erysipelas at some future period; it may be in three, six, or twelve months, but it will not escape another attack, one that will be more severe than the first, and which will leave still greater fulness and thickness than the first did. When this happens, the patient will, in my opinion, be subject to returns of the malady for the rest of his life. Such a disease I should be inclined to call chronic erysipelas. I have tried every thing to cure this chronic form, and although in every trial I produced an amendment, I never completely succeeded with the existing affection, or in preventing a return of the erysipelas in its more acute form.—*Professor Colles' Lectures on Surgery.*

ILLUSTRATIONS OF THE INTEREST AND IMPORTANCE OF THE STUDY OF CASES OF SUDDEN OR VIOLENT DEATH.

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[Continued from page 899.]

I.—*Of the study of cases of violent death as illustrative of the leading symptoms and the general nature of diseases.*

THE interest and importance of these cases in this respect will best appear from the consideration of some diseases as actually illustrated by them. We may begin with that of malignant cholera—a disease which may be said to occupy a middle ground between the cases in question and the more ordinary forms of acute (febrile) disease. It will be in the recollection of many, that some years ago, when the disease was rife among us, a vast variety of opinions were broached as to its nature, and that it was generally believed by the public to be a disease which the profession did not *understand*. Many of those opinions were sufficiently absurd, and, doubtless, there are many points connected with the disease, and especially its mode of origin and diffusion, still unknown to us, or imperfectly understood by us. But I humbly submit that there is nothing very mysterious or unintelligible in its pathology; and that if medical men would bring to the investigation of it a clear perception of the principles furnished by the study of the effects of violent injuries, and especially of the sedative poisons, on the living body, there would be a pretty general agreement among them on the subject. It would then, I think, appear, and be generally acknowledged, that cholera is a disease which, with distinctive peculiarities of its own, bears a very close resemblance, in its leading features, to cases of poisoning by arsenic or corrosive sublimate; being attended and essentially characterised, as these cases are (besides by copious vomiting and purging, and cramps, which are sometimes wanting), by extreme depression of the heart's action, prostration of the nervous and muscular powers, and, like them, proving fatal in the way of syn-

cope or asthenia. What is matter of regret in regard to this disease is, not that its nature is unknown, but that its fatality is so great, and the power of medicine over it so feeble. In these respects, however, it does not differ materially, if at all, from the effects of the poisons specified; and were these to operate for a season as effectively and as extensively on the human race as the unknown cause of cholera recently did, while the alarm would be equally great, no embarrassment would be felt in pronouncing on the nature of such an epidemic.

A similar illustration might be given of the pathology of that rare form of common continued fever denominated (unfortunately, because calculated to mislead us) the *congestive*, and which is allied, in many of its features, to cholera: of the pathology of plague, and of the worst or congestive forms of scarlatina, measles, erysipelas, &c., all of which, more or less, are cases "in which (as Dr. Alison well observes) the sedative agency of the remote cause of the disease acts with extreme force, the usual febrile reaction is suppressed or obscured, and the symptoms of the first, or cold stage, assume their maximum of intensity;"* "feebleness of pulse, coldness of surface, muscular debility, and depression of all the functions of the nervous system, approaching and sometimes amounting to, complete coma, being the leading symptoms; spasms attending some cases, and vomiting others†." Now these are precisely the symptoms, and the essential characteristics, of concussion of the brain, and of many cases of poisoning.

Again, there are two varieties of peritonitis, different from the common form of that disease, the phenomena of which are satisfactorily elucidated; those of the one by the effects of a blow on the stomach, those of the other by the effects of certain sedative poisons. The varieties alluded to, are the peritonitis arising from the rupture, or from a perforating ulcer of the stomach or intestines, with escape of the contents of these into the cavity of the peritoneum, and that which occasionally prevails as an epidemic among lying-in females, but sometimes occurs sporadi-

cally—in both of which, with distinctive peculiarities in the case of each, there is rapid sinking of the *vis vita*, and, on examination after death, comparatively slight marks—nay, sometimes no marks at all—of inflammation. Yet there is no difficulty in understanding the nature of these cases when we take into account the effects, and the rapidly fatal issue of these, even independently of inflammation, of violent mechanical injury of the abdomen, or of certain poisons taken into the system.

Again, to be called in to a case of jaundice, and find the patient become first drowsy and delirious, and then profoundly comatose, and see him die of coma within a few days from the commencement of his illness—symptoms and a result, these, very different from those attendant and consequent on an ordinary case of that disease—would, some years ago, have embarrassed not a few practitioners. But the rationale of this rare form of jaundice is now satisfactorily made out, first, by the fact that the secretion of bile at the liver is *suppressed*, the bile-ducts being found, on examination after death, to be pervious and empty; whereas in the ordinary cases of that disease, the bile is secreted, but cannot, in consequence of obstruction, find egress by the ducts: secondly, by a comparison of that with this other fact, that in the *ischuria renalis*, the symptoms of which are exactly similar to those constituting the peculiarities of this form of jaundice, the secretion of urine is suppressed, and urea appears in the blood: thirdly, by a comparison of both these diseases with the effects of extirpation of the kidneys in the lower animals: and lastly, by a comparison of this whole set of facts with the action on the nervous system of narcotic poisons.

Once more, apoplexy is a disease the several varieties of which are particularly well illustrated by a reference to certain kinds of violent injuries, and the effects of narcotic poisons. The coma which is common to all the varieties of apoplexy is precisely similar to that produced by an over-dose of opium. And when we see that such a case of poisoning may prove fatal without any mechanical lesion of the brain, or without any change in it that can be recognised as morbid, it need

* Cyclopædia of Pract. Med., vol. i. p. c.

† Outlines of Pathology and Practice of Medicine, p. 396.

not surprise us to find that cases of apoplexy occasionally occur and prove fatal without hæmorrhagic effusion, and often without visible change of any kind in the brain. Such are the cases described by Dr. Abercrombie under the name of *simple apoplexy*. Farther, when we consider the inefficacy on the heart's action of slight injuries of the brain, or of injuries confined to a very limited portion of the organ, as seen in experiments on the lower animals*, and when we remember that in most cases of sanguineous apoplexy the effusion is comparatively small in quantity, and limited in its extent, we can easily understand the reason why the "*superstite motu cordis et arteriarum*," introduced by Cullen into his definition of apoplexy, should constitute so generally a negative but important characteristic of the disease. And yet, when we keep in mind the sedative effect on the heart's action of severe and extensive mechanical injury of the brain, as exhibited in the syncope consequent on a violent blow on the head, and still more unequivocally, perhaps (as in the well-known experiments of Dr. Wilson Philip, and others), in the immediate cessation of the heart's action produced by suddenly crushing large portions of the brain or spinal cord, we can have as little difficulty in understanding the nature of those other, and uniformly fatal, cases of apoplexy in which, simultaneously with loss of sense and of voluntary power, there is faintness, paleness, feebleness of pulse—i. e. a state of syncope—the patient afterwards rallying, and then becoming profoundly comatose, and where, on inspection, there is found within the head, generally either at the ventricles or at the base of the brain, a far greater and more extensive effusion of blood than usual. Such is the character of one variety of apoplexy, first accurately described in this country by Dr. Abercrombie, and spoken of by the French pathologists, when rapidly fatal, as the "*apoplexie foudroyante*;" and such the *eclaircissement* given of it by those simpler cases in pathology resulting from mechanical injuries of the

kind referred to, and to which we give the name of concussion or shock.

These illustrations might easily be multiplied; they might, also, with advantage, have been carried into more minute details, and made to bear more directly on the rationale of particular symptoms. Enough, however, has, I hope, been said to show how important a purpose the study of cases of sudden or violent death is fitted to serve in elucidating the leading symptoms and the general nature of diseases, and of those diseases especially which are the most dangerous to life, and therefore most demand our attentive consideration.

In concluding this general head, it may be remarked that, besides the interest which arises from the explanation of morbid changes and their attendant symptoms, and besides the general importance of an intelligent apprehension of their nature, it is of the utmost practical importance to obtain such a knowledge of them *at the earliest possible period*, in order to understand the danger to be apprehended in their course, to apply the proper remedies early, and with confidence, and avoid the use of those which, either presently or afterwards, might give an unfavourable turn to the case. It is obvious, however, that, as every disease "consists of a long series of changes, involving various functions of the body, and showing themselves by symptoms which vary in the progress of the case, and are modified by the circumstances of the patient, it must often happen that we shall be unable, from seeing certain only of the changes that are going on, and these only during a portion—often a very variable portion—of their progress," to decide confidently as to the nature of, or "give truly scientific names to," many of the cases which come before us.* Therefore, "certain symptoms, or sets of symptoms," certain states of the body, diatheses, or tendencies, "are often invested with a practical importance hardly inferior to genera of disease, demanding or justifying the use of remedies in many cases where it is still uncertain of what disease they form a part"—such, e. g. as headache, nausea and vomiting, coma, delirium, dyspnœa, diarrhœa, tendency to syncope, comatose tendency, typhoid

* And the essential independence of the heart's action of the nervous system, as shown by its continuance for hours together after the *careful* removal of the whole brain and spinal cord; the respiration being, meanwhile, artificially maintained.

* Brit. and For. Med. Rev. vol. iii. p. 303.

tendency, putrescent diathesis, hæmorrhagic diathesis, nervous irritability, &c.* Now, most or all of these individual symptoms, tendencies, or diatheses, may, equally with those entire combinations and successions of them which constitute particular diseases, be illustrated by reference to cases of sudden or violent death.

[To be continued.]

A CASE OF
SUPPOSED POISONING.—SUFFOCATION BY CARBONIC OXIDE.

With Remarks.

By ROBERT SMITH, Esq. Ph.D.

Member of the Chemical Society of London.

I THINK the following case of death is so connected with subjects of everyday importance, and teaches a lesson so extensively applicable, that many will be glad to know it; and all who do not know the law of nature which it alludes to, ought to know it. In the beginning of June last, a stomach and its contents were brought to me for analysis, by Mr. Robert Deane, Surgeon, Clitheroe; at the same time various articles, of food, bread, rhubarb tart, tea, sugar and spice (mixed).

The stomach was that of a girl of 6 or 7 years of age: the death occurred under the following circumstances. A mother and three children were together sleeping in the same apartment; they did not get up at the usual time; the neighbours were surprised, but at 11 o'clock in the forenoon, they determined to break open the door to ascertain the cause; three were found insensible: means were accordingly taken to rouse them. This was not completed till the evening, in the case of the mother and boy. The girl showed no symptoms of life; the remaining child, an infant, suffered less, and was heard to cry during the morning. As the symptoms did not indicate the action of any irritant poison, and as the post-mortem examination of the child did not point to any narcotic poison, I was uncertain how to proceed. The perfect calmness of all who were affected, seeming as they said to have fallen deeply into sleep as if more than usually fatigued, excluded a large

proportion of poisons: the fact that the lungs and brain were gorged with black blood did not point out any of the usual narcotic poisons, whilst the fact that both sides of the heart were empty, caused another difficulty. The first step was to examine the stomach, which was, according to the evidence of Mr. Deane, in a perfectly healthy state; the next, to examine the contents. To prevent any doubt, care was taken that every substance should be looked for at all likely to be found by means of a chemical inquiry. The bread was also examined, and a dog fed on it for three days; a cake was baked with the flour, and given to the dog, but the result indicated that the food was perfectly sound. That so many persons should be seized with illness of a nature so alarming, shewed some agent of great power to be at work, and unable as I was to obtain any clue to it from the data given; I went to the spot, to make further inquiries. The symptoms of the attack were somnolency; none of the parties affected were at all conscious of any inconvenience; having gone to bed, they remained so in deep sleep. The rooms in which they were, are formed as if to prevent any circulation of air; the lower room is small, about 14 ft. by 12; it has a stair which occupies a part of this space, also a loom, which takes up a very large portion, nearly one-third of the whole. The window is exceedingly well made, as far as the joiner work is concerned, being unusually tight, a circumstance not always seen in houses of this class. The fire-place projects from the chimney very much; the latter was thickly covered over with soot, and it smoked very much at the time; the woman had been baking, had used a large fire, and had continued till between 12 and 1 in the morning: both the windows being closed she found it very oppressive, but being very tired forgot to open the window as she intended; she left a quantity of red cinders in the grate.

In the sleeping-room, which is immediately above the kitchen, there is no opening, the window fits closely, and is almost air-tight; the ceiling is well made, there is no fire-place, no chink from which air could escape. When I visited the place, the flames came from the kitchen-fire into the

* Ibid, vol. iii. p. 303; Alison, *Outlines of Pathology and Practice of Medicine*, pp. 34, 35.

room, and were distinctly smelt; I felt convinced also, that if they continued to do so for some hours the room must have been highly charged with them. To fill the room with an injurious gas it is by no means necessary that the visible smoke from the fire should be brought up, the gas from a clear fire, consisting, as it frequently does, of a considerable portion of carbonic oxide, varying with circumstances. Nor is it at all necessary that the bad state of the atmosphere should have been perceived very strikingly on first entering the sleeping room. Taylor mentions a case in which a person is found dead, where another entering the place breathed, although with difficulty. I have been present where stupefaction occurred, whilst I breathed with comparative ease. The natural sleep would also assist the action of the gas.

That carbonic oxide was the cause of the fatal result, is further apparent from the occurrence of a similar lethargic state, on the Thursday after, in the case of the mother. Her sister slept with her; they had found the evening sultry, and put the window up one-fourth of an inch; this can scarcely be called ventilation. The sister roused her with difficulty, whilst the former had a severe headache, throbbing of the back of the neck and head, and oppression of the chest; was pale and unwell in the morning.

The state of the lungs—these organs being filled with black blood, shows also the want of oxygen, or of air to breathe; the brain being gorged with blood shews what is observed generally in asphyxia. The emptiness of the heart on both sides is to be remarked. Taylor mentions a similar instance, on an occasion of poisoning with carbonic oxide, or charcoal vapour, which in many states of combustion consists in a great measure of this gas.

Carbonic oxide is lighter than common air, which would give it a tendency to rise, besides the tendency which it has to rise from being heated. The state of the parties, the state of the weather, the symptoms of the attack, the very fair complexion, and seemingly delicate constitution of the woman, being also taken into consideration, must remove any doubt as to the cause of the accident being the accumulation of carbonic oxide, or in other words, the want of ventilation.

It may be objected, that the infant was the least affected; but this cannot be considered as sufficient; the effects seem to depend very much on the constitution of the individual and on the temperament; besides, children bear often with great ease an atmosphere intolerable to an adult. The child cried very much, a circumstance which no doubt would tend much to keep it unaffected.

In looking at the cottages of this part of the country, I was sorry to observe that ventilation was so little attended to; the windows are not in general sashed, and when so, are little made use of. The importance of this subject is now becoming too well known to be lightly treated, and I hope that this will serve as a warning to others.*

Manchester, 1845.

ANALYSIS OF FUSIBLE CALCULI.

FUSIBLE calculi are formed of the compound phosphate of ammonia and magnesia, mixed with phosphate of lime. The analysis of the phosphates, when separate, is very simple; but the process becomes more complex when they are mixed. It has been commonly recommended to separate them, by digesting the fusible (or mixed) calculus finely powdered, in acetic acid, which dissolves the phosphate of ammonia and magnesia (triple calculus) and leaves the phosphate of lime (bone-earth). The fusible are very liable to be mistaken for the triple calculi. In a late number of the *Lancet*, Liebig remarks, that both species are similar in appearance;—their surface is generally rough, and they have internally an earthy or chalky character, very rarely exhibiting a crystalline structure. When boiled with potash, ammonia is evolved from both, and both are easily dissolved by diluted nitric or muriatic acid. Liebig recommends the following process for distinguishing these calculi. Dissolve in a diluted mineral acid, render this feebly alkaline by ammonia, then add acetic acid to re-dissolve any precipitated phosphate. If chloride of iron be now added, and the liquid boiled, the whole of the phosphoric acid will be precipitated under the form of phosphate of iron. The lime and magnesia may be discovered in the filtered liquid in the usual way. If oxalate of ammonia should give a precipitate, this would indicate the presence of phosphate of lime in the calculus, and show that it belonged to the mixed or fusible variety.

* The case came before Mr. Brown, coroner of the West Riding of Yorkshire; the jury decided according to the above evidence.

CONTRIBUTIONS TO THE PHYSIOLOGY OF THE HUMAN OVARY.

Second Series.

BY CHARLES RITCHIE, M.D. Glasgow.

[Continued from p. 811.]

X.—Theory of Menstruation.

THE reasoning of many at present on the connection of menstruation with the emission of the contents of the ovarian follicles, resembles that employed formerly on the relation of impregnation to what are termed corpora lutea; for, as then, the *post hoc, propter hoc* argument was universally proceeded in by De Graaf and his followers, the corpora lutea discovered in the ovaries of animals after fecundation being regarded as the necessary results and indubitable proofs of that event, to the exclusion of the rut which went before; so now, because this latter condition in animals is always, and the process of menstruation in women is usually, succeeded by the rupture of some of the vesicles of the ovaries, these states are often considered as being undoubted consequences of the periodical extrusion of ova, to the shutting out of view of the independent vital powers of the ovaries, existing antecedently to both, and of which they are merely correlative effects.

It might be shown that the hypothesis now referred to has no support in the facts even which have been supposed to demonstrate its truth, but in effecting this, it would be needful to institute a minute investigation of published cases as invidious as it would be tedious, and which negative evidence, besides, is happily unnecessary, possessed as we are of the knowledge that the ovaries are* sometimes filled with

mature vesicles, and that ova are being constantly extruded in every form of amenorrhœa, and during the normal absence of menstruation, and, also, that this latter function is* often accomplished without the rupture of an ovarian follicle, and sometimes even†, for a limited period at least, when one or both tubes are impervious.

The effect of the‡ congenital absence of the ovaries, or§ of their artificial removal, in preventing or destroying menstruation—the fact, that symptoms of an ovarian misus without hæmorrhage|| have been remarked in women born without a uterus, but possessed of well-developed ovaries, and, again, the establishment sometimes of a periodical vaginal hæmorrhage¶ in cases of extirpated uterus; and, on the other hand, the correspondence which is** often observed between the increased development of the pilous tissue subsequent to the natural or abnormal cessation of the menses, and those changes†† in the analogous structure which occur in young birds on the excision or destruction by disease of the ovaries, all appear to be so many good grounds for believing that the ovaries are, in some way or other, essential to menstruation.

The periodical turgescence and enlargement of these bodies before and during the flow of the menses, which may often be seen in women with irritable ovaries, and in cases of ovaritis, and of the different forms of encysted disease, and of suppuration of these glands; the monthly anasarca of the lower limbs, a consequence apparently of venous congestion, which is often found to accompany menstruation; and

* Second Series, *passim*.

† Idem, Part I. Sec. II. 8. De la Menstruation, par Brierre de Boismont in Mem. de l'Acad. Roy. de Méd. tome neuvième. Ed. Med. and Surg. Journ. Vol. 53, p. 60-1. Lancet, for March 1, 1845.

‡ Lectures on Midwifery, by Gooch, Chap. I. Sec. 5. Lectures on Midwifery, by Lee, p. 40.

§ Pott's Surgery.

|| Elliotson, in Encyclop. of Pract. Med. Vol. 3, p. 226.

¶ Dict. des Sc. Méd. tom. xxxi. p. 219. Platu, Obs. Libri. tres, 1613, p. 718. Baxter, Ann. de Liter. Med. Etrang. à Gand. t. xv. p. 346. Langenbech de totius uteri extirpatione Gollin. 1842, p. 3, note 2: quoted by Chereau, Mal. des Ovaïres, p. 49. Bischoff, in MED. GAZ. Jan. 3d, 1845, p. 448-9.

** Burien de fœminis ex suppressione Mensium barbaris, quoted by Chereau. Hippec. Sect. vii. Lib. vi. p. 297. 55, and 301. E. F.

†† Yarrel, in Memoirs of Linnæan Society, quoted by Seymour.

‡‡ Natural History of Selbourne, pp. 93, 116.

* ———, a robust girl of 16, with a well-formed circular hymen, but who had never menstruated, died on the sixth day of typhus, with softening of heart and large effusion into pericardium, but no adhesions. Ovaria covered with several mahogany-coloured points, in one of which was a capillary-sized foramen, which led into a Graafian vesicle of about the bulk of a small grape, in which was a little blood. After some hours' immersion in a solution of nitre, the peritoneal coat of the ovaries was seen to be slightly abraded in the situation of the remaining discoloured points; on cutting into which a highly injected, turgid, and diaphanous vesicle, generally of the size of a pea, was brought into view under each spot, and numerous other follicles, some equally large and others smaller, were observed in other situations under the stroma of the glands, but not having any stain or abrasion corresponding with them in the peritoneal coat. See also First Series of Contributions, *passim*.

the remarkable engorgement of the ovaries, which is ascertained uniformly to precede and attend the catamenia in a case of tumor of the uterus, with healthy ovaries, which is known to the writer; together with the increase in volume,—also observed* to have been undergone by the sound ovary in an inguinal ovarian hernia, at every flow of the menses, and the almost total disappearance of the gland on any occasion when the menses were abundant; united with the fact, that, in certain cases of amenorrhœa from disease of the ovaries, the menstrual discharge is sometimes restored immediately on the increase of the capillary circulation of the enlarged ovaries, which is induced by a course of mercury, are, again, each of them, circumstances which indicate that before and during menstruation the ovaries are the seat of an increased vital activity and phlogosis.

The facts already recited† of the presence of menstruation for successive periods without the evolution of an ovum, and that mature ova, on the contrary, are often extruded without menstruation, forbid the supposition, either that this monthly congestion of the ovaries is caused by the descent of an ovum into the tubes, or that the latter event, although the usual, is therefore the invariable, or always even, in relation to time, the immediate effect of the former state. In quadrupeds, again, the bursting of the ovarian vesicles does not take place for four, five, or more days after the commencement of rut, and impregnation in the human female, as every accoucheur knows, does not occur earlier, in a majority of the cases, than a fortnight subsequent to the disappearance of the menses, while in ‡ multiplied examples it happens indifferently on every day of the monthly interval; the menstrual vessels lining the uterus, also, remain generally as long as from ten to fourteen days* after the discharge has ceased,—thus indicating that their function of affording a nutrient nîsus to the ovum may not be accomplished even at that late period; while the cases which have been adduced by dif-

ferent authors, of ovaria presenting a hole in their coats instantly on menstruation, are often, in reality, specimens only of Graafian vesicles, which have been discharged antecedently to the last catamenia, such openings being* frequently persistent for three months even after their occurrence, and the granular matter of the corpora menstrualia remaining vascular and succulent sometimes for a much longer interval.

It seems greatly more in accordance, therefore, with the natural and obvious interpretation of what is known on this subject, instead of attributing the menstrual augmentation of energy and circulation obtained by the ovaries, to a mechanical cause, such as the irritation, whether of a ripe vesicle or of a corpus luteum, to regard it as the result of a strictly independent or primary vital power, possessed by the ovaries themselves as individual organs, or, in other words, as the fruit of their own proper functional action.

A very common form of amenorrhœa in large towns happens in healthy young women immediately on their arrival from the country. In these the suddenness of the affection during robust health, forbids the notion that it can arise from a want of mature ova within the ovaries; and, when taken connectedly with the improvement of such cases, and of those of the chlorosis of cities, on their removal to a pure and dry air, it would suggest, rather, that the true cause is to be found in a sudden depression of the general and local vital powers of the system, the effect of a deteriorated atmosphere. The permanent extinction of menstruation, again, which the writer has seen effected all at once by depressing moral causes, in a female under thirty, parallel instances of which must occur to most readers, seems referrible to a similar lesion of the general powers, and not to destruction of the ova, as these, although in an imaturated state, continue to be largely secreted in every form of amenorrhœa from disease, often in ovarian cells of medium size, and well-organised and vascular coats; while in the amenorrhœa of gravidity and lactation such vesicles are frequently so matured, that about thirty-three per cent. of all lactating women

* Verdier, *Traité des Hernies*, 1840, p. 394.

† First Series, *passim*. Second Series, Sect. ix.

‡ Merriman's *Synopsis*: Introduction. Dr. Murphy's *Tables*, in *Dublin Medical Journal*.

* First Series, *passim*.

* First Series, *passim*.

become pregnant in that condition, and the writer has known repeated examples of females becoming pregnant within from four to eight weeks after their deliveries at the full term. Nor can it be said that in the cases of morbid absence of the catamenia referred to, the nervous lesion suspended menstruation, rather by arresting the development of the Graafian vesicles, than by lessening the organic power of the ovaries, for, in the examples of congenital absence of the uterus, attended with a regular menstrual effort, which are recorded, it is certain, that, owing to the physical necessity for their discharge into the cavity of the abdomen, which obtained in these cases, the vesicles of the ovary must have consisted only of fragile structureless cells of the most minute size, and totally incompetent to the production of the periodical nixus which is yet declared to have existed.

In addition to these considerations it appears inexplicable, on the principle simply of a distinction of species, that while the escape of one, or at most two ova, should as is alleged, kindle up such an amount of vascular excitement in woman as to give rise to a sometimes profuse sanguineous discharge, which continues from three to seven days, the rupture of a dozen of vesicles at each ovulation of many of the inferior animals should not be attended with the same effect.

The fact, again, that, although the ovaries may be full of mature ova without the superinduction of the menses, that this profluvium is never habitually performed without the co-existence of fully developed vesicles; and also, that menstruation when permanent, is always accompanied by linear or crucial lesions of the ovaries, indicative of increased powers of absorption in these glands conjointly with that condition, and of additional facilities being thus afforded for the rupture of the dense structures of the fully organised follicles of the menstruating woman by menstruation itself, would fully warrant the supposition that the menstrual orgasm is rather a cause of the maturation and discharge of the Graafian vesicles, than an effect.

Taking into view, therefore, these various elements, it would appear that the arguments in favour of the bursting of a Graafian follicle as the cause

of menstruation, proceed on the fallacy of mistaking an accompanying phenomenon, and in some sense an effect, for the cause; and, without attempting any explanation of the fact itself, but esteeming it as, in the present state of our knowledge, a strictly ultimate one, the writer presumes that menstruation and the elimination of ova are equally functional phenomena of the ovaries, dependent on their specific vital action as glands;—this action in the healthy non-gravid and non-lactating woman sustaining a periodical exaltation of power which extends to the nervous, vascular, and absorbing tissues of the ovaries, occasioning the maturation and discharge of their vesicles, and to the uterus and vagina, giving rise to the extrusion of deciduous vessels and to the menses.

It is no objection to this view that uterine hæmorrhagic discharge sometimes occurs in circumstances which appear to preclude the pre-existence of any functional effort of the ovaries, and that such discharge often possesses all the ordinary properties of pure blood, so that sometimes, on dissection, the blood is even seen to proceed from the open mouths of the uterine veins, and not from arterial villi. Thus the menses, as has been imagined, sometimes return unexpectedly at other than the normal periods; as in nervous females, when the circulation of the right side of the heart has been temporarily impeded by sudden fear, or that of the abdominal cava by tight lacing or other obstruction; or they appear, as is believed, in states of disease in which they could not have been anticipated, as in permanent hindrances to the pulmonary circulation attended with dilatation of the right heart; or in destruction of the healthy structure of the ovaries by diseases accompanied with great morbid enlargement; but in all such cases the excretion from the uterus must be regarded rather as pathological than as catamenial, and the effect of an abnormal regurgitation of the blood in the open uterine veins, than as that of the healthy functions of the ovaria. The frequent intermixture of both arterial and venous blood with the ordinary menstrual excretion, again, which may be asserted to happen in women with profuse menstruation, is easily explicable on the principle in the one case of

the operation of an unnatural intensity of the proper catamenial orgasm, and in the other, on that of a disordered irritability of the muscular fibre of the uterus, retarding the return of blood in its veins.

[To be continued.]

CASES AND OBSERVATIONS,

By G. F. STICKINGS, Esq.

I. *On the use of Croton oil in the treatment of Ascites.*

M. T., 40 years of age, the mother of a large family: had been ill two months prior to my attendance; the abdomen had increased in size rapidly, and contained a great quantity of fluid. She was labouring under the usual symptoms consequent upon distension. I adopted the usual course of treatment in such cases; no benefit, however, resulted from it. Believing nothing short of an operation would remove the fluid, I suggested the propriety of her submitting to it, but she would not consent although repeatedly urged. At the end of three months from my first visit, my patient, finding that all the symptoms became much more urgent and distressing, at length submitted to be tapped. The operation was performed without delay, and I drew off twenty-five pints of fluid of a deep green colour. After its removal I made a very careful examination, but could discover no organic disease existing, and could not arrive at any satisfactory conclusion as to the cause of the effusion. I immediately adopted an active course of treatment after emptying the abdominal cavity, but I was much disappointed in finding that effusion again took place rapidly; for at the end of a week the abdomen was nearly as much distended as before the operation. She was subject to obstinate constipation, and I had recourse to croton oil, one drop of which I gave in a pill three times a day, and after a few successive doses I was much gratified to find that it had not only produced a decidedly beneficial effect on the bowels, but on the kidneys also. At my next visit (two days after), I found that the fluid had much diminished in quantity. Seeing that so favourable a change took place in so short a period, and ascribing it en-

tirely to the croton oil, I continued it in the same doses daily for a month, at the end of which time all traces of the disease had completely vanished, and my patient has remained well up to the present period (now a year since), without shewing any symptoms of a dropsical character. It may be worthy of remark, that the daily use of the croton oil in this case did not produce a drastic purgative effect, but simply kept up a steady action on the bowels and kidneys. I have had no opportunity of testing its value in similar cases, none having fallen under my notice. Perhaps it may be well to observe, that I attended the daughter of the above female, a girl of 15 years of age, a few months before, with ascites, which yielded very readily to appropriate treatment, but had no effect on the mother.

Probably some of the numerous readers of the MEDICAL GAZETTE may have employed the croton oil in cases of dropsy; if so, I should like to learn with what success.

2. *On Tincture of Hæmato in Hæmatemesis.*

About three months ago, I received a hasty message to see a female, æt. 66, the mother of a very large family, who was supposed to be dying from having just ruptured a blood-vessel, and bleeding profusely from the lungs. On my arrival, it proved to be: case of hæmatemesis, and the quantity of blood vomited exceeded two quarts of a dark colour and grumous. I found the woman just recovering from a fit of fainting; she was exceedingly pale, and the features much contracted. The patient (whose general health was bad) had felt more than usually unwell for three days prior to the attack of hæmorrhage, with the usual preliminary symptoms of hæmæmesis. Having heard much of the value of matico in cases of hæmorrhage, and considering this to be a favourable case to test its value as a styptic, I had recourse to it. A tea-spoonful of the tincture was administered every three hours in a glass of water. At my visit the following morning, I learned that the patient had had another fit of vomiting shortly after I had left her the previous evening, before taking the medicine. In this attack, at least a quart of blood of the same character as the former had

been discharged; and once during the night the hæmorrhage returned in a slight degree, but from that period, after taking the medicine, no further hæmorrhage occurred. The tincture was continued in the same doses, but at longer intervals for three days, with a light nourishing diet; and under due attention to the bowels, by the use of mild aperients, she soon recovered her usual state of health.

2. Case of Placenta Prævia.

In the early part of May last, my assistance was requested by a midwife who was then in attendance at a labour case. Hæmorrhage had been going on from its commencement, and as the labour advanced, so did the hæmorrhage increase. The state of the patient on my arrival was as follows: she was insensible and completely blanched; the pulse scarcely perceptible; extrinetics cold; the loss of blood from the uterus had been excessive, but the hæmorrhage at this time had ceased. The state of the poor woman at this juncture was most alarming, and my impression was that she would rapidly sink. With much difficulty I administered some brandy; soon after this, finding some slight symptoms of returning animation, I made an examination per vaginam, and discovered part of the placenta detached and external to the os uteri; the remaining portion adhering to its neck. Finding that the poor woman gradually improved from the effect of the stimulant, and fearing that further loss of blood, however slight, would prove fatal, I without hesitation removed the remaining portion of the placenta (about a third); it was detached without difficulty; more brandy was then given with much benefit. On the return of the uterine pains I ruptured the membranes, and in about twenty minutes after the discharge of the liquor amnii, a dead child was expelled. This was the sixth pregnancy of my patient, and all her previous labours had been easy and of short duration. I remained with her four hours after the termination of the labour, for the purpose of watching her closely, and then left her comparatively speaking comfortable. With the exception of extreme debility, she completely recovered, without one bad symptom following. I regret that I did not see

this case at an earlier period, for I feel confident that had the placenta been detached from the mouth and neck of the uterus sooner, the poor woman's life would have been in less jeopardy.

This case is an additional proof of the absolute necessity of preventing uninstructed persons officiating in the midwifery department of the profession.

Lenham, Kent, September, 1845.

OVARIAN DROPSY.

In a case of dropsy, supposed by T. Latham to be seated in the ovary, tapping was performed one hundred and fifty-five times, and five thousand seven hundred and twenty pints of fluid evacuated, and in this way the life of the woman was prolonged for several years (*Philosoph. Transact.* vol. lxxix. part i. p. 54, 1779). In the same collection (vol. lxxiv. part ii. p. 471, year 1784) is the history of a case of dropsy of the ovarium, communicated by Ph. Meadon, Martineau, and John Hunter, which is remarkable for the number of times that tapping was performed, and especially for the quantity of fluid evacuated. The patient underwent eighty operations in the space of twenty-six years, and furnished six thousand six hundred and thirty-one pints of fluid. In the second volume of the *Medical Communications*, it may be seen that Ford tapped the ovary forty-one times at very close intervals, because the collection formed with constantly increasing rapidity. These operations furnished two thousand six hundred and eighty-six pints of serous fluid.—*Colombat on the Diseases of Females; Meig's Translation.*

PULMONARY DISEASE CONSEQUENT UPON TETANUS.

SOMETIMES it will happen that a patient recovers from tetanus, at least so far as the flexibility of the muscles is concerned, and he is able to go about; but it is a remarkable fact that those persons often die of affections of their chest. In one case I saw, that of a young man whose arm had been dreadfully shattered by the machinery of a mill, and who appeared to have perfectly recovered from the tetanus, there came on a cough soon after, and at each cough he threw up about a pint of fluid resembling exactly in colour the wine that is returned from the bag of a hydrocele which had been injected for the radical cure, and he continued to cough up this for three days, and then died. In another that I saw, who had recovered from tetanus, the pulmonary symptoms were those of ordinary phthisis.—*Professor Colles' Surgical Lectures.*

MEDICAL GAZETTE.

FRIDAY, SEPTEMBER 26, 1845.

WE have already made some remarks on the new regulation respecting Practical Anatomy, lately issued by the Royal College of Surgeons,* and in our last number we printed the circular letter which the Council has addressed to all the Demonstrators of Anatomy in the kingdom†. The execution of the order is to be enforced by a penalty on the demonstrators who decline complying with its terms. In all schools where men occupying these offices have hitherto done their duty, and have only given certificates of the performance of dissection in those cases in which it has been *bonâ fide* carried out, there will be no objection to a return of this kind, the principle of which is so obviously beneficial to the proper study of anatomy. The Council of the College are, it appears, now determined not to remain contented with a certificate expressed in *general* terms, which we fear has been often incautiously given to men who have seldom handled a scalpel; but they descend to particulars, and, in a form which is somewhat loosely worded, they require to know the exact parts of the body which each student has dissected. A demonstrator who might, without any great sacrifice of conscientiousness, certify that a pupil had attended two courses of dissections, when the whole extent of his practical anatomy may have gone no further than laying bare the muscles of the upper extremity,—would assuredly pause before he certified that particular parts of the body, injected or uninjected, had been dissected so many times by the pupil! Of late years the supply of subjects has

been so limited, that upper and lower extremities admit of being counted; and the Inspector of Anatomy might be able to throw some light upon the exact number of subjects supplied to the pupils of particular schools. We strongly suspect that the Council have been led to adopt their new “resolution” from some information of this kind; and we believe that if the books of the Inspector were produced, they would supply very curious information upon the small amount of dissection performed in certain schools, where no difficulty has been hitherto experienced in procuring certificates. It is time that an end should be put to these improper practices: they operate unfairly to schools which are honestly conducted, and unjustly to those industrious medical students, who, at a sacrifice of time, health, and means, are to be found in the dissect-room early and late. The facility with which certificates of dissection for the College have been in some cases obtained, has we believe led to a great neglect of practical anatomy,—a result aided on the one hand by the dearth of subjects, and on the other by the scandalous system of gridding. Advertisements inform us that gentlemen are *prepared* in a few weeks for a certain fee to pass their College-examination: the following out of the regular course of study, except as a matter of form in order to obtain the required certificates, is regarded as unnecessary; and the candidate, thus provided with mere superficial knowledge, acquires the same professional status as the hard-working and meritorious student. The change now contemplated will be in some respects a check on the acquisition of anatomy from plates, or from the mere exercise of memory on particular forms of catch-questions; but we think the College would do wisely to go still deeper to the root of the evil, and draw a distinction between

* Page 875.

† Page 916.

bonâ fide teachers and notorious preparers or grinders. Let them regard with suspicion the certificates of men who undertake, not to teach anatomy and surgery as a means for affording sound professional knowledge, but to enable the indolent student, at the lowest fee, in the shortest time, and with a minimum amount of study, to pass safely through the barrier of Lincoln's-Inn-Fields. We have been informed that statistical tables are kept of the passed and rejected among the pupils of these College and Hall-preparers, and these tables serve to indicate their respective merits in the manufacture of Surgeons and Apothecaries. The system of grinding cannot perhaps be altogether abolished;—but by a regulation such as that just issued, and by making the examination more practical, the College will put an effectual check upon the proceedings of these individuals.*

We have now a few words to say on the form of the Return. Rumour ascribes it to the pen of a member of the Council, who regularly passed through the grades of demonstrator and lecturer, and had been long accustomed to work in a dissecting-room. If this be true, it appears to us that he must have entirely forgotten the plan usually pursued in the dissection of the body. In the Return, among the parts “dissected,” we find a column specially devoted to the “brain, spinal marrow, and nerves.” We object to the dissection of these parts being made an imperative condition in a form of this

* That certificates for the College and Hall are in many cases made a matter of bargain and sale, irrespective of the *attendance* at lectures, as proofs of which they are received by the licensing bodies, is we believe a fact well known to all who are acquainted with the present system of medical education. Mr. — announces that he guarantees the diploma of the College or Hall for a certain sum, which is fixed at about one-half of the cost of a good medical education; while Dr. — wishing to out-do Mr. —, advertises to teach a method of evading the rules of the Colleges upon still lower terms. See page 953. Some of these men are impostors, who profess more than they can perform, but their existence assuredly indicates the rottenness of the present system.

kind. The brain is a complicated organ; it can only be with any profit to the student dissected and described by the demonstrators; and, if we recollect aright, there were very few cases formerly in which the whole of the head and neck was taken by one student:—the great want of subjects in the present day, would render the dissection of this organ by each anatomical student, a sheer impossibility. Again, the spinal marrow in the olden time was exposed and dissected twice a year by the demonstrators for the purposes of the anatomical lectures; and it is obvious that no return can be made for this organ, except in the cases of those students who are willing to sacrifice the whole of a subject for this particular purpose. The spinal marrow, however, is the common property of those students, among whom the trunk is divided. With a great scarcity of subjects, it is not likely that muscles, blood-vessels, and nerves, will be destroyed for the purpose of making an examination of this organ: and if its dissection be postponed until these parts are dissected, it will not commonly be in a state to render its examination of any practical value. This and the next column in the return might form one, under the head of nerves and blood-vessels, the parts of the body actually dissected being specified: while the brain and spinal marrow might be left to be dealt with according to the usual dissecting-room rules.

The last column is unintelligible. “*Relative situation!*” It would almost lead us to suppose that the form had been drawn up by the secretary or beadle of the College, instead of by a member of the Council, conversant with anatomy. Inquiry has been made respecting its meaning. The only answer we can give, is, that it corresponds to what lawyers term “surplusage.” It is surely impossible for a man to dissect muscles, ligaments, viscera,

brain, spinal marrow, nerves, and injected vessels, without at the same time acquiring a knowledge of the "relative situation" of parts! We always thought that this was a necessary accompaniment of dissection, and that anatomy without it, was nothing. Is it possible for a student to dissect with common care the muscles and vessels of the thigh or neck, without having their relative situation simultaneously stamped upon his mind? By its being placed in a distinct column, and therefore requiring a distinct return, the natural inference is, that the Council of the College regard "relative situation," as a branch of dissection, distinct from that of the whole of the structures of the body. If this inference be incorrect, we think the Council are bound to furnish some additional explanation of its meaning. To our knowledge it has puzzled more than one good anatomist.

While thus providing for proper instruction in practical anatomy, it is to be hoped that some measures will be taken to ensure a sufficient supply of subjects. The return will necessarily be blank with regard to many deserving students, who may not have it in their power to procure subjects; and the Council are equitably bound, if they act upon this regulation, which we believe will be attended with positive good, to draw a distinction between those who from a deficient supply are unable to carry out their desire of learning anatomy by actual dissection, and those who from indolence or indifference, entirely neglect this important branch of their studies.

WOUNDS OF THE ABDOMEN.

CARE must be taken that while you are, as you suppose, returning the intestines back into the abdomen, you are really not pushing them into the sheath of the rectus muscle. Do not think this an unnecessary caution; I have seen two-thirds of the bowels protruded, pushed up into the sheath of the rectus before the mistake was discovered.—*Professor Colles's Lectures.*

Reviews.

A Dictionary of Practical Medicine, &c.
By JAMES COPLAND, M.D. F.R.S.
Part 10; being Part 1 of Vol. III.
(pp. 144.) London, 1845. Longmans.

AFTER some delay, probably due to the labour required for the careful selection of materials, we have to announce the appearance of the tenth part of this valuable Dictionary. This part, which extends from the word "Palate" to "Pestilence," comprehends, owing to the smallness of the type, a large amount of valuable information. The most important articles are those under the heads of "Paralysis" and "Pestilential cholera." Much care appears to have been taken in the preparation of the latter article; and in about eighty closely-printed columns we have a complete history of this fearful malady, freed from those irrelevant details and biassed views which characterised the early monographs on this disease. The numerous works referred to for this article alone would furnish a good apology for the delay which has taken place in the publication. The time required for a careful condensation of facts, and a fair and impartial examination of opinions, can only be appreciated by those who have laboured with the pen.

The author's experience on the subject of pestilential cholera is based upon observations made in the country of its growth, as well as in more temperate climates. He has also suffered severely from it in his own person. Many errors respecting the disease have been entertained and widely disseminated: first, with regard to *the origin and nature of the distemper*. Many supposed it to be the common spasmodic cholera of warm climates in an epidemic form merely, but this is opposed to the experience of those who have had an opportunity of observing it in India; and even the natives,

"Instead of looking upon it as an aggravated form of cholera, regarded it, wherever it broke out, as an unheard-of pestilence and scourge, and at its appearance whole villages and towns were deserted in consternation to escape its infection; whilst the greater part of the English practitioners, having been taught to consider cholera to consist of

purging, vomiting, and spasms of the lower extremities, and finding these symptoms present in the distemper they were called to treat, believed it to be that disease merely in an aggravated form, without taking into consideration much more important phenomena presented by it, and without sufficiently adverting to the fact, that these symptoms are often slight, or nearly altogether wanting, in the most severe cases." p. 99.

A *second* error, which has been extensively propagated, is, that the malady never exhibited any proofs of *infection* in the East. A *third* is, that it is caused by some unknown condition of the *air*. The author admits that the pestilence is greatly aggravated by certain states of the air, to which the term epidemic is strictly applicable; yet there seems no doubt that it is propagated, and prevails to a certain extent, independently of an epidemic concurrent influence. He believes that, like eruptive and typhoid fevers, it is infectious, and is not essentially epidemic; although it will, during favourable states of the atmosphere, assume epidemic characters, and be modified accordingly. All experience shows that it is a specific disease, arising from a specific cause, but promoted and disseminated more widely by various concurrent causes, among which epidemic or unhealthy constitutions of the air*, dirty, crowded, and close apartments, and crowding of the sick, are the most prominent.

The progress and mortality of the disease are next traced. The number of cases which occurred in London were 11,020, and the deaths were nearly *fifty* per cent.; being 5,273. The mortality was greatest in those attacked above forty years of age, and very few cases, comparatively speaking, occurred among those individuals who had not reached the age of puberty. A strange notion prevailed among some who wished to assign a purely local origin to the malady, that it occasioned no increase in the mortality of the metropolis. That the cholera was, however, a superadded disease, was clearly proved by the deaths from it being more than equivalent to the surplus mortality in the metropolis during the period of its prevalence. The tables here compiled furnish us with the following results. Those parts of

England (including the metropolis) and Ireland which were visited by the disease had a population of about four millions and a quarter: the number of cases of cholera amounted to 116,602, and the number of deaths to 41,749! The description, diagnosis, causes, and treatment of cholera, are very ably handled. A large space is assigned to the consideration of its infectious nature, and the author has accumulated here many new and interesting facts, which appear to us to establish, that whatever may be the effect of epidemic influence as a concurring cause, it is undoubtedly propagated by contagion. The evidence of Indian practitioners was at the time considered to be unfavourable to this view; but Dr. Copland has taken their own facts, and has obtained access to original documents which have not received a colouring from the personal views of the reporters; and we think he conclusively establishes that the reasons assigned by many of the Indian practitioners for believing the disease to result from other causes than infection, are actually favourable to the existence of an infectious property; and he remarks, that "even where they have argued against its infectious nature, they have often adduced the strongest evidence, although unconsciously, of its possessing this property." p. 109.

The reputation of this work is so well established in Great Britain and America that it scarcely requires any recommendation from us. We can only say that it continues to maintain its character; and we believe that it would be to the great satisfaction of the subscribers if it were speedily completed.

A Practical Treatise on Inflammation, Ulceration, and Induration of the Neck of the Uterus, &c. By J. H. BENNET, M.D., &c. London: Churchill. 1845. Sm. 8vo. pp. 212.

WE have here a compendious manual on a subject which has received but too little attention from the medical profession in this country, although it has been industriously explored by our continental brethren. Diseases of the neck of the uterus are, we believe, much more frequent than is commonly supposed; they are either borne in silence, or if a female be induced by the severity of her sufferings to con-

* See the remarks of Dr. Prout on this subject, p. 817.

sult a medical practitioner, then the real nature of the disease, owing to the difficulty of making an examination, is often overlooked. Dr. Bennet thinks that medical men are backward in enforcing the necessity for an examination. This may be true to a certain extent, but the customs of the English and French are widely different in this respect. We remember, some years since, being surprised at the readiness with which, for a few francs, the French women of all ages hired themselves daily at the *Lécons Orales* of Capuron, Hatin, and others, to undergo the *toucher* by large classes of students. Such a practice would hardly be tolerated in England, and we suspect that this is only a type of a still stronger feeling, however erroneous, which prevails among the upper classes of this country, of the indelicacy of these examinations. The substance of this treatise has been already laid before the profession in a series of papers published in the *Lancet*. It may be regarded as almost a new branch of pathology, and one deserving the attention of every practitioner. We shall only remark that the subject is well treated, and illustrated by well-selected cases; and the volume itself is a neat specimen of typography.

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The Cold Water Cure: its Use and Misuse examined. By HERBERT MAYO, M.D. F.R.S., formerly Surgeon of Middlesex Hospital. 12mo. pp. 85. London, 1845. Renshaw.

We do not think that we have ever, in our editorial capacity, taken up a work for review with such painful feelings as we have experienced in regard to this small pamphlet,—viewing it as an evidence of the course both of conduct and practice which Dr. Herbert Mayo has thought proper to adopt: for the duty of all impartial medical reviewers evidently is, to attack every kind of unprofessional practice with a rigorous and unsparing hand. Still, to be under the necessity of pursuing such a course against a professional brother is always a most unwelcome task. It is impossible to avoid feeling mingled sentiments of regret and indignation, when we see a surgeon of great promise, of no ordinary ability, and holding a very prominent position in the

profession, deliberately separating himself from the ranks of his class, and adopting a line of practice which has little to recommend it beyond the false *éclat* given to it by vulgar credulity; which is evidently highly dangerous if pursued in many of the diseases for which its principal advocates employ it; and when, above all, it is quite notorious that its inventor and most of the propagators of his doctrines, are men entirely ignorant of the commonest principles of medicine; in fact, empirics of the most ordinary class.

Who could have imagined it possible, a few years since, that a member of the Council of the London College of Surgeons, a fellow of the Royal Society, a hospital surgeon, and a successful teacher of pathology, would suddenly, but deliberately, become the active disciple of a system which has recently been introduced by a rude and totally uneducated peasant? The idea would have been ridiculed and scouted as both improbable and absurd. But this has actually happened; and we can only explain it by supposing that bodily suffering may have acted so powerfully in depressing the natural energies of the author's mind, that he became ready to cling to any hope, however forlorn, which offered a prospect of relief from the malady under which he was labouring.

We should be failing in our duty if we did not warn the profession and the public of the dangerous tendency of the example which Dr. Herbert Mayo has set to others, in his secession from our ranks—the head and front of his offending being, that he has adopted and advertised a system of treatment which was introduced, and is still actively practised, by certain ignorant and unprincipled empirics: and although he may modify and adapt that system in a manner which his previous acquaintance with disease would naturally suggest, he, nevertheless, gives countenance to the practice of those who continue to employ it without those precautions or that knowledge. Besides this, he has put the first surgical Association in Europe to the disgrace of seeing one of its leading members become the proselyte and panegyrist of a common charlatan. But we do not wish to press these disagreeable considerations too

far. If Dr. H. Mayo has entered upon a wrong course, as we confidently believe he has, many painful reminiscences must, from time to time, cause him to look back as he pursues his way, and to call to mind, with feelings of regret—which it would be ungenerous to aggravate unnecessarily—the high prospects of former times, which have now passed irrevocably from his sight. We have always believed that it must have been rather the misfortune than the fault of this gentleman which led him to become a disciple of the hydropathists; and we retain that confidence in his good feeling and sense of honour, which leads us yet to expect an atonement at his hands. We believe that, even now, Dr. Mayo has not by any means a very strong confidence in hydropathy as a system of medical treatment. His work proves to us, that while he is striving to hold together and arrange to the greatest advantage the scattered fragments of good with which the plan is scantily fraught, his knowledge of the true principles of disease is rapidly clearing the delusion from his mind, and leading him to the conviction that the system can only be received in the form of the occasional adjuvant to treatment, which the majority of the profession would fully admit it to be. We confidently look forward to the time at which Dr. Herbert Mayo shall cease to consider himself a hydropathist; and we repeat, we expect from his sense of justice, that, when this time arrives, he will give as much publicity to the re-adoption of the true principles of medicine, as he has lately given to his extraordinary secession from our ranks.

INFLUENCE OF FEAR UPON THE CATAMENIAL FUNCTION.

FROM the report of Baudelocque, sixty-two women were attacked with hæmorrhage or suppressions upon the occasion of the explosion of the powder-magazine of Grenelle. M. Husson has also related the case of a woman who, at several different times, was attacked with menstrual suppressions, under the influence of claps of thunder. We ourselves observed, in July 1830, that the reports arising from the platoon firing and cannon-shot, produced the same effect in several women; amongst others in a young person eighteen years old.—*M. Colombat on the Diseases of Females; Meigs' Translation.*

Correspondence.

SUPPLY OF MEDICINES TO THE POOR IN SCOTLAND.

SIR,—I beg that you will permit me through your pages to direct attention to the fact, that by the new Poor Law Bill for Scotland, which has now come into operation, the parochial boards are “*required*” to provide medicines and medical attendance to the poor. The knowledge of this may be beneficial to many practitioners in Scotland.

The patient manner in which the burden of supplying the poor with medical aid has hitherto been borne, reflects great credit on the benevolence of the profession. It ought, however, to be remembered, that, in future, “*medical attendance to paupers gratis*” is no longer charity to the poor, but a boon to the rich who pay the assessments.

I am, Sir,

Your most obedient servant,

J. M. STRACHAN, L.R.C.S.E.

Dollar, September 13th, 1845.

PECULIARITIES OF ANCIENT TEETH.

SIR,—Through the medium of your valuable pages I would suggest to Dr. Allnatt, that in a late communication I imagine he is confounding an alleged resemblance of the molar incisor teeth of ancient Roman, Saxon, and British skulls (so frequently exhumed of late) with the usual appearance of these teeth, viz. that of being rubbed or ground, no doubt from these people being accustomed to masticate hard substances. I must state that after much observation on this point I have never seen any similarity either in the fangs or other parts of the teeth, the above-mentioned worn peculiarity of the incisors being excepted. In those skulls that have been exposed to much decay the dentine or ivory of the teeth is occasionally at the worn surfaces so removed as to leave the enamel hollow, and often barely supported by the dentine of the fang, and in some instances the whole dentine has been found removed.

ERNEST P. WILKINS.

5, Liverpool Street, Finsbury Circus.

ON THE USE OF PRUSSIC ACID IN THE TREATMENT OF HOOPING COUGH.

SIR,—Having noticed an extract in your valuable journal, taken from a correspondent of the *Lancet*, on the use of diluted sulphuric acid in the treatment of whooping cough, I am induced to state (without any objections to the use of this remedy) that extensive practice in the treatment of this distressing disease has afforded me ample opportunities of testing the use of prussic

acid—a remedy which has given more satisfaction to me as a practitioner, and more relief to my suffering patients, than any other which I am acquainted with. Should this communication be deemed worthy of insertion in your journal, I have no hesitation in saying that those who read and adopt my recommendation of this remedy, will have much to congratulate themselves on. I have been in the habit of mixing five drops of prussic acid with one ounce of simple syrup, and of this preparation I give from one to two teaspoonfuls as a dose, according to the age of the infant, every fourth or sixth hour until the spasm is allayed. With much respect,—I am, sir,

Your obedient servant,

A SUBSCRIBER.

Sept. 17, 1845.

MR. ADAMS ON FLOODINGS AFTER DELIVERY.

SIR,—I beg you will allow me a brief space in your pages to explain certain matters relative to me, which are touched upon in the communication of your correspondent, Dr. F. H. Ramsbotham, in your last number. I regret to find that a gentleman for whose professional character I have long entertained so much respect, should appear to feel aggrieved by the manner in which reference was made to him and his father, in my paper “on floodings after delivery.” In the first place, then, with regard to his case of puerperal convulsions, which he complains of being “misinterpreted or misrepresented,” I have to say, that my version of it was from memory, not having a copy of his excellent work on *Obstetric Medicine* at hand when I wrote my paper. But still, I appeal to every candid reader, whether my version of the case does not give a faithful exposition of its leading features. He complains of my having stated that he bled his patient “to an enormous amount,” by which I merely meant to say, that it was to an extent now rarely practised under any circumstance. And from his own report, it appears that his patient was “bled largely,” and the bleeding repeated twice in the course of a few hours. Three large bleedings would most probably not be less than from 60 to 70 oz. of blood. Now, if this case occurred nearly 20 years ago, as seems probable, I readily admit that agreeably to the established opinions of the profession at that time, “the bleeding was *not* carried beyond the legitimate rules established by practice;” but I do maintain, that in 1845, most practitioners of medicine would pause before abstracting blood to such an amount under any circumstances, within the space of eight or nine hours. It is to be borne in mind, however, that from 20 to 30 years ago was the age of “heroic

practice” in midwifery, and other branches of medicine and surgery; now-a-day we are not so anxious that our practice should be reputed bold, as that it should at all events be safe, agreeably to the prudent rule of Celsus, “*saltem non nocere.*” But when Dr. Ramsbotham finds fault with me for misquoting his words, and making him say “she then looked quite well,” whereas his words actually are, “I found her perfectly well and in good spirits, &c.” I must say, that in this instance Dr. R. complains without much cause.

With respect to his concluding remark on this case, namely, “that the death of this poor creature is to be explained upon the principle, that the remote cause of puerperal convulsions consists frequently, if not generally, in some source of irritation situated within the uterus, and propagated through the nervous system to the brain,” I do not see that there is any material difference of opinion between him and me on this point. He refers the fatal event in this case to irritation of the uterus, occasioned by the introduction of the hand unfortunately rendered necessary by the retention of the placenta, and I point out the case as a warning to the profession, not to repeat such a dangerous practice when it can at all be avoided.

Dr. Ramsbotham may have good ground for complaining of Dr. Churchill, that he has drawn up his tables of flooding cases unfairly, but certainly not of me for quoting them, as I do with the qualifying remark, that such statements, when unaccompanied with a detail of collateral facts, are not to be relied upon.

Instead of dwelling upon these matters, to which I cannot but think that Dr. Ramsbotham attaches an undue importance, I could have wished that he had stated more explicitly than he does, what he alludes to as erroneous in the physiological and pathological principles advocated by me in the paper referred to, and what is “highly dangerous in their practical tendency.” I make no pretensions to any very accurate acquaintance with microscopic anatomy, but still I know as much about it as to be convinced of this, that the theory adopted by me regarding the connection between the mother and the fœtus in utero, is more in accordance with the descriptions of the placenta given by Dr. Reid, Mr. Dalrymple, and Mr. Goodsir, than is Dr. Ramsbotham’s hypothesis of “patulous mouths of vessels.”

As to the pathological principle involved in the subject, it certainly would be most desirable that Dr. Ramsbotham would “bring proof,” that the hæmorrhage in question is altogether of a passive character, and that the blood exudes through patulous orifices. I have ransacked the works of

most of the standard authorities on Midwifery for proof on this point, but hitherto I must say I have found none. They all assume the hypothesis of uterine *inertia*, but none prove it. Even if it were granted that "torpor of the womb" is the proximate cause of the hæmorrhage, it surely would be most desirable to go a link further up the chain of causation, and determine what is the cause of this cause. According to my pathological doctrine the whole matter is simply explained thus: the cause of the torpor is the flow of blood, and the cause of the flow of blood is the rupture of vessels, and the cause of the rupture of vessels is lesion sustained by the soft parts of the pelvis during the passage of the child. Here the causes assigned are such as we are all cognisant of, and can deal with accordingly, but "uterine torpor" is a thing purely ideal, like the phantom of the King of Terrors, which can neither be seen, nor felt, nor guarded against.

I can assure Dr. Ramsbotham, with great sincerity, that I regret exceedingly that he should look upon my principles as "highly dangerous in their practical tendency." My only consolation is, that if a great London authority of the present time be against me, an immortal name of a by-gone age is on my side. I allude to Smellie, who practised for forty years in London and its vicinity, upon the principles now advocated by me, and *never lost but one patient by flooding after delivery*. But it is not Smellie alone; Mauriceau, Motte, Chapman, Denman, (to say nothing of the antiquated names of Celsus, Moschian, Soranus, and other worthies of the olden time), and in fact, all the obstetrical authorities down to the present generation, treated floodings on the principles which I am now endeavouring to revive; that is to say, they treated them upon the principle of tranquillizing the system, instead of throwing it into the greatest possible state of perturbation, as is now done.

It will not do for the advocates of the present mode of practice to draw the inference, that seeing it has now been sanctioned by general usage, for the space of thirty or forty years, it must be a safe and good practice; for, unfortunately, it can be but too easily shown that other methods of treatment, now admitted to have been highly dangerous and fatal, have, even within the recollection of the present generation, enjoyed a longer date of professional favour. Many of us, for example, can remember the time when almost every case of knee-joint disease, then called white swelling, was held to warrant and require amputation of the limb. The time too is not far distant when almost every severe injury of the head was treated by trepanning the skull. I need not

say that professional opinion has greatly changed of late years, upon both these points of practice. Now the indiscriminate introduction of "the clenched hand" in uterine hæmorrhage I verily believe to be more painful and more dangerous than the application of the trephine to the cranium, and I should not wonder if I should live to see the time when accoucheurs will be as guarded in having recourse to the one mode of practice, as good surgeons now are in applying the other.—I am, Sir,

Your obedient servant,

H. ADAMS.

Banchory, September 16th, 1845.

[Our correspondent will, we are sure, excuse us for omitting a few words in his letter, which, while they had no relation to the argument, might be construed as personally offensive.—ED. GAZ.]

Medical Intelligence.

COURT-MARTIAL UPON AN INFERIOR MEDICAL ATTENDANT IN THE INDIAN ARMY FOR DRUNKENNESS.

At a general court-martial holden at Kurachee, on the 17th of June, 1845, assistant Apothecary and steward Francis Lonsone was brought to trial on the charge of being drunk in his quarters in camp, between the hours of 7 and 8, on or about the night of the 6th of June, 1845. The Court found the prisoner guilty of the charge preferred against him, and adjudged him to be suspended from rank and pay for a period of six months.

This sentence having been submitted to, the governor of the district received the follow comments from that officer.

"I am sorry to revise the proceedings, but I hope that the Court will take into consideration the feelings of the troops when they see a man so slightly punished for drunkenness—a man who is intrusted with the compounding of medicine, among which are deadly poisons—a man intrusted also with administering those medicines to the soldiers. The latter are not on the footing of officers who are able to refuse the prescription or the medicine offered by a drunken man, but the private soldiers are obliged by the necessary rules of the service to receive what is ordered, and dare not refuse what is given, by one who has voluntarily deprived himself of reason. Will the Court force back into the hospital such a culprit, and place the lives of brave men in his hands? Will the Court thus oblige the soldiers to take the medicine, or the poison offered, or rather, I should say, forced upon him by this drunken culprit? I ask the

members of the Court to place themselves in the position of the families of soldiers, as well as in that of the men, and ask themselves what would be their feelings, if they saw those nearest and dearest to them lying on the bed of sickness, and a drunken person like the prisoner enter their bed-room to prescribe, to compound, or to administer medicine? I cannot believe that any member would, in such a case, consider six months suspension an adequate punishment. Let the members of the Court be apprised that the soldier sees all those things clearly, and reasons soundly upon what he sees. If what I have said be true, will not the Court agree with me, that to leave such a culprit in the service is to endanger the lives of the soldiers, and to shake their confidence in the protection of their officers, the only protection they can have against such criminals?

C. J. NAPIER,

Major-General, Governor of Scinde.

June 18th.

Revised sentence.—The Court having most fully taken into consideration the remarks submitted to it by his Excellency Major-General Sir Charles Napier, G.C.B., does now adjudge the prisoner, Francis Lonsone, Assistant Apothecary and Steward attached to the 2d troop Bombay Horse Artillery, to be discharged the service.

Abridged from the Times, Sept. 24th.

Karrachu, June 20th, 1845.

[REMARKS.—We believe that the whole of the medical profession will concur in admitting the justice and sound judgment displayed by the commanding officer in suggesting the above sentence. His remarks, however, disclose a feature in military discipline of the existence of which we were certainly not aware: viz. that private soldiers "*are obliged by the necessary rules of the service to receive what is ordered*" by their medical attendants. Several years since, we had ample opportunities of observing the manner in which medical treatment was conducted in Naval hospitals; and we then fully understood that no patient could be compelled to submit to any mode of treatment or operation against his will, and we cannot help believing, notwithstanding the apparent contradiction to this principle conveyed in General Napier's letter, that this humane rule is still virtually paramount in both services. It is of course self-evident that no adult person, enjoying the full exercise of his reasoning faculties, should be compelled to submit to any plan of medical or surgical treatment to which he strongly objects, providing his refusal cannot be proved to be part of a system of malin-gering, and evidently results wholly from natural repugnance to the measure prescribed.—ED. GAZ.

HEREFORDSHIRE MEDICAL ASSOCIATION.

At a Meeting of the Herefordshire Medical Association, which took place on the 16th instant, the following objections were taken to the fourth edition of the Physic and Surgery Bill.

1. It places the entire management of the Profession under the control of the government of the day.

2. The institution of a Royal College of General Practitioners, with the limited privileges it is proposed to give it, will only prove an additional complication to the Profession, without in any way elevating the rank, or promoting the interest of the general practitioners themselves.—And

3. Although recognizing as before the principle of protection, it still does not establish any summary and inexpensive remedy against illegal practice.

HENRY G. BULL. *Hon. Sec.*

UNIVERSITY OF EDINBURGH.

THE Medical Session at the University of Edinburgh will commence on Monday, November 3d.

LEICESTER INFIRMARY.

OUR attention has been called to certain proceedings which have lately taken place with respect to the Leicester Infirmary. By one party it is alleged that the medical staff is not sufficient for the purposes of the Charity,—by another, comprising those who hold office, it is contended that the Institution does not require additional medical officers. This question is so purely local that we do not feel competent to decide between these conflicting opinions. The matter might soon be decided, by observing whether the patients are or are not neglected by the appointed officers of the Charity. It is further alleged that there are no fixed hours of attendance, and that the doors of the Infirmary are closed against the younger members,—so that in a large and populous town there is no opportunity for students to acquire experience in the treatment of disease. On these matters there can be no difficulty in expressing an opinion. There should undoubtedly be fixed hours of attendance for the officers of all Infirmaries: and if private practice be allowed to interfere with the observance of this rule, so important in the treatment of the sick, then it is proper that additional medical officers should be immediately appointed. On the other question there can be no doubt:—A public Institution, which depends for its existence on charitable subscriptions, and for its efficiency as a receptacle for the sick poor upon the gratuitous services of the medical profession, ought to be thrown open under reasonable

restrictions for the instruction of professional men. If the Governors of Charities in other parts of England did not take a more liberal view of this matter than those belonging to the Leicester Infirmary, it is not easy to perceive how men are to become properly qualified for acting as physicians or surgeons to Infirmarys.

OPENING OF THE NORFOLK AND NORWICH HOSPITAL MUSEUM.

ON Wednesday, 10th inst., this Museum, which has been lately founded through the liberality of Mr. Dalrymple, with some very valuable additions from the pathological collection of Mr. Crosse, was opened. The room has been erected by public subscription, and has been fitted up under the care of a Committee of the Governors of the Norfolk and Norwich Hospital. The entire lower part of the room is occupied by cases, in which are contained 2000 specimens, and about half way up, a gallery is erected round the room, around which a second series of cases are arranged, also filled with pathological specimens, with the various instruments used by the surgeons of the institution, while the walls are also covered with the portraits of those celebrated medical men who have assisted in gaining for the hospital of this city its present celebrity. The Museum is lighted from three sides, by windows from above. The arrangement of the pathological specimens has been the sole labour of Mr. Donald Dalrymple, the honorary curator of an institution which must ever reflect the deepest honour on the founder, and on those who have contributed thus to elevate still higher the character of the Norfolk and Norwich Hospital, and of the medical profession in the county. Mr. Donald Dalrymple's exertions can only be estimated by those whose knowledge enables them to appreciate the value of the labour; and to those exertions, and to the ability and care with which it has been fulfilled, Dr. Evans and Mr. Crosse have borne ample testimony. Mr. Dalrymple's reward, as he himself expressed at the subsequent dinner, is in the consciousness that (while he has added to his personal knowledge and reputation) he has performed a sacred duty in thus perfecting his father's labour of love, in upholding, as far in him lay, the character which had thus, to a certain extent, been entrusted to his keeping—an opportunity never to occur to him again.

An inaugural address was read on the occasion, by Mr. Crosse. We regret that we cannot find room for an abstract of it; but we may remark, that it was both eloquent, and appropriate to the occasion. At the earnest wish of his auditors, Mr. Crosse is about to publish the address, when probably we shall return to the subject.

UNPROFESSIONAL ADVERTISEMENTS.

THE following impudent manifesto appeared very recently in one of the daily papers.

To Medical Students.—Save your money—Session, 1845-6.—A Physician can advise, in one consultation, whereby the whole of the *Medical and Surgical Certificates*, qualifying for examination at Apothecaries' Hall, the College of Physicians and Surgeons, can be procured for £20, being a saving of hundreds. Consultation fee £5. 5s. Apply to Dr. —, between 12 and 4 o'clock in the morning, and from 7 till 9 o'clock in the evening.

We are not in the habit of commenting upon the numerous unprofessional advertisements which disgrace the columns of the daily prints; but we cannot permit the above to pass without throwing out a warning to the uninitiated, to avoid the alluring consultations of this *soi-disant* physician. We believe that the licensing bodies are but little aware of the facility with which their regulations, while they are obeyed in the *letter*, are continually evaded in *spirit*. So that a man produces a signed certificate by one of the "*recognised*," and the candidate has punctually registered himself at the Hall or College, this is all that is required? Thus, like other articles of commercial trading, we have diplomas "*for the million*." Such is, and always must be, the result of a free-trade system in lecturing. Place schools which have the means of teaching on a level with those which have not the means of teaching, and we immediately find springing up a money competition which is disgraceful to the medical profession. The advertiser may be regarded as merely a fungous growth of this pernicious system which we hope before long will be entirely swept away.

The following advertisement very recently appeared in the Times:—we cannot allow it to pass without comment.

Medical.—Wanted by a general practitioner in the neighbourhood of London a dispensing assistant. No Irish, no qualified person (*sic*), or any whose character will not bear the strictest investigation, need apply. For the advertiser's address, see Mr. —

[Admitting that the word "qualified" is not a misprint for "unqualified," it is deeply to be regretted that a few narrow-minded and ill-judging medical men should continue to act in a manner which inevitably tends to throw reproach and discredit upon the profession. We have often observed with a feeling more intense than disgust the illiberality of those who, in advertising for menial servants, emphatically introduce the warning that "no Irish need apply:"—but

we believe that the writer of the above advertisement is the first who has dared to address such a notice to men educated for a liberal profession, and holding the position of gentlemen in society. It has so happened that we have not, personally, had the honour of being acquainted with a very large number of the younger Irish members of the medical profession, but we have known many, and have never found them less worthy of consideration than the students of our own country. We trust that the advertiser's better feeling will be awakened by this hint, and that he will never, at any future period, so far forget himself as to address a deliberate insult to a class of men whom we believe to be in a professional view his equals, and, in charitable feeling, his superiors.—*ED. GAZ.*]

Selections from Journals.

PHYSIOLOGY.

OBSERVATIONS ON THE FORMATION OF BONE BY THE PERIOSTEUM.

It was long believed, that the periosteum mainly, if not solely, contributed to the reproduction of bone in cases of necrosis and fracture. In later times, however, the accuracy of this opinion has been called in question, and Professor Müller says, that "the periosteum has nothing to do with the reproduction of bone." The followers of the German physiologists maintain the doctrine, which was also that of Sir C. Bell, "that bone only produces bone." In proof of this they state that the periosteum, having no such function, has therefore not the power to produce bone. They further state, in regard to the generation of bone, that, in cases of necrosis, minute portions of the old bone are separated from it before it becomes dead; and that these portions continuing adherent to the periosteum, retain their vitality, and form the nuclei from which the new bone originates and grows.

In consequence of the contrariety of opinions upon this subject, Dr. Alexander Watson selected a set of cases, for the purpose of minute examination, with a view to elucidate the subject at issue. The results of this course of examination are of great interest.

The first case was one of acute necrosis of the tibia. The limb had been amputated some weeks after the commencement of the disease. The periosteum was found to be thickened, and separated from nearly the whole of the anterior part of the tibia, which had become dead. The exposed surface of bone was smooth, except at a few points where there were irregular depressions or

superficial rugged excavations, as if small portions of the bone had been corroded. From such excavations as these, it has been alleged that portions of the original bone have been separated; and, their vitality being preserved (as is supposed) by their continuing adherent to the periosteum, they become the nuclei by which the new bone is formed. In order to ascertain the truth of this theory, Dr. W. removed a portion from the inner surface of the periosteum, opposite to the largest of the depressions above described. Upon the surface of this portion of periosteum, the separated portions of the old bone should be found, which are said to form the nuclei from which the new bone is developed. But a careful examination of this preparation, either with or without the microscope, showed that no such separated portions of bone existed. The inner surface of the periosteum was quite smooth and entire; but, at several parts of its texture, after its inner surface was removed, there were minute portions of new bone of different sizes visible by the microscope. At other parts of the periosteum new bone was found in considerable masses, which were either covered on both sides by this membrane, or having periosteum on one side, were adherent to that part of the old bone which had not become dead. These masses of new bone were formed by the new osseous deposits enlarging and coalescing so as to form a spongy-like mass.

This case, therefore, completely disproves two statements or theories which have been advanced; viz. 1st. That new bone is formed by portions of the old bone which remain alive, become detached from it, and remain adherent to the periosteum; 2d. That the periosteum does not, of itself, form bone.

The parts next examined were the fractured extremities of a femur, from a youth, æt. 18, in whom amputation was rendered necessary, three months after the receipt of the injury, by suppurating, and the protrusion, in a state of exfoliation, of the upper end of the broken bone.

The broken extremities were surrounded by a mass of new bone, except at the part which had become dead, and was exfoliating. This mass of new bone, upon the upper extremity of the femur, was from one to two inches in length, and nearly a quarter of an inch thick at some parts. Its surface was uneven, and was covered by a membrane externally, which consisted of a layer of the periosteum extended over it; while other layers of this membrane either formed part of its structure, or passed underneath it. That part of the new bone, next to the fracture, adhered firmly and intimately to the old bone, by the indentation of spiculae, without any membrane being

interposed. The new bone gradually lessened in thickness as it receded from the fracture, till it consisted only of minute points of bone in the substance of the periosteum; while at the same time its adhesion was less intimate to the old bone, having a layer of the periosteum interposed.

The new bone, therefore, seemed to be inclosed in the periosteal covering. On examining the periosteum about an inch above the commencement of the mass of the new bone, numerous osseous points (visible only by being magnified two or three hundred times), could be seen in the substance of the membrane after it had been split into layers, or cut into transverse sections, and rendered transparent by being dried. Proceeding downwards, the bony points, becoming larger, are visible to the naked eye; they also become much more numerous, and by increasing in size, coalesce so as to form spiculæ of new bone, having layers of the periosteum interposed.

The process which these facts reveal to us, consists 1st, of increased thickness of the periosteum; 2dly, of the deposition of minute points of osseous matter in its substance, by which it is separated into layers; 3dly, of the gradual increase in the size of these osseous points, till they coalesce, thereby compressing or causing the absorption of some of the layers of the periosteum; 4thly, of the adhesion of the periosteum, loaded with osseous matter, to the old bone; 5thly, of the gradual absorption of the inner layer of the periosteum, by the indentation of processes or spiculæ of the new bone into the old bone, by which they become incorporated.

All the points and masses of new bone are distinctly formed in the substance of the periosteum, not upon its surface. Their first appearance is that of a fine microscopic net-work, which gradually increases and assumes the texture of perfect bone. And it is very remarkable, and very distinct in several of the preparations Dr. Watson has made, that these points of new bone are in many parts found close to the sides of blood-vessels. In a second instance of fracture, the periosteum, at the fracture, was much thickened by its texture being so filled with osseous matter that it could scarcely be cut with a knife. A thin vertical section of it, when dried, seemed to consist almost entirely of bone, and was effecting the reunion of the fractured parts. Dr. Watson has also examined several other cases which also bear on his views.

He mentions some other circumstances which deserve attention: 1st, when the broken extremities of a bone overlap each other, the formation of new bone takes place only at the parts required, being almost entirely on the sides of the broken bones, next

each other, and even although they may be at a considerable distance apart; 2d, when a fracture takes place through the shaft of a bone extending into a joint, the formation of new bone stops when the periosteum terminates at the joint: cases of this kind constitute negative evidence of the agency of the periosteum in the production of new bone. 3d. In fractures of the neck of the femur, the peculiar structure of the periosteal membrane of the cervix, and its laceration, seem to be the chief causes of want of bony union.

It has been asserted that, when a portion of the cranium has been removed, new bone is either not formed to fill up the chasm, or if new bone is reproduced it is by the gradual extension of the old bone from the sides of the aperture.

In the examination of three specimens, Dr. Watson found that extensive apertures in the skull, the results of fracture with the removal of bone, had in each case become occupied by a firm membrane; new bone had been formed to a considerable extent, partly by extension from the old bone, at the circumference of the aperture, and partly by ossification—obviously commencing in the centre of the membrane.

The author closes this highly interesting memoir with the following inferences:—

1. That the theories alleging that new bone is formed only by the living parts of the old bone, in cases of necrosis and fracture, are incorrect.

2. That the periosteum has evidently the power to produce new bone of itself, without the aid of the old bone.

3. That the formation of new bone by the periosteum consists, at first, in the deposition of osseous matter in the form of a fine microscopic net-work: and therefore, that the Haversian canals are only a secondary, not a primary formation in osseous tissue.

4. That in cases of necrosis and fracture, the process of reproduction of bone by the periosteum is the same.—*Edinburgh Medical and Surgical Journal*, April 1845.

The above observations completely agree with the views of M. Flourens with regard to the mode in which new bone is developed. "The following three propositions embody the chief results of M. Flourens' recent investigations upon this subject:—

"1. *Bone is formed by the periosteum.*
2. *It grows by the super-position of external layers.* 3. *The medullary canal is enlarged by the absorption of the internal layers of the bone.*

"The experiments on which the first of these propositions is based were performed on dogs. A portion of one of the ribs was

excised, removing only the bone, and leaving the periosteum behind. It was found that, after the expiry of a few days, a minute osseous nucleus was formed within the periosteum, between the two divided ends of the rib. This nucleus became larger and larger, until at length it rejoined these ends, the one to the other, thus filling up the void space between them. The numerous preparations exhibited by M. Flourens at the Royal Academy, clearly shew that the new bone is formed in the periosteum; that, when it is first formed, it is completely insulated and apart from the old bone; and that it is only by its gradual development and extension that it ultimately reaches the two divided ends of the old bone, thus reuniting them together. The *second* proposition—*bone grows in size by the superposition of external layers*—was established by numerous experiments on dogs and rabbits. One of the tibiae was exposed, the periosteum divided, and a ring of platinum wire was then passed around, between the bone and its investing membrane. The wound being then closed, and left undisturbed, it was found after a certain period that the new bone that had been formed fairly invested with its recently deposited layers the platinum wire. The *third* proposition was equally satisfactorily made out by the preparations that were exhibited.”—*Medico-Chirurgical Review*, from *Encyclographie des Sciences Medicales*.

PATHOLOGY.

EPIZOOTIC DISEASE AMONG CATTLE.

It is known that during the last six months of the past year, the Pestis Bovina manifested itself in Gallicia, and thence extended into Moravia and Bohemia, and it will also be recollected that this scourge, which has appeared at different times in these and the neighbouring countries, has been thence transferred into Western Europe, and there occasioned serious loss. The appearance of this epizootic has attracted the attention of almost all the continental governments; Austria, Bavaria, and France, have sent skilful veterinary surgeons to the scene of its ravages, there to collect new information respecting its origin and mode of transmission. At the meeting of the Academy of Sciences, some time since, M. Rayer presented the report which Dr. Schwab, director of the Veterinary School of Munich, had addressed to the Bavarian minister of the interior.

The importance of the subject will justify the following somewhat lengthy extract.

M. Schwab observes, that the Pestis Bovina declared itself in Gallicia, after the passage through it of oxen from certain Russian provinces. It gradually extended

itself in Moravia, where, between September and the commencement of December, 1065 subjects were attacked by this disease, of which number 68 were cured, 845 died, and 129 were slaughtered. It invaded Bohemia about the end of September.

Dr. Schwab describes the Pestis Bovina as being characterised by the following symptoms:—*First, or sub-inflammatory period*, languor, lowness of spirits, abrupt movements of the head, glistening eyes, fixed look, sometimes dry cough, morbid sensibility of the back, of which the hair is erect, grinding of the teeth, augmentation or diminution of the secretion of milk in cows. *Second, or inflammatory period*:—suspension of the secretion of milk, cessation of the appetite, and of rumination; intense thirst; accelerated respiration, quick movements of the nostrils and lips, feeble and deep sighs, frequent cough, quick pulse, movements of the head towards the hypochondria, suppression of the evacuations from the bowels and bladder, slight spasmodic movements of the muscles of the shoulder, and still more frequently of those of the buttocks, erection of the hair, acute sensibility of the back and lumbar region, redness of the conjunctiva, lachrymation, discharge of serosity from the nostrils, and of saliva from the mouth, dryness of the lips, tumefaction and leaden discoloration of the gums, alvine evacuations dark, and in the form of small rounded masses; peculiar fixity of the look.—*Third, or typhoid period*:—diarrhoea, and intolerably offensive odour of the evacuations; at a later stage involuntary defecation; sometimes bloody stools; redness and swelling about the anus, and the vulva in cows; discharge of purulent mucus from the inner angle of the eyelids, and of foetid mucus from the nostrils; saliva abundant; increased frequency of the respiratory movements (more than 50 per minute); plaintive sighs; cessation of the cough from increasing debility; almost imperceptible action of the heart; fall in temperature of the body: death.

M. Schwab has assisted at post-mortem examinations of the bodies of five animals, of which three died in the second stage of the disease, and two in the third. The following were the appearances observed: considerable emaciation; softness and brown discoloration of the muscles; fluidity and dark colour of the blood, which oozed out in small quantity after section of the muscles; violet colour of the mucous membrane of the abomasum, the vessels of which were much injected and the membrane itself swollen, presenting cherry-coloured points, with or without spots of a deeper hue; erosion of the membrane in some parts, without apparent suppuration; in one case these spots were covered with a brown, sanguineous, slightly adherent coagulum. On the folds of

the membrane greyish spots were observable. The epithelium of the maniplus was of a brownish colour, and in a cow slaughtered on the approach of death, black. The reticulum generally contained but little alimentary matter; the paunch was full of food; its epithelium presented, as did that of the reticulum, a brown colour, most marked over the large papillæ. The small intestine was inflamed in one subject (which died in the second stage of the disease); the inflammation existed but in its inferior third; externally it was of a brown colour, and its vessels were seen to be much injected; the mucous membrane, swollen, and of a reddish brown colour, presented small red spots. In some subjects, Prof. Eckel has found in the small intestine a false membrane analogous to that of croup. The cæcum was always inflamed, the mucous membrane tumid, and of a coppery hue, and presenting numerous small red spots. The gall-bladder was distended, its superficial vessels injected, and the mucous membrane swollen and inflamed; the bile was black like ink. The liver, more voluminous than usual, was in one case friable and greyish. The spleen was of the normal size; the pancreas was red; the mesenteric ganglia, the epiploon, and the urinary organs, did not present any deviation from the healthy state.

In four cases, the lungs were healthy; in a cow which had aborted they were emphysematous and hepatized in some parts. The Schneiderian membrane, the mucous membrane of the larynx, that of the air-tubes generally, and of the anterior wall of the trachea in particular, were inflamed. In one subject, the mucous membrane in the latter situation was covered with a layer of elastic false membrane of about one-twelfth of an inch in thickness, and similar to that of croup. The pericardium was healthy: the brain was not examined. M. Schwab recapitulates the morbid appearances as follows: 1, inflammation of the gall-bladder; 2, Alteration in the bile; 3, inflammation of the abomasum; 4, inflammation of the intestines, and especially of the small intestine and cæcum; 5, inflammation of the mucous membrane of the air-tubes.

According to M. Schwab, all modes of treatment have proved alike ineffectual. When the disease has declared itself, it is necessary at once to slaughter the animal. Those countries where the pestis bovina does not originate ought to protect themselves against its introduction, by enforcing a rigorous quarantine upon all animals from suspected countries.

AURAL SURGERY.

NEW METHOD OF TREATING DISEASES OF THE EAR.

At the meeting of the Academy of Sciences, on Jan. 6, 1845, a communication was read

from M. Wolff, upon a new method of treating diseases of the internal and middle ear.

In substituting aerial for liquid injections, in the treatment of diseases of the ear, a marked advancement was made in this branch of therapeutics by M. Deleau. But the change has not been advantageous in every respect; for whilst air-douches exercise an influence purely mechanical, and always identical, liquid injections enable us to fulfil very different indications, the water serving as the vehicle for substances which may be varied according to the nature of the case. Indeed, M. H. Valleroux has lately recommended injections of air charged with emanations from resinous and balsamic substances, which, being volatilized at a moderate temperature, have often a beneficial influence in aural catarrhs. But it is evident that the greater part of the remedies which it would be desirable to make use of in diseases of the ear cannot be employed in this form; some because they are not volatile, others because they require for conversion to the aeriform state too high a temperature. Water, which, in being evaporated, generally carries with it a portion of the substances to which, in its liquid form, it served as a menstruum, cannot be employed in the state of vapour, because the high temperature required for its maintenance is unsuitable to the sensibility of the organs upon which it is necessary to direct it; but the ebullition of water gives rise to a current of humid air, which may be readily brought to a temperature capable of being supported without inconvenience by the walls of the Eustachian tube; and if the water has been previously medicated, some part of the principles with which it has been impregnated will thus accompany the moist air. This method requires for its employment a very simple apparatus. The water contained in an iron retort is heated by means of a spirit-lamp; the vapour escapes by a tube into a second and larger vessel, which contains a third, filled with cold water; to the upper part of the second vessel is attached a tube, by which the moist air escapes. The same apparatus may serve for the administration of remedies not previously dissolved in water. If, for example, it is wished to employ acetic ether, or other medicines which volatilise at a temperature slightly elevated, on placing them in the third vase their vapour will mingle with the moist air.

As to the mode of introducing the vapour, if the Eustachian tubes are permeable, all that is requisite is to pass an elastic canula from two to three inches within the inferior nasal canal, so that one extremity shall be near the orifice of the Eustachian tube, whilst the opposite end is adapted to the discharging tube of the apparatus.

One grand recommendation of this very simple proceeding is, that it occasions no pain or pruritus, and may be practised by any medical man, or even by the patient himself.

It is requisite, however, that the diagnosis of the disease should precede its treatment, and the former will always demand the exploration of the middle ear by means of the sound. Hence, catheterism of the Eustachian tube remains as the principal means indicated in the diagnosis of diseases of the internal and middle ear; and it is equally necessary in their treatment, when there exists any material obstacle to the passage of the air. All the different methods of performing this operation may be referred to two principal divisions—catheterism by means of the solid silver sounds of Itard and Kramer, and by means of the flexible sounds of Deleau, each of which has its advantages. The former mode is recommended by greater security in the execution of the operation, from the larger size of the instrument generally, and of its beak in particular. The latter method has also several advantages, of which the principal is very important, viz. the ability to introduce the instrument much further within the tube; for whilst the metallic sounds are arrested at its orifice, the small elastic ones are able to traverse the greater part of its canal—three-fourths, according to Deleau. M. Wolff has attempted to unite the chief recommendations of the solid and elastic sounds. He describes two new forms of this instrument, one being metallic, the other elastic. Both are double; consisting of an external sound, equal in size to the instrument of Kramer, and of an internal one, corresponding in size to that of Deleau. The outer sound is of the usual length, 6 inches; the inner one is $2\frac{1}{2}$ inches longer. The former is graduated throughout its whole extent; the latter only at the inferior extremity, which projects from the outer sound. In one form of his catheter the inner sound is composed of silver nearly or quite pure, and consequently flexible; whilst the material of the outer sound is ordinary silver, *i. e.* an alloy with copper, and on this account inflexible. In the elastic form the inner sound may be deprived of its stylet, as its passage is rendered sufficiently sure by the external sound which contains it.

The principal advantage gained by these alterations is this: that whilst they give to the operation all the sureness afforded by the large and solid instruments of Kramer, they enable us to penetrate equally far within the Eustachian tube as when the elastic instrument of Deleau is employed.

The metallic and elastic sounds are respectively preferable in certain cases. The double silver sound is more suited for the

exploration of the middle ear, as well as in cases of contraction or obliteration of the canal. The elastic sound, on the other hand, has the advantage of being much more tolerable to the patient.

TOXICOLOGY.

CASE OF POISONING BY PRUSSIC ACID.

BY THOMAS NUNNELEY, ESQ. LEEDS.

RECOVERY FROM A LARGE DOSE. UTILITY OF COLD AFFUSION.

THE patient was a man about 40 years of age. He procured from a druggist, under the pretence of poisoning some animals, three pennyworth of prussic acid.* There is no doubt, however, from his subsequent conduct, that he intended to destroy himself. It appears that while undressing to go to bed, the man filled a wine-glass with common gin, emptied the bottle containing the prussic acid into the glass, drank off its contents, threw down the bed-clothes and got into bed,—telling his wife that he had taken something, and that it would be all over with him in a few minutes. She left the room for assistance; and his child, a girl about five or six years old, who was in the bed, crept to him, saying, "Father, don't leave me!" to which he returned a rational answer. He then felt his jaws becoming stiff, and crammed the sheet between his teeth, thinking, as he described it, that he should like something to hold by: he felt his jaws becoming stiffer and tighter, and was conscious of nothing more until water was dashed in his face, when he rose up, and, to his surprise, found several persons around his bed. He had no idea of how long he had been in an unconscious state, and says there was not any pain until the water was dashed upon him; the sensation he then felt was most awful, but he could not describe it. At least *two minutes* elapsed before assistance was procured. Those who first saw him stated that he was lying on his back, insensible, breathing hard, the eyes wide open and staring, the face "black-red" (livid?) He appeared to be in a fit. He was not seen by a medical man until *ten minutes* after the poison had been swallowed. Mr. Bishop, who had been called, then found him foaming at the mouth, the face pale, and covered with large drops of sweat: the arms rigid, the hands being half extended. He tried to administer some solution of sulphate of zinc, but could not, owing to the jaws being so firmly clenched. Cold water was immediately dashed over the head and neck, and the man became sensible: ammonia was now rubbed

* When a poison like Prussic acid is retailed by the pennyworth, and is measured out into bottles at a conjecture, it is surely time for Government to interfere to restrain its sale!—ED.

over the hands, the smell of which he quickly perceived, and said he felt better for it. The sulphate of zinc was given with good effect, and the vomited matters smelt strongly of prussic acid. About a pint of blood was abstracted from the arm, in which Mr. Nunneley could perceive no odour of the poison. Mr. Bishop thought he perceived it at first; but as the blood was by the side of the bed on which the man was lying, he may have been deceived. The blood was of a muddy brick-red colour; the following day it had coagulated, the crassamentum having separated from the serum, but not being quite so firm as usual. Mr. West examined the blood, but did not find in it the least trace of hydrocyanic acid.

The quantity of acid taken was supposed to be *forty minims*, and the strength of the acid, as determined by Mr. West, was 3.25 per cent of anhydrous acid, although sold for and labelled as Scheele's acid (!)—another proof of the great difference in the strength of this preparation. Mr. Nunneley concludes that the man swallowed nearly *one grain and a half* of anhydrous prussic acid. The case shows, as he observes, the continuance of perfect consciousness for some time after the poison has been taken, as well as that recovery may take place from a very large dose. It also shows the good effects of cold affusion; for it does not appear that bleeding was resorted to until sensibility had returned.*

REMARKS.—The only comment which this case requires, is with respect to the *dose* taken. The druggist who sold the acid did not *measure it*; but poured a small quantity by conjecture into a half-ounce phial. This was found quite empty: the patient pointed with his finger to the level in the phial to which the acid had reached, and the druggist who sold it pointed to the same spot. On measuring this quantity it was found to be equal to forty minims. Mr. Nunneley thence concludes, that the man swallowed one grain and a half of anhydrous acid. There is, however, a want of precision about the dose, which may vitiate the application of this case to medico-legal purposes. As there was no measurement, the dose may have been more or less: but admitting that *forty minims* were taken, we are at a loss to understand how this is made to be equivalent to nearly one grain and a half of anhydrous acid. A fluid-ounce of water (= 480 minims) ought to weigh, at 62°, 437.5 grains, so that the minim should be equal to 91-100ths of a grain. Hence forty minims would correspond to 36.44 grains of the acid (at 3.25 per cent.), and this would be equivalent to 1.18, or 1

and less than 1.5th of a grain of anhydrous acid! Minims measures, however, vary considerably,—we seldom find two exactly alike; but allowing the minim to be equal to the grain, the quantity of anhydrous acid would be *less than a grain and a third* on the assumption that the dose was as represented. The weights above given refer to distilled water, but as the specific gravity of water decreases by saturation with prussic acid, the corresponding weight of acid would be somewhat less. All that we can conclude from the above facts, is, that this was probably a dose of a *grain* or a little more, and when we contrast it with the cases of Mr. Hicks*, and Mr. Taylor of Cricklade†, the retention of consciousness and ultimate recovery are remarkable facts, and worthy of fixing the attention of toxicologists.—ED. GAZ.

CASE OF POISONING WITH PRUSSIC ACID.

BY DR. J. F. HELLER.

Absence of fibrin from the blood. Detection of the poison in all the organs of the body.

A SHORT time since, an apothecary's apprentice, about eighteen years of age, poisoned himself with prussic acid. The vessel out of which he had swallowed the poison was empty; it had contained two ounces of officinal acid. The deceased was found dead in bed.

On making an inspection of the body, the blood flowed from the incisions like fresh-drawn blood partially coagulated. It had a well-marked *red colour* (*stark roth geführt*), and when submitted to the microscope, presented no deviations from the normal condition. In respect to its chemical composition, the only circumstance remarked was *the entire absence of fibrin*. This principle could not be discovered either by the microscope or by the usual chemical processes—a fact which demands further attention, not merely in reference to the nature of fibrin, but to our knowledge of its actual condition in the blood. The diffusion of prussic acid throughout the body was demonstrated by its presence in all the organs. On merely opening the body, a distinct odour of the poison was perceived. Its presence was thus made evident in the blood, the lungs, the cerebrum, cerebellum, spleen, and alimentary canal.

The analysis was made by digesting the organs with alcohol, distilling the liquid, and placing a small quantity of alcohol in the receiver. The distilled liquid uniformly gave the characteristic reactions of prussic acid. Another plan, equally successful,

* Abridged from the Provincial Medical and Surgical Journal, August 13, 1845.

* Page 459.

† Page 103.

consisted in digesting the parts for analysis in caustic alkali, then adding a salt of the mixed oxides of iron, shaking the mixture, and subsequently adding muriatic acid in slight excess. Under these circumstances, the substances examined acquired a blue colour.

It is remarkable that, notwithstanding the rapidity with which death took place, the prussic acid should have diffused itself, within so short a period, throughout all the organs of the body. It is also obvious that, from the facts observed in this case, comparative experiments may throw some light on the important question respecting the assimilation and condition of fibrin in the blood.—*Heller's Archiv. für Physiologische und Pathologische Chemie und Mikroskopie*, 1 und 2, 1845.

[REMARKS.—Dr. Heller here speaks of a dose of two ounces of *officinal* acid, without informing us to which of the dozen preparations used in Germany he refers. Although the dose was doubtless very large, and death probably rapid, yet we cannot regard it as so very remarkable a circumstance that the poison had diffused itself throughout the body. Experiments have shown that fifteen or twenty seconds will suffice for this circulation of the poison, and there is nothing improbable in the deceased having survived for this period of time. There are two pathological facts of interest in the case. 1. The blood was of a *red* colour—not dark, or almost black, as it is stated to have been found in some cases. 2. The absence of fibrin from the blood,—a fact which we believe has here been noticed for the first time. We agree with Dr. Heller in thinking that this is a subject which requires further examination. It is a somewhat new plan to apply the tests for prussic acid to the solid organs of the body; but undoubtedly, if the acid were present, the Prussian-blue test would act as readily on the brain or stomach as it does on the pulp of the bitter almond, and it would de away with the absurd objections about the generation of prussic acid by the *distillation* of organic matter at a vapour-bath heat.—*ED. GAZ.*]

EFFECTS OF DEFECTIVE VENTILATION.

IN illustration of the increased mortality attendant on ill-conditioned dwellings, Mr. P. H. Holland supplies this table from Chorlton-upon-Medlock, upon an average of the five years preceding 1843. (*Health of Towns Commission*, Vol. 1, p. 207.)

Houses of 1st Class . . . 1 in 52	Rate of Mortality.
„ 2d Class . . . 1 in 40	
„ 3d Class . . . 1 in 29	

Dr. Laycock, in his Report upon the City

of York (in the same volume, p. 235), the following returns:—

	Mortality per cent.	Mean age at death.
Best drained and ventilated parishes	40.2	35.32
Intermediate ditto	52.5	27.79
Worst drained and ventilated ditto	62.8	22.57*

Of the favourable results of an improved system of ventilation as a corrective of the evil, there are on all sides the most undeniable proofs. I select two instances: “In 1832, there were 600 pupils at the Norwood School, amongst whom scrofula had broken out extensively, and great mortality had occurred, which was ascribed to bad and deficient food. The case was investigated by Dr. Arnott: the food was proved to be most abundant and good; and defective ventilation, and consequent atmospheric impurity, was assigned as the cause. Ventilation was applied by his direction; the scrofula soon after disappeared; and 1100 children are now maintained in good health where the 600 before ventilation were scrofulous and sickly.” (*Health of Towns Commission*, Vol. 1, p. 78). In the same volume (p. 70), a more remarkable instance is given from a treatise by M. Baudelocque, “*Sur les Maladies Scrofuleuses*.” At the village of Oresmeaux, about three leagues from Amiens, situated in an open and elevated plain, the greater part of the inhabitants were engaged in weaving linen in their houses, which were for the most part low and exceedingly close and dark. Humidity was thought necessary to keep the threads fresh, so that the air and light were scarcely allowed to penetrate into the workshops. Nearly all the inhabitants were seized with scrofula, and many families, continually ravaged by that malady, became extinct. “A fire destroyed nearly a third of the village: the houses were rebuilt in a more salubrious manner; and by degrees scrofula became less common, and disappeared from that part. Twenty years later, another third of the village was also consumed: the same amelioration in building, with a like effect as to scrofula. The disease is now confined to the inhabitants of the older houses, which retain the same causes of insalubrity.”—*Certain Tests of a Thriving Population*, by Dr. Twiss.

* Great as must have been the injurious influence of bad ventilation in some of the above instances, we must not assign the larger number of deaths in the worst class of dwellings entirely to that cause; for it is also necessary to take into account the numerous other instances which tend to determine a greater proportion of deaths among highly impoverished persons than among the members of the higher and middle classes.—*ED. GAZ.*

Lectures.

CLINICAL LECTURE

ON

MELANOSIS OF THE EYE,

Delivered at St. Bartholomew's Hospital,

By W. LAWRENCE, Esq. F.R.S. &c.

[Reported by MR. HOLMES COOTE.]

CASE I.—*Melanosis of the left eye—Extirpation of the globe at an early period—Death in three years and three quarters after the operation, from secondary disease of the liver, pancreas, ovaries, and other parts.*

ELIZABETH RUTE, a female of rather stout frame, and healthy appearance, who had always enjoyed good health, was admitted into St. Bartholomew's, Oct. 7, 1841, as a venereal patient, on account of superficial ulcerations and mucous tubercles of the external organs. She said that her age was 20, but she was probably two or three years older.

A few days afterwards, she called my attention to the state of her left eye, of which she had made no complaint at the time of admission. It was red, watering, and painful, and presented serious changes in the state of the iris and lens. It appeared on inquiry, that six months ago, without previous suffering, she had discovered accidentally that she was blind on that side. She experienced no inconvenience, until three months after, when pain came on in paroxysms so severe as to induce her to become out-patient at the Ophthalmic Hospital in Moorfields. She discontinued her attendance after two months, in consequence of her confinement, during which time the paroxysms were less frequent and severe.

We found the conjunctival vessels, and those of the sclerotica, slightly injected; the cornea transparent; the iris dark-coloured, dull, and motionless; the pupils widely dilated; the crystalline lens of a dull dingy hue: both iris and lens were in contact with the cornea. Three small staphylomatous projections, one above and two below the middle of the globe, occupied the outer part of the sclerotica, close to the edge of the cornea. Large tortuous vessels of venous character ran over the two lower. Vision was totally lost; there was constant pain, which was occasionally very severe. The suspicion of melanosis immediately occurred to my mind. The presence of a morbid growth in the back of the globe would account satisfactorily for the changes

of appearance and position in the iris, pupil, and lens, as well as for the partial absorption of the sclerotica. Leeches were applied three times to the left temple, with benefit; but the pain was not entirely removed.

As the appearances above described might be accounted for by the formation of fluid within the globe, although I did not think it probable, I punctured one of the staphylomatous projections with a grooved needle. No fluid escaped. Entertaining no further doubt respecting the nature of the complaint, I explained to the patient the necessity of the operation, to which she readily consented. The globe was extirpated on the 23d of October, the lids being separated by a free incision at the external commissure, and turned backwards, so as to expose fully the front of the orbit, and the posterior connexions being divided as far back as could be accomplished conveniently.

Examination of the eye.—The globe, not unnaturally soft, was divided through the centre. There was no trace of vitreous humour; a dark and blackish mass, of soft consistence, occupied nearly the whole interior of the globe, pressing the retina, which was healthy, and formed a flattened mass, towards its inner side, and the crystalline lens, which was semi-transparent, against the posterior surface of the cornea. During the examination, the diseased mass dropped out from one half of the section, leaving the inner surface of the sclerotica smooth, but slightly darkened in colour. In that part of the globe which was occupied by the diseased mass there was no trace of choroid membrane, and the growth therefore filled the space between the sclerotica and the retina, which was folded into a small compass. That portion of the sclerotica towards which the retina was pressed was lined by healthy choroid. The optic nerve was healthy. The eye is preserved in the museum of the hospital.

There was but little subsequent bleeding: no vessels were tied. Four hours after, she had cold chills, and vomited several times.

24th.—Passed a restless night, but slept after taking some landanum; the pulse is quiet; the skin cool and moist. The lids are distended, apparently by effusion of blood into the orbit: no swelling around.

25th.—Bowels not open. Pil. Hydrarg. Chloridi c. Jalap. gr. x. statim.

27th.—There is oedema of the face and eyelids on both sides, with slight reddish blush; skin cool; tongue clean; pulse quiet; bowels open.

28th.—The oedema and redness of the face and lids have lessened: she complains of pain in the abdomen.

Pil. Hyd. Chloridi c. Jalap. gr. x. statim.

Haust. Sennæ Co. post sex horas.

November 4th.—She continued well to this date, when a severe attack of erysipelas came on. The face is red and swollen; there is general heat of skin, and headache; the tongue is furred; the bowels are purged.

Radatur Caput. Admoveantur Hirudines xviii. faciei. Sumat. Hyd. c. Cretâ, gr. iiss. 6tis horis. Haust. Ammon, Acet. c. Liq. Ant. Pot. Tart. 3ss. ter die.

6th.—The erysipelas is spreading to the scalp.

7th.—She has been very sick; the erysipelalous redness is lessened.

Omittatur Liq. Ant. Pot. Tart. Contin. Haust. Ammon. Acet. et Pilulæ.

10th.—The swelling and redness of the scalp have much lessened; skin cool; tongue cleaner; bowels less purged; pulse feeble.

To leave off medicine.

12th.—Swelling and heat of the scalp have returned; tongue furred.

R Haust. Ammon. Acet. c. Liq. Ant. Pot. Tart. 3ss. 6tis horis.

13th.—The inflammation has extended to the back of the head and the upper part of the neck.

14th.—The scalp has resumed its natural state; the neck is but slightly affected; tongue clean; pulse quiet; bowels regular.

19th.—She is convalescent, and has left her bed.

December 6th.—Discharged. She was not delirious during either attack of erysipelas; nor was she in either so depressed as to require stimuli. On the 16th of October, nine days after admission, her mouth became sore from the mercury administered for the venereal complaints: the remedy was then discontinued. The sores had healed, and the tubercles had disappeared previously to the operation.

September 6th, 1842.—She was seen in good health: there was no return of disease in the orbit. From the time of her leaving the hospital she was in a laborious situation as domestic servant, and remained well to the latter end of 1844, when she called upon me, complaining of pain and fulness in the abdomen. Suspecting that internal disease might be forming, I advised her to leave her situation, and to come into the hospital.

December 12th.—There is a small swelling on the right side of the navel, covered by healthy skin, of which the appearance is slightly altered by the dark colour of the subjacent growth. There is general fulness of the abdomen in the right side and upper part. The liver is enlarged and uneven on the surface, extending below the margin of the chest. Towards the confines of the lumbar and iliac regions, there is a tumor

on each side, somewhat moveable, of indefinite size and extent. Pain is experienced occasionally. The several functions of the body are performed naturally, but she sleeps badly.

Pil. Saponis c. Opio, gr. v. omni nocte. Meat diet.

17th.—She complains of pain in the abdomen, and says that the pills make her feel ill.

R Morphice Acetatis, gr. $\frac{1}{2}$, in Haustu, omni nocte. Emp. Opii abdomini.

18th.—Bowels purged.

Haust. Cretæ Co. 6tis horis.

20th.—Bowels still purged; she is faint and exhausted.

R Ammon Carb. gr. v. ex. Mist. Camphoræ, 4tis horis. Cont. Mist. Cretæ Co.

22d.—Hyd. c. Cretæ, gr. iiss. ter die. Pulv. Ipecac. Co. gr. x. vespere.

23d.—Bowels still purged.

Enema Amyli c. Tinct. Opii, ℥xxx. statim. Pulv. Ipecac. Co. gr. x. vespere.

25th.—The diarrhœa is stopped, but she complains of uneasiness about the head; she is faint; pulse feeble; tongue clean.

R Spir. Ammon. Aromat. 3ss.; Tinct. Opii ℥x. 4tis horis.

Balneum Calidum, vespere. Emplast. Lyttæ parvum tempori dextro.

Rep. Pil. Saponis c. Opio. gr. v. omni nocte.

Jan. 7th.—Vini Rubri, 3iv. quotidie.

11th.—Beef, lbj. for beef-tea, daily.

22d.—Vini Rubri, 3vj. quotidie.

Feb. 3d.—She has return of pain in the head.

Emplast. Lyttæ parvum nuchæ.

4th.—The pain in the head, which comes on in paroxysms, is not relieved.

Hirudines vj. pone aurem utramque. Opii gr. i. hac nocte, et rep. si opus sit.

17th.—The head feels easy, but the bowels are again purged.

Mist. Cretæ Co. 6tis horis.

18th.—She complains of renewed pain in the head.

Hirudines iv. pone aurem utramque.

19.—The application of leeches seems to aggravate the pain.

R Morphice Acetatis, gr. $\frac{1}{2}$, (in haustu) omni nocte.

25th.—She is suffering considerable pain in the abdomen.

Liniment. Saponis, 3ij.; Tinct. Opii 3j. ft. Linimentum. Wine and meat diet continued.

March 8th.—Emp. Belladonnæ abdomini.

13th.—During this time the disease has

been making rapid progress. Five dark-coloured subcutaneous tumors, the size of nuts, can be counted upon the chest, and in the right mamma. The abdomen, which equals in size that of a woman at the full period of utero-gestation, is distended laterally by the enormously enlarged and tuberculated liver, below which other masses may be felt. With the exception of menstruation, the different functions are properly performed. She is collected in mind, and suffers pain, either in the head or abdomen, at times only; in the intervals she is quite easy. Small blisters and mustard plasters on the abdomen afford temporary relief.

20th.—The opium was altered for Hyosciamus.

25th.—She has return of pain of severe character in the head, and especially about the right temple.

Hirudines iv. tempori dextro. Rep. Ext.
Hyos. gr. v. nocte. Meat diet and wine continued.

March 26th.—Emplast. Lyttæ regioni epigastricæ. The hair to be thinned.

April 22d.—Brandy ʒiv. daily.

The disease advanced steadily, attended by occasional pains either in the head or abdomen, and eventually by purging of blood, at times in considerable quantity, until June 6th, when she died.

Mr. Coote has drawn up the following account of the examination after death.

There were two or three small black tumors in the scalp; the skull-cap, thicker and heavier than natural, contained in the diploë, similar deposits, each about the size of a large pea. Black matter was found about the optic foramen, in the lesser ala of the sphenoid bone, and along the inferior margin of the left orbit. The bony substance was not swelled, nor apparently altered in structure, in the situation of these deposits.

The brain was healthy; there was a small black spot lying upon the surface of the anterior cerebral lobes under the pia mater. The left optic nerve, from the orbit up to the commissure, was shrunk into a slender membranous chord, without trace of nervous matter; the state of atrophy was continued in a slighter degree along the right, or opposite optic tract, into the optic thalamus.

There were five dark-coloured spherical tumors, about the size of nuts, visible through the integuments of the chest, situated chiefly about the right mamma. Three similar tumors were noticed under the integuments of the abdomen; they were loose and seated in the cellular tissue; some were firm and black, others of a brownish hue, consisting of thick fluid contained in a cyst.

Black matter was deposited in the cancellous texture of some of the left ribs; a mass of black matter the size of a musket-bullet

was lodged upon the anterior surface of the dorsal vertebrae.

The lungs were healthy.

There were numerous black tumors upon the outer and inner surface, and in the muscular substance of the heart; two of considerable size projected into the cavity of the left ventricle.

The liver, enormously enlarged, $17\frac{1}{2}$ lb. in weight, occupied the greater part of the abdominal cavity; although much of the surface presented the natural colour, consistence, and organisation of the hepatic substance, the enlarged gland consisted principally of a morbid deposit, in larger or smaller masses, which occupied the entire thickness of the organ, and projected from the surface in rounded tubercles of various magnitude and generally of black colour. In the interior the colour varied from a deep black to a light yellowish brown. The consistence varied; it was generally softish, so as to break down under the pressure of the finger. When passed over paper, linen, or the skin, a black or brownish colouring matter was left behind; the morbid substance was contained in a kind of cyst, from which it could be turned out. The larger masses presented a kind of slight lobular arrangement on section.

The gall bladder was healthy, and contained bile.

Upon the mucous membrane of the jejunum were seen several small black patches; larger patches were found in the fold of the mesentery, and on the peritoneal covering of the pancreas.

The pancreas was filled with numerous deep black deposits of irregular form, some as large as a musket-bullet.

Smaller deposits were found in the kidneys; two cysts resembling in size and shape the human testicle, each containing a mass of black matter, were attached to the right kidney.—The uterus was healthy.

The ovaries were greatly enlarged and converted into irregular lobulated masses, about eight inches in length, which retained no trace of natural structure; each of these masses consisted of a thin but dense cyst, filled with melanotic structure of soft consistence, and of the deepest black colour. The ovaries with the uterus are preserved in the Museum of the Royal College of Surgeons of England.

Some minute black spots were seen upon the mucous membrane of the vagina, near the os tincæ.

The blood-vessels were healthy.

Under the microscope this morbid deposit was found to be composed of irregularly shaped cells, of larger size than in common medullary disease, and containing dark granules, varying in quantity according to the colour of the part.

In those parts which were soft, and brownish in colour, the cells had given way, and allowed the granules to escape. The granules had every where a kind of molecular movement.

CASE II.—*Melanosis of the right eye—Extirpation of the globe—Death at the end of six months from melanotic disease within the cranium.*

Sarah Keeble, æt. 43, married, of spare habit and swarthy complexion, but of healthy family, and the mother of six healthy children, never suffered from any illness until two years ago, when, without obvious cause, the right eye became inflamed, the lids swelled, and vision was lost. The inflammation subsided readily under proper treatment, but the sight did not return. Her friends, however, remarked that the eye had a more bright and glistening appearance than the other, and seemed the best of the two. About nine months ago, she had severe pain in the globe, which induced her to examine it in a glass, and on raising the upper lid, she discovered a black spot in the white part. This slowly increased, and projected slightly till about eight weeks since, when it grew more rapidly, pushing the eye downwards behind the lower lid. For three months after the discovery of the black spot she was free from pain, but it then occurred in paroxysms, increasing in frequency and being particularly severe at night. Yesterday (Jan. 9th), the tumor began to bleed.

Jan. 10th, 1845.—There is a dark-coloured tumor, the size of a walnut, with four black tubercular prominences, protruding from the upper part of the right eye, partially covered by the upper lid, which is stretched over it, and rests in a groove on its upper surface. The portion exterior to the lids, directed outwards, is ulcerated, and bleeds freely when touched. In every other part the conjunctiva is entire, but its vessels are large and tortuous. The development of this tumor above the eye has pushed the globe downwards and outwards. When the lids are separated by voluntary effort, the palpebral aperture is entirely occupied by the morbid growth. On depressing the lower lid, the cornea is brought into view quite transparent, but pushed down to the very lowest part of the orbit. The iris is unaltered and pressed against the cornea, together with the lens, which is discoloured and opaque. Vision in the opposite eye is perfect; appetite good: no disease is apparent in any other part. The history of the case, with the appearances just detailed, left no doubt that melanotic disease had formed within the eye, and had made its way through the coats at the upper part of the organ, so as to constitute the dark tumor

which projected between the lids. Extirpation of the diseased organ offered the only prospect of benefit.

Jan. 11th.—The operation was performed in the usual manner. There was some trouble in separating the upper lid, which was tightly stretched over the tumor, but the globe was satisfactorily removed. The cut surface of the optic nerve presented a dark discolouration in slender streaks; as it had been cut through close to the sclerotica, it was thought advisable to take out another portion. Some discolouration was noticed in the situation of the second division. There was no bleeding of consequence; no vessels were tied; wet lint was placed over the orbit, and the patient was carried to bed.

Upon making a vertical section of the eye and tumor, it was found that a morbid growth of soft consistence, brownish in colour with black portions interspersed, had proceeded from between the sclerotica and choroid in front of the optic nerve, and pushing forwards the iris, which was healthy, and the lens which was opaque, against the cornea, had made its way through the upper part of the sclerotica, just behind the ciliary ligament, and formed a tumor the size of a walnut, covered by conjunctiva. A shred of retina was discovered among some loose fibrous substance. No trace of choroid was seen, nor of vitreous humour, although the morbid growth did not fill the interior of the globe.

No unfavourable symptom occurred after the operation. The swelling of the lids subsided when suppuration was established; the wound healed, and she was discharged in perfect health on Feb. 3d. The unfavourable result of the case, however, is apparent from this portion of the brain, which has been forwarded to us by Mr. S. Freeman of Stowmarket, the gentleman who attended her at the time of her death, which took place in the early part of this month (July), after a few days illness. Within a week of her decease she had been able to walk a distance of fourteen miles.

The brain, as might be expected in this weather, reached us in a state not admitting minute examination; you see, however, a mass of black matter the size of a large walnut, in a kind of cyst at the base of the brain behind the orbit, pressing the left optic nerve and stretching the commissure. The carotid arteries are imbedded in its substance; the right is pervious, the left apparently obliterated at one point. The growth is partly of a greyish-brown colour, and partly black, and resembles the original disease in the eye. The soft parts remaining in the bottom of the orbit were sent with the brain; the remnant of the optic nerve formed a firm mass with dark streaks in its

substance, about as large as a small horse-bean. The remaining portions of the other orbital nerves were healthy.

The thorax and abdomen were not examined.

The two cases of melanosis now detailed present to your view the most striking features of the disease, as it occurs in the eye; and afford the necessary data for determining on the proper course of treatment, more particularly in regard to the important question of operation. You see the malady developed in the interior of the globe, and destroying sight; making its way through the tunics so as to constitute an external tumor, appearing in a secondary form in various other organs, and thus terminating fatally. You see the eye removed, and the patient recovering from the operation; remaining well for a shorter or longer period and apparently cured, but sinking ultimately under the reappearance of the disease in its secondary form.

The primary seat of the affection is between the sclerotica and the retina, which suffer at first merely from the pressure of the morbid growth. Where the melanotic substance is deposited, the choroid cannot be traced; but it is seen, of natural appearance, lining the sclerotica in the part free from the disease.

Although no trace of melanotic degeneration had been observed in the retina, in either of these cases, the optic nerve was discoloured in the second; and the dark tumor within the cranium was probably connected with the continuation of the optic nerve. In a case, which I examined after death many years ago, where the contents of the orbit were converted into an uniform mass of sooty blackness, the same structure was continued through the foramen opticum, and connected with a large deposit of similar colour, at the basis of the brain. The preparation is in the Museum of the Royal College of Surgeons.

The extirpation of the globe in fungus hæmatodes has been long abandoned in London, because the operation has been followed speedily and invariably by the return of disease: it is, at least, doubtful, whether there is a single well-established exception to this statement. The results of the operation have been more favourable in cases of melanosis; and it has been considered that, if the morbid growth has not made its way through the coats of the eye, the operation may be performed with the prospect of perfect success. The two cases now reported show that patients may survive the operation some months, or even some years. We learn, however, from the first case, that a long period must elapse before a patient can be pronounced completely cured, if we understand by cure se-

curity from the re-appearance of melanosis in any of its forms. Here the eye was removed at an early period, under the most favourable circumstances; the patient continued well for more than three years, and then died from secondary manifestations of disease obviously dependent on the original affection.

Dr. Argyll Robertson, of Edinburgh, has published in the *Northern Journal of Medicine* (November 1844) an interesting collection of cases, in which the eye was extirpated on account of various malignant affections. He has operated six times on account of melanosis; he states that five of the patients were cured, and that the result in one case was doubtful. After considering attentively the facts stated by Dr. R., and comparing them with the case of Elizabeth Rute, I doubt whether any one of his patients can be said to have been completely cured in the sense specified above; and I therefore conclude that in saying these persons were cured he merely means to imply that there was no return of disease in the orbit. In Case I. death took place two years after the operation from disease of the heart. Was it melanosis? Were any other organs diseased? Case II. remained well six months after the operation. Case III. died from melanosis affecting the hip and surrounding parts three years after the operation. Case IV. was well at the end of two years. Case V. died with symptoms of apoplexy ten months after the operation, having had foetid discharge from the orbit for two months before death. It is most probable that melanotic disease had occurred within the cranium in this case. In Case VI. death occurred two years after the operation. The liver was enormously enlarged and of soft texture; there was no melanotic deposit in any part of the body.

Dr. Robertson gives an enumeration of twenty-three cases from other authorities, stating that twenty were cured, while three terminated fatally from secondary melanotic formations. We cannot estimate such cases from a mere enumeration without particulars. Indeed, in order to elucidate the point now under consideration, we require complete histories of the cases embracing a considerable period of time after the performance of the operations.

If it should be found, as I think it probable, that cases of melanosis affecting the eye, always terminate fatally, sooner or later, even although the organ should be removed at an early period, by secondary formations of the disease in other parts, the malignant character of the disease will correspond to what occurs in the skin, the only part besides the eye in which I have seen melanosis as a primary affection. In all the instances that I have known, of cutaneous

melanosis removed by operation, death has ensued from subsequent affection of internal organs, generally with return of disease in the part.

Although the removal of the eye in melanosis cannot be undertaken with the promise of permanent success, it may be resorted to, should the patient wish it, as a means of prolonging life. The benefit in this respect will be greater in proportion as the operation is performed at an earlier period. Thus the patient in Case I. enjoyed perfect health for more than three years after the loss of the eye; while Sarah Keeble (Case II.), in whom the disease had made its way through the coats of the eye, survived only six months.

There may be some difficulty in recognising the presence of the disease previously to the time at which it comes through the coats of the eye. I have not seen it in the first stage, in which there is total loss of vision with little if any change in the appearance of the eye. In Case I. sight was lost without pain or inflammation; while in Case II. there was considerable inflammation with swelling. The eye remains without further change for some months, when the increase of the morbid growth distends the globe, causing severe pain and redness, and pushes forwards the lens and iris. We find at this time the iris in contact with the cornea and motionless, but not otherwise changed; the pupil rather dilated; the lens opaque, and somewhat dingy. The sclerotics soon gives way at some point or points not far from its anterior margin. In one case there was a general bulging of the tumor below the margin of the cornea. This distended portion presented a dull discolouration from the dark colour of the melanotic deposit, and its surface was occupied by large straight vessels, apparently containing venous blood arranged as closely as possible so as to cover the membrane completely. These appearances show clearly that there is an increase in the contents of the globe, and leave little doubt that the increase is a morbid growth, which must be referred either to fungus hæmatodes or melanosis. There may be effusion of fluid into the eyeball, causing staphyloma scleroticæ. The previous history of such a case will be different from that of the disease under consideration. The iris would probably be changed in colour, but not pushed against the cornea; the crystalline not opaque nor pressed forwards. In staphyloma scleroticæ from effusion of fluid the pupil is dilated to the utmost opposite to the swelling, and the iris may even disappear at that part. Should there be any doubt respecting the nature of the case, an exploratory puncture with a grooved needle should of course be resorted to before operation.

REPORT OF THREE CASES OF ANEURISM,

Treated by

JOHN HARRISON, ESQ.

Surgeon to the Bristol Infirmary.

CASE I.—W. Wood, æt. 42, a muscular man, of healthy aspect, was admitted in-patient of the Bristol Infirmary, Sept. 28, 1843, with popliteal aneurism of the right leg. The patient stated that he was a drover, and frequently made long journeys on foot, that his general health was good, and his habits temperate. He had noticed the swelling in the right ham for some months, but was not aware of any injury that could have caused it. He had been walking in his occupation, though with some difficulty, up to the time of his admission. The tumor was the size of a large orange, elastic, and pulsating. When the femoral artery was compressed in the thigh, pulsation entirely ceased in the tumor, which became smaller. A loud soufflet generally accompanied the arterial beat in the ham; this, however, was sometimes absent, particularly when the limb was forcibly flexed. The right knee measured $14\frac{3}{4}$, the right calf $14\frac{1}{2}$ inches in circumference; the left knee and left calf 13 inches.

The stethoscopic examination of the heart was satisfactory. It was determined to attempt the cure of the disease by continued pressure upon the femoral artery above the tumor. The plan of pressure was accordingly commenced Oct. 3d, by the application of Weiss' Presse Artère, one pad of which was placed over the femoral artery at the groin, and the other on a small splint behind the great trochanter. The screw was tightened, and the current of blood through the femoral artery arrested: the limb was also firmly bandaged from the foot to the groin. When the pressure was sufficient entirely to interrupt the current of blood through the vessel, the patient became very uneasy, and would seldom endure it longer than half an hour without unscrewing the tourniquet; still, a degree of pressure, allowing only a feeble pulsation to be felt in the aneurismal sac, was kept up for many days, and occasionally the current of blood through it, as before stated, was altogether arrested. A variety of alterations in the mode of applying the Presse Artère were tried with a view to lessen the inconvenience to the patient, but his irritability was so great that the plan was ultimately abandoned. This mode of treatment was, however, persevered in for a fortnight, and the collateral circulation appeared to have been decidedly influenced, as pulsation was distinctly felt in the articular arteries about the

knee, when it was completely arrested in the femoral artery by the pressure at the groin. No material alteration, however, was observed to have taken place in the state of the tumor. At the patient's earnest request that the plan of pressure should be relinquished, and an operation performed instead, a consultation was held, and it was agreed to tie the femoral artery; but the operation was postponed for some days to allow the superficial inflammation of the skin, produced by the pressure, entirely to subside.

The operation was performed Nov. 1st at 1 o'clock. A few hours previously the pulse was 86, and the temperature of the right ham 93°; left ditto, 90°. An incision five inches long was made in the usual situation, and the artery was tied in the upper third of the thigh: the ligature was composed of three threads of common brown thread. Scarcely any blood was lost during the operation. Pulsation ceased in the tumor the moment the ligature was tightened. Edges of wound brought together, and dressed very lightly. A full opiate was given shortly after the operation.

I am indebted to my friend Mr. Greig, the House-Surgeon, for the following register of the temperature and general state of the patient subsequent to the operation.

Nov. 1st, 4 P.M.—Pulse 90; temperature of right ham, 91°; left ham, 90°. 7 P.M.—Pulse 96; temperature of right ham, 94°; left ham, 90°. Feels easy; the limb looks well, and is free from congestion.

2d, 8 A.M.—Pulse 98; temperature of right ham, 100°; left ham, 96°. Has slept well; tongue dry and brown in centre; complains of sinking sensation and thirst: the right knee has decreased half an inch, the right calf three quarters of an inch; superficial veins of the right limb slightly congested.

Ordered a dose of castor oil.

8 P.M.—Bowels have been moderately moved; says he feels pretty easy. An opiate ordered.

3d, 9 A.M.—Pulse 96; temperature of right ham, 97°; left ham, 94°. Slept well; limb looks remarkably well; venous congestion subsided; circumference of right calf the same as left ditto; tongue cleaner. Another dose of castor oil.

4th, 9 A.M.—Pulse 108; temperature of right ham, 95°; left ham, 94°. Wound painful; there is some inflammation extending towards the groin and nates; tongue moist, but loaded; bowels freely relieved. Poultice to wound.

5th, 9 A.M.—Pulse 106; temperature of right ham, 96°; left ham, 96°. Wound suppurates freely, and is less painful.

6th, 9 A.M.—Pulse 100; temperature of right ham, 94°; left ham, 92°. Feels much better; suppuration healthy; bowels open.

7th, 9 A.M.—Pulse 92; temperature of right ham, 94°; left ham, 91°. Redness and swelling around wound subsiding; pus copious and healthy; tongue cleaning.

8th, 9 A.M.—Pulse 96; temperature of right ham, 91°; left ham, 91°. Tongue cleaner; feels easy.

9th, 9 A.M.—Pulse 96; temperature of right ham, 93°; left ham, 88°. A slight increase of inflammation around wound.

10th, 9 A.M.—Pulse 89; temperature of right ham, 90°; left ham, 90°. Free from pain; tongue quite clean; wound dressed.

11th, 9 A.M.—Pulse 86; temperature of right ham, 94°; left ham, 91°. Going on well.

12th, 9 A.M.—Temperature of right ham, 90°; left ham, 90°. Going on well.

13th.—The patient continued to go on satisfactorily; pulsation was to be felt at the right ankle; the temperature of the limbs equal.

20th.—The ligature came away.

21st.—Free incision was made in a small abscess which had formed near the right groin.

26th.—The wound was healed.

Dec. 13th.—Was allowed to move about on crutches.

21st.—Discharged cured.

In reflecting upon this case, it would appear probable that the pressure on the femoral artery previous to the operation, though from unavoidable circumstances it was imperfectly maintained, had acted favourably in preparing the collateral vessels for carrying on the increased circulation through them that would follow the ligature of the main artery of the thigh. The constitutional disturbance after the operation was comparatively slight. There was very little congestion of the limb, and its temperature was never below that of the sound leg.

Admitting it therefore as probable that these favourable circumstances resulted in part from the pressure thus employed, it may perhaps be worthy of consideration whether in cases of aneurism where the disease is so situated that compression upon the cardiac side of the tumor is impracticable, the temporary employment of the *Pressé Artère* upon the distal side of the aneurism, immediately below the seat of disease, might not prove serviceable in developing the anastomosing branches, and thus preparing them for their increased duty when the main artery is eventually secured by ligature above the aneurismal tumor.

CASE II.—Joseph Healey, æt. 23, unmarried, a healthy muscular man, a moulder by occupation, was admitted in-patient of the Infirmary, April 7, 1845, with an aneurismal tumor at the bend of the right elbow.

The aneurism was about the size of a small walnut, elastic, pulsating, and accompanied with a soufflet. When the bronchial artery was compressed above the tumor, the sac could be emptied by moderate pressure with the fingers. The patient had been bled a few days previously in the median-basilic vein, and the artery at the time was supposed to have been punctured.

A compress was ordered to be placed upon the tumor, and a band firmly applied from the hand to the axilla. The bandage was kept wet with cold water. This plan was pursued for about ten days, when, as the tumor was found to be increasing in size, the bandage and compress were discontinued, and Weiss' Presse Artère applied over the brachial artery, a short distance above the internal condyle of the humerus. The patient was kept in bed on low diet, and the limb placed in a moderately elevated position. Some difficulty was experienced in maintaining an adequate degree of pressure upon the artery, from the occurrence of difficulty of breathing, and pain in the head, when the instrument was applied with sufficient firmness to arrest all pulsation in the aneurismal sac. These symptoms rendered a slight relaxation of the Presse Artère necessary from time to time; firm pressure was, however, kept up during each day, with occasional relaxation, and moderate pressure in the night, until the 28th, when, the tumor appearing rather increased in size, the arm was ordered to be firmly bandaged in addition to the other treatment, and the Presse Artère to be continued.

April 30th.—Tumor decidedly harder, and rather smaller. When pressure is entirely removed, pulsation is found to be diminished.

May 15th.—The tumor is harder and smaller. The pulsation of the radial artery can be felt at the wrist when the circulation through the brachial artery is completely arrested by pressure above the tumor.

May 28th.—When the pressure is removed the pulsation in the tumor is hardly perceptible.

June 4th.—Pulsation entirely gone in the tumor. Presse Artère discontinued.

June 20th.—No pulsation has been detected in the aneurism since last date. Tumor almost disappeared.

July 8th.—Discharged cured.

In this case pressure was maintained upon the brachial artery with tolerable steadiness, but slight pulsation was seldom absent from the tumor for any considerable period, during the earlier stages of the treatment. The case is interesting from the length of time the pressure was persevered in, and its eventual success. The integument at the seat of compression was never so much inflamed as to require particular attention. Probably,

if the circulation through the sac could have been completely arrested for longer periods of time, without relaxation, the process of cure would have been much shortened, but the constitutional symptoms induced by the pressure rendered the relaxation of the Presse Artère necessary from time to time. The patient's arm was very muscular, and the pulsation in the tumor, previous to treatment, remarkably strong.

CASE III.—Edward Shellow, æt. 32, a muscular man, married, occupation a carter, and frequently employed in lifting heavy weights, was admitted in-patient of the Infirmary, June 13, 1845, with a large pulsating tumor in the right groin. His account of the origin of the tumor was as follows. He stated that three or four years ago he had a bubo in the right groin, which was punctured and discharged matter. About a month afterwards he first observed, near the seat of the abscess, a small pulsating swelling, which increased very slowly until three or four weeks since, and then began rapidly to enlarge. He said that his general health had been good up to the last month, when the increase of the tumor had been accompanied by severe pain in the inside of thigh and knee, which had almost entirely prevented sleep for several nights previous to his admission. The aneurismal tumor extended nearly half way down the front of the thigh, and to its outer side, passing upwards under Poupart's ligament, above which it could be distinctly traced two inches, involving the anterior superior spinous process of the ilium, and extending towards the internal ring. Percussion was dull in the inguinal region, but became natural about four inches above Poupart's ligament. The tumor pulsated throughout its whole extent, and a loud soufflet was always audible with the stethoscope. There was also a peculiar double beat heard above Poupart's ligament, which was not distinguishable a short distance below it. Firm pressure a little above Poupart's ligament arrested pulsation in the tumor. The right thigh, which was swollen to nearly twice the size of the other, was flexed upon the pelvis, and rotated outwards: the knee was also flexed upon the thigh. The patient was unable to extend the thigh or knee, and the attempt to do so produced severe pain. He was evidently suffering excessively; his pulse was 120, and his aspect indicated considerable constitutional disturbance; the stethoscopic examination of the heart was satisfactory. After three or four days' rest, some regular doses of opium, and an evaporating lotion to the tumor, his condition was improved, his pulse was 100, and his nights less disturbed. A consultation was held upon the patient June 17th, and an imme-

diate operation determined upon. The great size of the tumor, which, as before stated, could be felt extending two inches above Poupart's ligament, involving the anterior superior spinous process of the ilium, rendered it a matter of doubt whether the ligature of the common iliac might not be required. The line of the incision was on this account, and from the extent of the aneurismal sac, necessarily commenced higher and more to the outer side than would be required for the exposure of the external iliac. Still, the fact that the circulation through the tumor could be arrested by pressure above Poupart's ligament, favoured the supposition that the external iliac was sound, and that a ligature might be placed upon it.

The operation was performed at 2 o'clock, June 17th; an incision six inches in length, commencing about two inches above, and external to the anterior superior spinous process of the ilium, was carried downwards and inwards in the direction of the internal ring; this exposed a portion of the external oblique muscle and its tendon, which were divided on a director to the extent of the external incision. The internal oblique and transversalis muscles were next divided, and the peritoneum detached from its connexion with the fascia. This part of the operation required much caution. The vessel was now brought into view, the bag of the peritoneum being held back with a curved copper spatula by an assistant. The tumor could be felt pulsating on the outer side of the external iliac artery, apparently extending high up into the pelvis. The artery appeared quite sound above Poupart's ligament, immediately beneath which it felt rather dilated. The vessel could be easily traced with the finger beyond the origin of the internal iliac. It was somewhat displaced by the presence of the tumor on its other side, but came into view with great facility. About an inch above Poupart's ligament the artery was now slightly separated with the point of a scalpel from its lateral attachments, and the needle easily passed under the vessel. Pulsation ceased in the tumor the moment the ligature was tightened, nor was any increased pain felt by the patient where it was tied. Very little blood was lost during the operation, which the patient bore well and appeared cheerful immediately afterwards.

The edges of the wound were brought together with three sutures, dressed lightly and a bandage applied, a full dose of opium was administered, the limb wrapped in flannel, and kept in a moderately elevated position. Mr. Greig has supplied me with the following register of the state of the patient after the operation.

June 17th, 3½ P. M.—Pulse 104; temperature of right leg, 94°; left leg, 91°.

5 P. M.—Pulse 100; temperature of right leg, 96°; left leg, 91°. 7 P. M.—Pulse 98; temperature of right leg, 99°; left leg, 95°. Dosing occasionally. 10½ P. M.—Sleeping soundly.

18th, 8 A. M.—Pulse 104; temperature of right leg, 103°; left leg, 100°. Quite easy, has slept well; tip of tongue dry, the rest white; thirst. 10 A. M.—Pulse 110; temperature of right leg, 103°; left leg, 99°. 12 A. M.—Pulse 112; temperature of right leg, 101°; left leg, 100°. 4 P. M.—Pulse 108; temperature of right leg, 102°; left leg, 99°. 8 P. M.—Pulse 108; temperature of right leg, 101°; left leg, 102°. 10½ P. M.—Pulse 112; temperature of right leg, 101°; left leg, 102°. Easy, and inclined to sleep.

19th, 8 A. M.—Pulse 108; temperature of right leg, 102°; left leg, 99°. Slept well; easy; tongue dry at tip and centre. 10 A. M.—Pulse 110; temperature of right leg, 101°; left leg, 100°. Dressing removed; wound healed at the surface; slight redness above wound. Lot. Spirit. Perspires rather freely.

Liq. Op. Sed. η lv; Mist. Salinæ, ζ iss. quartâ quâque horâ.

3 P. M.—Pulse 112; temperature of right leg, 103°; left leg, 102°; 6 P. M.—Pulse 112; temperature of right leg, 102°; left leg, 101°. 10 P. M.—Pulse 116; temperature of right leg, 102°; left leg, 102°. Complaints of cough, and that the bandage is tight; bandage loosened.

20th, 8 A. M.—Pulse 100; temperature of right leg, 101°; left leg, 101°. No pain; has not slept much; tongue more moist and clean; superficial inflammation round wound subsiding; one half of wound suppurating.

Catap. panis, Enema aquæ tepidæ statim. Pil. Aloet. hss.

2 P. M.—Pulse 96; temperature of right leg, 101°; left leg, 101°. 4 P. M.—Pulse 96; temperature of right leg, 100°; left leg, 101°. 10 P. M.—Pulse 98; temperature of right leg, 101°; left leg, 100°. Bowels not moved; right leg much diminished in size.

21st, 8 A. M.—Pulse 100; temperature of right leg, 101°; left leg, 100°. 1 P. M.—Pulse 98; temperature of right leg, 101°; left leg, 100°. 8 P. M.—Pulse 96; temperature of right leg, 100°; left leg, 98°. Feels easy; slept pretty well; tongue moist and cleaning; free suppuration of wound; bowels moved copiously three times; complaints of "odd" sensation in epigast. and in chest.

22d, 8 A. M.—Pulse 98; temperature of right leg, 100°; left leg, 99°. Slept well; chest and arms very moist; easy, but for "odd" sensation in epigast. and chest. 1 P. M.—Pulse 98; temperature of right

eg, 100°; left leg, 98°. Wound doing very well; appears to think he is not going on well himself, but does not know why. 10 P. M.—Pulse 100; temperature of right leg, 100°; left leg, 98°. Excessive perspiration, confined to chest and arms.

23d, 9 A. M.—Pulse 102; temperature of right leg, 100°; left leg, 98°. Decided symptoms of tetanus, with excessive perspiration.

Hyd. Chlorid. gr. iij.; Pulv. Opii, gr. j. o. h. s. Enema, Opii statim et o. h.

1 P. M.—Pulse 118. Tetanus fully developed. Frequent severe spasms. 3 P. M.—Pulse 120; temperature of right leg, 98°; left leg, 94°. Pulse very feeble.

Frequent doses of brandy. 3ij. of Pulv. Opii added to poultice.

Tongue loaded and white as far as can be seen. 4 P. M.—Pulse 104; temperature of right leg, 95°; left leg, 93°. 5 P. M.—Pulse 113; temperature of right leg, 94°; left leg, 95°. The right leg has never perspired. 7 P. M.—Pulse 128; temperature of right leg, 95°; left leg, 95°.

Musk, gr. xx; Belladon. gr. ij.

Gum, sugar, and water are injected every hour. Less perspiration; severe spasms, with short intermissions. 8 P. M.—Pulse 131; temperature of right leg, 95°; left leg, 96°. 10 P. M.—Pulse 138; temperature of right leg, 95°; left leg, 96°. 11 P. M.—Pulse 150; temperature of right leg, 98°; left leg, 98°. 12 P. M.—Pulse 152; temperature of right leg, 98°; left leg, 97°. 1 A. M.—Pulse 150; temperature of right leg, 97°; left leg, 96°. Died at 20 minutes past 2, A. M., June 24th.

Post-mortem examination nine hours after death.

Body not emaciated; right limb much reduced in size; tumor also considerably diminished; the wound appeared nearly united in two-thirds of its extent; the superior third presented healthy granulations. The contents of the abdomen being exposed by the removal of the anterior parietes, the external surface of intestines appeared quite free from inflammation. There was a slight adhesion of long standing between the cæcum and peritoneum. The intestines were removed from the abdomen, and to preserve the diseased parts for the museum, the tumor was detached from its situation together with the pelvic vessels and nerves.

In the course of this separation, the aneurism which descended about eight inches in front of the thigh and to its outer side, covered by the fascia lata and crossed by the sartorius, was found to penetrate very deeply among the muscles, rendering extensive dissection around the hip-joint necessary

before the tumor could be disengaged from its attachments. In doing this the sac was unavoidably opened close to the joint, and between twenty and thirty ounces of dark semi-coagulated blood were discharged. A portion of the sciatic nerve, which was attached to the sac, was much removed with it. The superior division of the tumor extended several inches above Poupart's ligament on the outer side of the vessels, and, as far as the altered state of the parts, from the pressure of the disease, would permit it to be ascertained, appeared to have passed beneath the crural arch, and to have been covered by the fascia iliaca.

Continuing the dissection of the aneurismal sac and vessels now separated from the body, the femoral artery, which was lying on the front of the sac, was slit up from its lower extremity, and in its anterior aspect. The vessel was dilated until opposite the orifice of the profunda, where its posterior coat terminated abruptly in a crescent-shaped margin, the commencement of a fissure in the posterior coat of the artery; this fissure led directly into the aneurismal sac. For a short distance above this opening the vessel was rather dilated, but was quite sound at the point of ligature, which was about an inch above Poupart's ligament. A firm coagulum was found in the vessel above the ligature. The accompanying drawing, copied from an impression of the diseased parts, taken with the Daguerrotype some days after the sac had been evacuated of its contents, of course on a very reduced scale, may probably elucidate the description.

The aneurismal sac appeared to have been formed at two separate periods; that portion immediately leading from the femoral artery was composed, apparently, of a dilatation of the proper coats of the vessel, was of the size of a small orange, and communicated by an irregular opening with the larger sac. In this latter portion of the tumor the arterial tunics could no longer be traced, but its walls seemed to have been formed by condensed cellular membrane externally, and the deposit of successive layers of fibrin within. This larger sac would result from the giving way of the true aneurism, and probably occurred at the time the tumor began to increase so rapidly, three or four weeks previous to the operation.

There are some interesting features in this case. The stethoscopic phenomenon of the double beat heard above Poupart's ligament, and which was not audible below, has not, I believe, been usually observed in cases of this nature.

Possibly it might have been due to the integrity of the external iliac artery, and the presence of the aneurismal sac on the outer side of that vessel. The line of incision (which was adopted in the operation with a

view to expose the common iliac if necessary, was more extensive than that usually recommended for the ligature of the external iliac; and from the projection of the tumor above Poupart's ligament, was necessarily higher at its termination near the internal ring. No vessels requiring ligature were divided, and plenty of room, though the subject was muscular, was afforded by this

line of incision. The internal iliac artery was easily reached with the finger at the time of the operation, the external iliac being readily brought into view. The ligature was applied with but slight disturbance to the surrounding parts, and the dissection proved that no nerves were included with the vessel. It would appear probable, from the satisfactory state of the parts implicated in the operation, as evidenced by the examination after death, that had no tetanus supervened, the patient might eventually have recovered.

ANALYSIS OF THE FLUID OF HYDROCEPHALUS EVACUATED BY PUNCTURE.

WHEN first evacuated, the fluid was clear and colourless, but after standing for twenty-four hours it assumed a yellowish tint, though without becoming turbid; its sp. gr. at 66° F. was 1,010; its reaction acid; boiled either alone or with dilute nitric acid it did not become turbid. Upon evaporating a portion of it to dryness, and treating the solid residue with nitric acid, a coagulum was formed, which was readily soluble in caustic potash; boiling ether extracted nothing from this solid residue. Upon adding nitrate of silver to a portion of the fluid acidulated with nitric acid, a copious yellowish white precipitate was formed, becoming black on exposure to light: upon neutralizing the filtered acidulated fluid with ammonia, a yellow precipitate was produced, soluble in excess of the ammonia. Chloride of platinum caused in it a yellow crystalline deposit. A portion of the dry residue (left after evaporating the evacuated fluid), was mixed with hydrochloric acid and heated: upon cooling, numerous cubic crystals formed in the fluid.

It would appear, therefore, from the above analysis, that the evacuated fluid contained hydrochloric and phosphoric acids, potash, soda, and a small quantity of some substance, possibly a compound of protein, (the osmazome of chemists?); there were no traces of any salts of lime, magnesia, or ammonia; the salts of barytes did not indicate the presence of sulphuric acid. The conclusion drawn from the above results was to the effect that this fluid was not a product of inflammation, but simply the ordinary cerebro-spinal fluid, enormously increased in quantity.*—*Spengler, in Oester. Medicin. Wochenschrift*, Juli, 1845.

[* The above analysis corresponds very closely with one made by M. Barruel, (*Journal de Physiol.* tom. 1. page 95), of fluid drawn from a hydrocephalic head; not a trace of any inflammatory product, beyond a minute quantity of albuminous matter (in the ratio of 1 to 1000) being discoverable in it.]



- a, Vena cava inferior.
- b, Aorta.
- c c, Common iliac arteries.
- d, Right internal iliac artery.
- e, Ligature on the external iliac artery.
- f, Opening into aneurismal sac.
- g, Femoral artery slit up.
- h, Femoral portion of aneurismal sac.
- i, Pelvic portion of aneurismal sac.
- k, Crural nerve.
- l l, Part of abdominal muscles.

Original Communications.

ON THE
DIGESTION OF VEGETABLE
ALBUMEN, FAT, AND STARCH.By ROBERT D. THOMSON, M.D.
Lecturer on Practical Chemistry in the
University of Glasgow.*PART I.—*Digestion of Vegetable
Albumen and Fat.*

NEARLY three years ago, Dr. A. Buchanan communicated to me the fact, that he had frequently observed the serum of the blood to present a white appearance when a person happened to have been bled for some affection of such a circumscribed nature as not to interfere with the appetite or digestion; but an opportunity did not occur to me of examining this peculiar serum till the end of 1843, when Dr. Buchanan was so kind as to place some of it at my disposal. The fluid presented the appearance of thin milk, being covered, after standing, on the upper surface, with a whitish scum of a denser character than that which was diffused through the fluid. When the fluid was filtered a portion of the scum remained on the filter while the liquid passed through, possessing still a milky aspect, but obviously being deprived of a considerable portion of its denser particles. Dr. Buchanan, however, observed that this white matter might be accumulated in larger quantities, or at least collected into smaller bulk, by saturating the serum with common salt, when the white matter speedily rose to the surface in the form of a creamy layer, which did not change its physical character even when kept for months.† I found that the white matter, both when separated simply by the filter and also when precipitated, if we may so speak, by common salt, contained a substance which was insoluble in æther and alcohol, and that when dissolved in caustic potash and the solution was boiled with acetate of lead, a black

precipitate of sulphuret of lead fell*. These experiments were several times repeated carefully with the same result, and were witnessed by Dr. Buchanan, so that we had no doubt in our own minds that the presence of traces of an albuminous substance in the white matter of this serum was established; and we had subsequently opportunities of obtaining this matter in larger quantities, so as to confirm the previous experiments.

These results led to a series of researches upon the effect of food on animals, and also on man; from which it was clearly demonstrated that the white colour of the serum in healthy animals is dependent on the introduction of food into the system. The detail of one or two experiments will place this conclusion in a distinct point of view. It was necessary for this purpose to observe the characters of the serum of an individual who had not tasted food for such a space of time that the effects of the previous meal should have disappeared. On the 10th of March, 1844, from a stout young man, aged 30, who had tasted no food from the preceding evening at six p.m., two ounces of blood were taken at noon, or at an interval of eighteen hours after a meal. The blood coagulated on standing in the usual manner, and the supernatant serum was found to possess a pale yellow colour, and to be perfectly clear and limpid.

After the abstraction of the blood, the individual dined upon twenty-four ounces of a pudding consisting of two parts of wheat flour and one part of suet, seasoned with salt. At 3 o'clock, or in about three hours after the food had been swallowed, seven ounces of blood were taken by venesection from the arm. The clot formed as usual, no appearance of a buffy coat presenting itself. The serum was whitish and opaque; when heated it became more translucent, apparently from the solution of some of the solid particles diffused through it, or, as was afterwards apparent, from the liquefaction of the fatty matter diffused through the serum. The whole fluid possessed a somewhat syrupy cast of appearance, and was very heavy, its specific gravity being as high as 1029·8. Comparing this density with the average density

* Read before the Philosophical Society of Glasgow, February 5, 1845.

† See a paper on this subject by Dr. Buchanan, Proceedings of the Philosophical Society of Glasgow, vol. i. p. 226.

* This test for sulphur in albumen was employed in 1812 by Vauquelin.

of serum as we find it in physiological works, 1026½ by Thomson, 1027 to 1029 by Müller, it must be pronounced high; but as the specific gravity of this fluid has never been properly estimated in perhaps the truly healthy condition of animals, and more especially in parallel cases with that described, no conclusion can be deduced in reference to the density of the serum as compared with the normal standard. On throwing the serum upon a filter, a portion of white matter remained attached to its interior surface, while the liquid which passed through retained still a milky aspect; but perhaps the most interesting result obtained by this experiment was, that on drying the filter and holding it between the eye and the light, it was found to have imbibed a considerable amount of oily matter. The white substance remaining on the filter presented characters similar to those of albuminous or fibrinous matter.

The facts detailed having shown that there was a decided distinction between the serum of a person previous to and after taking food, it became an interesting point to pursue the inquiry, and to ascertain how long the milky aspect would continue in the blood. Accordingly, at 6 o'clock P.M., or six hours after the meal, the individual was a third time bled to the extent of seven ounces. The serum was in this case very milky, and threw up, on standing, a considerable white scum to the surface, which could be drawn up by a sucker and examined. On throwing the serum on a filter, a small portion of white matter adhered to it, possessing albuminous characters; the serum passed through with a milky colour, but no imbibition of oil could be detected on the filter itself. A careful examination of this specimen of serum could detect not a trace of starch by means of iodine and chlorine, and this led to the investigations detailed in the subsequent parts of this paper.

The inferences deducible from this experiment appear to be,—1st, that the serum of a healthy individual at a certain period of time, after partaking of a meal, is clear and limpid, and corresponds with the description of this fluid as we find it detailed in physiological works of authority; 2d, that in three hours after a meal, when

the food consists of vegetable albuminous matter and oil or fat, the albumen begins to make its appearance in the blood, while a still larger quantity of fat in relation to the amount of the albumen taken into the stomach exists in the blood; and 3d, that in six hours, while the quantity of albuminous matter in the blood can be detected, the fatty matter has comparatively disappeared; a conclusion which is completely in accordance with the chemical properties of these substances, since we know that some kinds of fat liquefy nearly at the temperature of the human body, and will, of consequence, be in a condition immediately after their introduction into the stomach to enter the sanguineous circulation along with the water present in the stomach, since that fluid appears capable of permeating with great facility the coats of the intestinal canal throughout its whole length.

To determine the manner in which the food thus passes into the circulating system, is scarcely the province of the chemist. At the same time, since it appears to exist in the current of the blood without having undergone much modification of state from that which it originally possessed in the stomach, there seem no obvious arguments to present themselves against the conclusion that the food is directly absorbed from the alimentary canal by the blood-vessels themselves.

In confirmation of the experiment already detailed, the physiological part of which was conducted by Dr. Buchanan, whose great merits as a physiologist and original observer require no encomiums from me, various repetitions on the inferior animals were conducted by myself, which it would serve no purpose to enumerate minutely, since they all conducted to the same results.

In the majority of these cases calves were fed on gruel and milk, and after various intervals they were slaughtered. The serum on examination, when the animal was killed from three to six hours after the meal, was found to be milky, and to leave a greasy stain on filtering paper when the amount of milk or fatty matter used was considerable, while the serum taken from an animal which had been subject to starvation for a space of time varying from twelve to twenty-four hours, pre-

sented generally a clear aspect. It has been frequently remarked that the serum of diabetic patients exhibits often a milky appearance, and the circumstance of the coexistence of disease with the white serum was considered as a proof that the disease was the cause of the colour of the liquid part of the blood; but it has been very properly remarked by Dr. Buchanan, that the large amount of food consumed by individuals affected with this disease, affords a satisfactory mode of accounting for the presence of such profuse quantities of albuminous and fatty matter in the blood in such instances. I have recently had opportunities of studying this form of serum through the kindness of Dr. William Thomson, and I have found no reason to conclude that the blood of diabetic patients, so far as its milkiness is concerned, is more diseased than that of healthy individuals after a full meal. It is no doubt highly probable that the blood in these instances remains for a longer time loaded with the white matter than in the healthy state of the organism, and that the appetite may, by continually urging in a new supply of food, thus produce a diminished rate of digestion or assimilation in the circulating system; but the presence of the white matter in the serum it would be erroneous to consider as a symptom of disease, at least in so far as the data entitle us to draw such an inference.

Changes produced on Starch in Digestion.—As it appeared to be a matter of importance in the investigation of the changes occurring in the stomach during digestion, in order to prevent complication of the phenomena, that the food should be as simple as possible, I have chosen for the experiments about to be detailed, cases in which animals were fed on vegetable food alone. In general the species of food selected was porridge, or a mixture of oatmeal and water well boiled. In such experiments as I have seen detailed in reference to the free acid of the stomach, there appears to have been too little attention paid to the possible results which might arise from a difference in the nature of the food. Thus the products of the digestion of starch we should naturally expect to be different from those of the digestion of animal fibrin or albumen, since we know that lactic acid can be produced

by a modification of starch, although the same change does not attend the decomposition of the animal substances enumerated. For example, in the preparation of starch an acid liquor collects on the surface of the vessels in which the starch is digested, and in the formation of *sowans* from oat-husks and water by steeping, an acid liquor is developed,—in both instances a consequence of the production of lactic acid at the expense of starch; while in the German dish, saurkraut, the same acid is generated by an analogous action. I do not at present intend to discuss the nature of the acid which presents itself in the stomach during the digestion of animal food, but simply to detail the results of a series of experiments upon the changes produced on vegetable food and starch during digestion. I shall merely content myself with stating, that I have never found a volatile acid in the stomachs of animals which were digesting animal food alone, while in these cases I have invariably found an acid to be present which was fixed at the temperature of 212° , and even considerably higher.

The nature of the Acid developed during the digestion of Starch.—It does not appear an invariable rule that an acid reaction should always characterize the liquid present in the stomach during digestion, as appears from the following experiment. On the 11th of July, 1844, the different stomachs of a sheep killed twenty-four hours after partaking of grass, contained between two and three pounds of finely-divided green matter exhibiting a pulpy consistency, but being entirely destitute of either an acid or alkaline reaction. The pulpy masses were tested in each of the stomachs with the same negative result, and they were afterwards mixed together, diluted with distilled water and filtered, but still without producing any effect on litmus paper. Experience teaches us, that to determine the presence of a volatile acid in the stomach, great care must be taken in reference to the mode in which the distillation is performed, since if the heat of an open fire is applied to the retort, an indication of the presence of hydrochloric acid will be found in liquid contained in the receiver by the addition of nitrate of silver. The following experiment affords evidence in favour of this position, and it might be

strengthened, if necessary, by the results obtained by other experimenters. The contents of the stomach of a dog which had been fed on porridge made of oatmeal and water, and which afforded an acid reaction with litmus paper, were mixed with distilled water and filtered. On exposing the distilled liquor to the heat of an open fire in a retort, a fluid passed over possessing an acid reaction, and becoming opalescent on the addition of a solution of nitrate of silver, and without disappearance in contact with nitric acid; a result plainly indicative of the presence of chlorine in some form in the liquor of the receiver, but, as appeared by the subsequent inquiries, to be explained by the fact that muriate of ammonia must have been carried over by the vapour of water in consequence of the excess of heat.

To determine in a satisfactory manner therefore the presence of a volatile acid, it is necessary to distil the fluid contents of the stomach in a water bath. With this consideration in view the following experiment was made. June 1844, a pig was fed on potatoes and greens, and was killed in half an hour after the food was swallowed. The stomach was slit open, and as much of the fluid contents as possible were poured off; the solid contents were then digested in cold distilled water. Both fluids were filtered and mixed, each previous to being united being found to exhibit an acid reaction with litmus infusion. To ascertain whether the statement made by a French physiologist (Blondlot) is correct, viz. that the acid of the stomach cannot be saturated with chalk, a quantity of pure carbonate of lime was prepared by dissolving Irish limestone in hydrochloric acid, precipitating a small portion of phosphate of lime and iron which it contains, with caustic ammonia, and then throwing down the lime with carbonate of ammonia, collecting the precipitate on a filter, washing it well with distilled water, and heating it to redness in a platinum crucible. An excess of this chalk was then added to the filtered fluid of the stomach, and the mixture was allowed to remain for twenty-four hours, disturbed only by frequent agitation. It was then filtered, and found to have been completely neutralized. Having often repeated this experiment on

various specimens of gastric fluid with the same effect, I can only account for the different result obtained by Blondlot, by supposing that he had attempted to complete his neutralization of the fluid while it was in a heated state, and that possibly, if acetic or lactic acids were present, these acids might resist neutralization at an elevated temperature, since it has been found by manufacturers of pyroligneous acid that they cannot succeed in forming a neutral acetate of lime at a temperature approaching that of the boiling-point by chalk alone, but that they require to add milk of lime in order to overcome the acid reaction. Blondlot has deduced the inference from his experiment, that the stomach owes its acid reaction to the presence of an acid phosphate of lime; but as the experiments now detailed do not coincide with those of the French physiologist, it is sufficiently obvious that they do not support him in his conclusions.

[To be continued.]

CASE OF PROFUSE PTYALISM, CAUSED BY
THE INTRODUCTION OF A SET OF TEETH.

BY ROBERT MULOCK, M.D.

MRS. R.—, residing in Ranelagh, got a set of upper teeth, with springs, attached to the teeth of the lower jaw. For a short time she felt them uneasy, but after a week's use the unpleasantness went off. At this period a profuse spitting set in, with constant thirst and nausea. She considered it to be owing to her stomach being out of order, and made use of various stomach medicines for relief. This continued for nearly three months, and when she sent for me I found her miserably reduced in flesh and strength. She had a black streak along the centre of the tongue, great tenderness and softness, so as to take any impression you made on it. I inquired the time the spitting commenced, and found it was very shortly after she got in the teeth. I requested her to leave them off except when eating, as I considered, by their causing irritation in the salivary glands, this was probably the source of her complaint. After leaving them off for about ten days, the ptyalism, nausea, and thirst ceased, and she gradually recovered strength and flesh.

The spitting was not accompanied with fœtor, but more like what is caused by the continued use of hydriodate of potash. I examined the gold plate, which was perfectly pure, but the springs, from their red colour, I think, contained a small alloy of copper.—*Dublin Hospital Gazette*, Sept. 1845.

ON CERTAIN

PATHOLOGICAL CONDITIONS OF
MILK AS THE CAUSE OF
DISEASE IN INFANTS.

(From a Correspondent.)

M. ALBERT DONNE', in his *Cours de Microscopie**, observes, "Our ignorance in the present day with regard to the characters of good and bad milk in nurses, and the mode of distinguishing that which possesses qualities requisite for the life and health of the child, from that which only affords to it an unwholesome kind of food, is so great, that it is almost impossible to find a practitioner, nurse, or even chemist, capable of giving an opinion whether a given specimen of milk be of good or bad quality. The indifference with which this important question is regarded, is no doubt in great measure attributable to the difficulty of the subject, to the insufficiency of the results which chemical analyses have hitherto afforded, and to the want of a proper method in the examination of this substance. We cannot in reality attribute it to any lack of interest, or to the trifling importance of the question, for there is perhaps none which in a higher degree concerns the public health, the happiness and welfare of families, or which more frequently presents itself for solution; and I have no hesitation in stating, that all which has hitherto been said and written on the subject of milk, so far at least as regards its peculiar qualities in relation to the nourishment of infants, is absolutely valueless. No one, certainly, is likely to be deceived by the colour, consistence, or even the taste of milk; yet nothing can be more vague than are such characters; it is impossible to attach any real value to them; and since they are based on nothing positive, each person may interpret them as he pleases; consequently the attention of medical men is directed much rather to the general health of nurses than to the properties of their milk; and the examination of this secretion, if undertaken, is performed merely as a matter of form. Undoubtedly the general health is an

indispensable condition, and one to which especial attention ought to be directed in the selection of a nurse; yet this condition is far from being the only one deserving of consideration, and it is well known that the best health is not always a guarantee for the good qualities of a nurse, or the nutritive properties of her milk; the lacteal secretion may be insufficient, or abnormal, in a woman otherwise perfectly healthy. Is it not a matter of daily observation, that one woman, although of a meagre sickly appearance, makes a better nurse than another woman of the healthiest aspect; and are we not frequently deceived as to the state of constitution by external appearances? It is evident that the organs endowed with the function of secreting milk are, so to speak, placed too much without the general economy, to allow of the qualities of this secretion being estimated by the integrity of other organs and the regularity of other functions. It is in the milk itself, therefore, that we must search for the characters of its good and bad qualities; and until we possess the means of observing its properties, and its good or bad nature in relation to the nourishment of infants, practice will be deprived of rule, the choice of nurses will be made in an empirical manner, and the determination of mothers who wish to suckle will more frequently be regulated by chance or caprice, than by reason, or with a due regard to the interest of their children." The subject has recently attracted the attention of M. Girard, who has furnished the following cases and observations*.

CASE I.—In September, 1840, a child, aged five months, was brought to me. I was informed that it was strong and vigorous when born, and that it was at once delivered to the charge of a nurse, who had been suckling for fourteen months. It shortly became uneasy, cried incessantly, and was only quiet when at the breast; it gradually grew thin, and diarrhœa was established, the stools being of a green colour. When brought to me it presented the following condition: its face was thin and pale, tongue red, with a few scattered aphthous points; belly tense; there was a bright erythematous redness over the thighs and nates; there

* Paris, 1844, page 412.

* Archives Générales de Médecine, June, 1845.

was frequent diarrhœa, the stools green; vomiting of curdled milk several times a day; the child slept badly, frequently awaking. This was the third time the child had been attacked with an almost similar set of symptoms, except that the aphthous spots now appeared for the first time, and the attack generally was more severe than the former ones, which had disappeared under the use of baths, starch injections, and abstinence from food; the diarrhœa, however, had continued. Baths, injections, gargles, were now in vain made use of, the diarrhœa obstinately remained, and the aphthous spots increased. The nurse's milk was very alkaline; it was not examined microscopically. Since the child did not mend, it was determined to change its milk, and a nurse was engaged who had only been suckling for three months. The beneficial effects of this change were very marked; in two days the diarrhœa had considerably abated, and after a week all the symptoms finally disappeared.

CASE II.—Madame S., aged 25, was on the 14th of November, 1844, delivered of her first child, a male, strong and well formed; she suckled this child for ten days, at which time her breasts becoming enlarged and painful, a nurse was engaged. This nurse was a middle-sized, dark-complexioned woman, about 30 years of age. She had no appearance of disease; her breasts were small; her milk was sweet, of good colour, consistence, and quantity, and about three weeks old. The child when delivered to her charge was in good condition, and its evacuations were healthy; but in a few days its sleep became disturbed, it grew thin; its stools became liquid and very frequent, sometimes green, at others black; it had nausea and vomiting; a bright redness extended over the thighs and nates, and the child became very restless. On the 3d of December it presented the following appearances: emaciation extreme; skin dry and rough; diarrhœa frequent; stools green; the belly tense and painful; extensive erythema over the surface of the body; some vesicles on the scrotum; constant vomiting after taking the least quantity of liquid or milk; tongue red, and, as well as the mucous membrane lining the lips and cheeks, covered with numerous aphthous spots.

I prescribed bran baths, water containing white of egg for drink, injections of linseed infusion with a drop of laudanum twice daily, and poultices to the abdomen. In spite of this treatment, however, the symptoms became more intense, the erythema extended, the aphthous spots became more confluent, ecthymatous pustules formed on the legs, the diarrhœa became more frequent, and the emaciation increased. This state of things continued until the 9th of December, when the nurse's milk was examined microscopically by M. Duforsé, and the following results obtained:—There was nothing peculiar in its colour; its consistence was that of milk containing much cream; treated with ammonia it became slightly viscous; it was neither acid nor alkaline. When a drop of this milk was examined with a microscope magnifying 300 diameters, it was observed, 1st, that the milk globules were in great abundance, such as is found to be the case in very rich milk; they were generally of a considerable size, and the largest resembled small bladders half-filled with liquid, and collapsed. Instead of having a pearl-like brilliancy, most of them, especially the large ones, were of a dull white colour somewhat resembling opal; some of them, aggregated together, formed small groups, which could be moved about in all directions, without a single globule being detached. When submitted to slight pressure, these several groups spread out so as to occupy a surface five or six times greater than they presented at first, and they assumed various forms. The smallest quantity of sulphuric ether introduced between the plates of glass dissolved a large quantity of them very rapidly. 2d, The field of the microscope was beset with roundish granular particles, perfectly colourless, and presenting all the characters described by J. Henlé, Donné, Mandl, Güterbrok, and other micrographers.

[To these particles Donné first applied the name of *corps granuleux*, and describes them as invariably existing in colostrum, but disappearing gradually as the milk becomes older; so that after about the twentieth day, and usually much sooner, not a trace of them is to be found. They differ from ordinary milk globules (with which they coexist) in form, size, general

aspect, and internal composition. They are not always globular, but present all possible varieties of form, and also of size, the smallest being about one-hundredth of a millimetre, the largest many times this size; they are slightly transparent, usually of a yellowish colour, and of a granular aspect, appearing as if composed of a number of small granules aggregated together, or enclosed within a transparent envelope. Very often there exists in the centre or some other point of these little heaps a single globule, which is apparently nothing but a true milk globule imprisoned within the granular matter. The nature of these granular bodies is unknown; *Donné* supposes that they consist of fatty matter, and a peculiar mucous substance: they are not soluble in alkalies, but like true milk globules dissolve in ether, and after the evaporation of this reagent small heaps of acicular crystals remain on the glass*. Although the existence of these granular bodies is commonly peculiar to colostrum alone, yet *Donné*† observes that they and the other peculiarities of the colostrum (as the large irregular size of the milk globules, which instead of floating free are agglomerated together into small masses) may persist for many months, or even to the end of suckling. The existence of this condition can only be discovered by the microscope, for the ordinary physical properties of milk, such as its whiteness, consistence, and other characters, are preserved; and the nurse may continue in perfect health: the child, however, usually grows thin, although it is continually at the breast, and it commonly becomes attacked with diarrhoea. The milk in this case of *M. Girard* seems to have retained many of the characters peculiar to colostrum: he thus continues the narration of it:—]

The propriety of changing the nurse was now suggested and adopted: the milk of several was examined microscopically, and one selected whose milk appeared perfectly pure. This change had scarcely been effected two days, when the diarrhoea and vomiting diminished, and speedily ceased altogether; the aphthous spots disappeared, the tongue resumed its natural colour, and the erythema faded. From

this time the child speedily recovered its good looks, and became fat, its stools being natural, and sleep good.

CASE III.—*Madame R.*, aged 28, was delivered of her seventh child in February 1842; a male, strong, and well formed. One of her children had died when six months old from an affection characterised by ardent thirst, extreme emaciation, diarrhoea, with green stools, and glairy vomiting. The present child took the breast readily, and was apparently in good health, yet vomited occasionally after suckling: the milk to all appearance was perfectly good. About the beginning of the second month the vomitings increased in frequency. Supposing that the child filled its stomach too full, the breast was given to it less frequently, and a little *cau sucrée* substituted, yet after each time of taking the breast it still vomited, though it could retain other liquids: it soon grew thin and pale, and its bowels were alternately constipated and relaxed.

Towards the middle of the second month, the following symptoms suddenly occurred: the child screamed out, ceased to breathe, and became unconscious, its face and hands assuming a livid hue: this condition lasted for a few seconds, and then passed off spontaneously, leaving the child weak and faint for some hours. Within the next twenty days the child had many similar attacks, which came on at uncertain periods, both day and night, without any obvious cause: blisters, antispasmodics, and baths, were employed, but without benefit. The vomiting still continued. The milk was now examined microscopically several times, at intervals of some days, and was found to present an enormous quantity of mucus without any other alteration. I informed the mother that it was essential the child should have other milk; this was repugnant to her, and she requested a few days delay. Eight days afterwards, the vomitings having diminished, the milk was again examined, and presented a diminution in the quantity of mucus; but it again increased after a few days, and with this increase the vomitings returned as before. The child continued to grow thin; a little diarrhoea shewed itself, and the chest affection remained. The mother, now becoming alarmed, con-

* *Cours de Microscopie*, par Alb. *Donné*, p. 400.
† Page 421.

sented to employ a nurse: the milk of seven different women who successively offered themselves, although to all appearance good, presented beneath the microscope either mucus granular bodies, or other alterations; therefore they were rejected. At length one was obtained whose milk microscopically was perfectly pure. Two days after taking this milk the vomitings entirely ceased, so also did the symptoms of asthma, and neither of them ever reappeared; the child speedily became fat, strong, and well, and remains so to the present time.

At the conclusion of these cases, M. Girard remarks, that, "without wishing to generalize too much, or to establish a theory from a few facts, is it not, however, logical to observe here a relation of cause and effect? What do we see in the second case? A severe and frequently fatal affection, which was rapidly on the increase, had resisted all rational means adopted for its removal, and which yielded with the greatest facility to a change in the milk with which the child was fed. We observe this disease to coincide with the ingestion of milk impure and of bad quality, and we witness its disappearance with a truly marvellous rapidity so soon as milk of good quality is administered. And in the third case, although the symptoms were somewhat different, yet we observe them to occur coincidently with the ingestion of impure milk, and to cease when milk of a pure quality is substituted. Is it unreasonable to conclude that certain severe pathological conditions may be produced by alterations in the milk alone, and may be dissipated even when they have attained a very high degree, by a return to milk of good quality; It would be a point of much importance to ascertain whether these alterations in the condition of milk could at any time coincide with the maintenance of perfect health in the child: also, it would be important to determine if possible whether a given alteration in milk most commonly or constantly induces such or such a pathological affection. Thus of the two cases last narrated we observe that in one a granular state of the milk induced an aphthous affection (the muguet), whilst in the other, a mucous condition gave rise to symptoms referrible to the stomach and to the lungs, at any rate that these states

were coincident with such affections. Of course it is not meant to be here implied that the pathology of infants is entirely under the influence of milk, but it seems probable that many hitherto inexplicable conditions may be so, and, moreover, that they might be explained by a simple examination of this liquid."

PENETRATING WOUND OF THE CHEST,

WITH FRACTURE OF THE THIRD AND FOURTH RIBS, PROTRUSION OF THE LUNG, AND EMPYEMA: CURE.

By W. A. SCHARF, Surgeon.*

On the 24th of May, 1842, a youth was trodden down and gored by a bull. In his alarm, he had seized hold of the animal's horns with both hands, endeavouring to free himself, and whilst in this position he was raised and tossed. When summoned to the patient, two days after the accident, I found him quite unconscious, and in a high state of fever and delirium; his respirations were short and hurried, his voice hoarse, and he had a frequent cough, with expectoration of clear frothy blood. On the right side of the chest, over and between the third and fourth ribs, two inches distant from the sternum, and about an inch and a half above the nipple, was found a wide gaping wound, about two inches broad, covered with lint. The skin around the wound was retracted, and the pectoralis major muscle was partly exposed; between the fibres of this muscle, and at the lower edge of the wound, was observed a fissure about as broad as the external wound itself, leading downwards and inwards, from which, at each act of respiration or coughing, either a bloody serous fluid or air was expelled with a hissing noise. One part of this side of the chest, extending from the third to the fourth ribs (both of which were broken in two places), was considerably depressed inwards. From the surgeon who was called in immediately after the accident, I learnt that during the first few hours the patient had lost a large quantity of blood, chiefly from

* Translated from Casper's *Wochenschrift*, Marz, 1845.

the wound, a smaller amount being brought up by coughing; also, that a portion of the third rib, about an inch and a half in length, had been forced deeply into the chest; and that close to this a piece of the lung, about the size of a walnut, was found protruded, and immoveably fixed or incarcerated. He contrived to free this piece of lung, and to return the depressed portion of rib as nearly as possible to its natural situation. These several particulars, taken in conjunction with the situation and nature of the wound, seemed to leave no doubt that one of the intercostal arteries had been wounded, and that the lung itself had been lacerated and otherwise damaged. I considered it a dangerous experiment to attempt ascertaining the correctness of this supposition by making any further examination of the wound, and was therefore obliged to be content without more information.

After venesection to the extent of twelve ounces had been performed, the patient's consciousness gradually returned, and his symptoms generally became improved. The pulse, previously irregular and intermittent, now became regular and soft; yet he complained still of a severe stabbing pain and tightness in his chest. To attempt to close the wound at this time appeared to be both useless and injudicious; the dressings were therefore replaced, covered with strips of plaster, and a wet rag was laid over all, with directions that it should be frequently changed. Internally I administered Nitre, with the Emulsio Papaveris and Aq. Lauro-cerasi, and the bowels being confined, an enema was thrown up: the strictest rest was then enjoined.

Towards evening he was much in the same condition as he had been in the morning; even worse, if anything. His brain seemed again to be principally disturbed; his expression was wild, and his face much distorted. He was constantly raving and gnashing with his teeth, and frequently vomiting. Ten leeches were applied to the head, and a few over the chest, a stimulating enema was administered, and some crushed ice, which had in the meanwhile been procured, was laid over the compress covering the wound in the chest.

On the 27th and following days his general condition became much im-

proved; his hitherto unquenchable thirst became abated, and he was able to take with some appetite, and to retain on his stomach, a little water-gruel: from the wound, however, there continued a most abundant discharge of a bloody serous fluid, which, at each effort of coughing, spirted out in considerable streams, mixed with air-bubbles: the quantity of this matter discharged was so enormous that his linen and the bed were being constantly soaked with it. By degrees this matter became thicker and more puriform, but, at the same time, very fœtid. In the course of a fortnight it had diminished considerably in quantity, yet it still remained abundant for some time longer; occasionally upwards of a pint would be discharged at once; this generally happened at times when he got out of bed, or sat upright; he could never induce it voluntarily, as by lying low on the affected side, or by placing himself on his hands and knees.

As soon as all inflammatory action had subsided, warm aromatic applications to the wound were substituted for the cold ones. The internal remedies were also changed: in the first instance, he had taken the Emulsio Papaveris; now the Infus. Cinchonæ, with or without the Acorus Calamus, was administered. A little morphia, or lactucarium, was also given to allay the frequent irritating cough. His diet likewise was made to correspond with this altered plan of treatment, in order to uphold his strength, which had been considerably reduced: thus, he was allowed a glass of new milk first thing every morning; about 9 o'clock he had a cup of broth; at noon some light animal food, with farinaceous vegetables; and in the evening some strong water-gruel.

About the fourth week, when the discharge from the wound and the expectoration had become quite puriform, and in the highest degree fœtid, the patient took, three or four times daily, a table-spoonful of a mixture composed of Solut. Calcis. Chlor. zj. , water ʒviij. ; lint soaked in a similar mixture was applied over the dressings of the wound; the room was also sprinkled with it, and, at the same time, kept well ventilated.

Under this plan of treatment the patient gradually improved. With an

increased appetite, and a better digestion, he rapidly regained his strength; the discharge from the wound progressively diminished in quantity, and, at the same time, it assumed better characters, becoming thicker and whiter. Air had ceased to be discharged from the wound about the second week. The cough and expectoration diminished in proportion as the lad's strength improved, and about the sixth week from the date of the accident, they had both entirely ceased. The sounds upon percussion, which, so long as the cavity of the pleura was filled with fluid, had remained dull, now became clearer as the respiratory murmur again became audible over the hitherto compressed lung: at the present time, they are both perfectly natural. Indeed, the boy may be considered to have entirely recovered in all respects; he breathes without the least difficulty, and both sides of his chest expand alike. The external wound was quite cicatrized on the 20th July, and since that period the lad has been enabled to follow his work, even though under most disadvantageous circumstances, for shortly afterwards he had an attack of "intermittent pneumonia," and this year he has undergone one of acute peritonitis, which terminated favourably.

EFFECTS OF TOBACCO UPON AMERICAN LAWYERS.

DR. CHAPMAN states that he was consulted by a member of Congress, in the meridian of life, and of a stout frame. "He told me that from having been one of the most healthy and fearless of men, he had become 'sick all over, and as timid as a girl.' He could not even present a petition to Congress, much less say a word concerning it; though he had long been a *practising lawyer*, and had served much in legislative bodies! By any ordinary noise, he was startled or thrown into tremulousness, and afraid to be alone at night. His appetite and digestion were gone; he had painful sensations at the pit of his stomach, and unrelenting constipated bowels. During the narrative of his sufferings, his aspect approached the haggard wildness of mental distemperature. On inquiry, I found that his consumption of tobacco was almost incredible, by chewing, snuffing, and smoking. Being satisfied that all his misery arose from this poisonous weed, its use was discontinued, and in a few weeks he entirely recovered.—*Diseases of the Viscera.*

CONTRIBUTIONS TO THE PHYSIOLOGY OF THE HUMAN OVARY.

Second Series.

BY CHARLES RITCHIE, M.D. Glasgow.

[Continued from p. 942.]

XI.—*Corpora Menstrualia vel Periodica.*

ALTHOUGH repudiating the notion that the expulsion of mature ova from the ovaries is the efficient cause of menstruation, the writer is yet persuaded, that the vascular orgasm of the sexual organs in which the menstrual condition and the corresponding state in quadrupeds* consists, is the true and exclusive source of corpora lutea. The presence of the catamenia is, indeed, no indispensable pre-requisite to the rupture of a Graafian vesicle, but, in the opinion of the writer, it certainly is to the formation of an organised corpus luteum; and, holding this view, he would humbly suggest that corpora menstrualia, or periodica, are more appropriate and eligible generic names for these bodies, than that which is in common use; while, as respects their various modifications, he would still take the liberty of designating them according to their specific physical characters, such as corpora albida, corpora cephaloidea, &c. on the principles stated at length in the former series of these contributions.

In the human subject the really organised forms of corpora periodica are found only as accompaniments of menstruation, and their varieties are produced, in the opinion of the writer, by causes which operate on the tissues of the follicles, mainly, although not exclusively, after their rupture.

Von Baer, in his fourth figure,* represents a perpendicular section of the Graafian vesicle in a female supposed to have been impregnated the day before she drowned herself, and which was not ruptured. It was very turgid, and on cutting through it he found the internal membrane separated from the external, thickened, somewhat congested condition; and on the faith of these appearances, confirmed by his observations on animals, he adduces such

* British and Foreign Review, Vol. i. *Lettre sur la Formation de l'Œuf*, p. 23.

changes as distinctive marks of impregnation, and as the result of an hypertrophy of the inner coat of the vesicle which occasions its subsequent rupture.

Wagner* says that forty-eight hours after coitus in a dog, he found the ruptured ovarian follicle much distended, and the cells of the granular membrane converted into thick oval cells full of transparent molecules; and, following the ordinary notion of the essentially gravid character of these formations, he infers that the changes mentioned were the beginnings of the corpus luteum, appearing before the discharge of the ovum.

Bischoff† met with a parallel example in a dog which had not had the male, and, while he adopts the opinion of Wagner, that the corpus luteum is produced by the evolution of the cells of the granular layer, he concludes that this occurs at the time of rut, and independently of coition, as soon as the ovum has come to its maturity.

The writer has ‡ often seen the swollen, puffy condition of the inner layer, now referred to, in the turgid unbroken vesicles of the human subject, and, also, frequently in such as had been discharged, in both cases without there being reason to suspect impregnation; and, on the contrary, dependent solely, as he presumes, on the vascular orgasm of the ovaries which precedes and accompanies menstruation. It is best observed in the larger and better organised vesicles, and suggests the idea of the projection of their lining membrane by the effusion under this of a transparent fluid at points where it does not adhere firmly to the external layer; and, in frequent instances, the adherent, or consolidated portions of the two membranes which separate these congested œdematous parts of the inner layer, and which appear as if they were empty blood-vessels, are found arranged as opaque lines, which, from their decussating each other in a regular manner, communicate to the internal surface of the vesicle a reticulated or a chess-board appearance.

In many of these cases there seems

reason to believe that the phlogosis of the vesicle, which gives rise to this effusion, is limited in its further consequences to the induction of a state of opacity and thickening in its coats; or, in other words, to their conversion into the species of corpus menstruale which the writer has elsewhere called a "white body;" but in others, the effusion is in larger quantity, and during the accompanying menstruation becomes organised as a yellow granular pulp, to which the septa which connect the two layers of the vesicle give a convoluted appearance, on account of which the writer has ventured to designate the bodies so formed as corpora cephaloidea.

Such, he apprehends, is, substantially at least, the rationale of the formations termed corpora lutea, in their primary or simple types. The two species to which he has referred,—that constituted by the opaque and thickened membranes of the Graafian vesicle, the result of a kind of inflammatory action and of effusion in their structure,—the corpora albida of these contributions; and that in which the effusion is larger in quantity, granular, supplied with vessels, and situated in a kind of crypts between the two layers of the follicle,—the corpora cephaloidea, are, he believes, the only primary forms of corpora menstrualia which ever appear, and they are strictly confined to the child-bearing period of female life, and are never to be seen except in menstruating or recently menstruating women.

A woman may menstruate for a number of times consecutively, and no corpus menstruale be produced, but this will depend either on the fact that no vesicle has been ruptured during the period, or that, if any have given way, it has been at times too remote from the menstrual nixus to have permitted them to have been influenced by it. Or, again, in such a case as is here supposed, or in others before the establishment of the catamenia, or after their temporary or permanent cessation, the coats of a vesicle may be discovered, sometimes ruptured, at others intact, and either yellow or black, and with or without a corresponding deposit in their internal surface, but such bodies are mere blood marks, in process of decomposition, and neither possess vessels nor exhibit structural changes in the

* Quoted in Bischoff's *Traité du Develop.*
p. 38.

† *Traité du Developpement*, par T. L. G. Bischoff, in the *Encyclopédie Anatomique*, t. viii.
p. 38.

‡ Contributions, *passim*.

coats of the vesicle. Corpora menstrualia, on the contrary, constantly present the imprint of organic changes.

Venereal orgasm, although it appears sometimes to occasion hæmorrhage into the Graafian vesicles, and perhaps also occasionally to rupture their coats, is too transient to give rise to any changes of structure in the latter. The peritoneum covering a Graafian vesicle is gradually absorbed, previous to the bursting of the vesicle, and may sometimes in menstruating women be seen abraded to the extent of three-eighths of an inch in length by two-eighths in breadth, while the vesicle remains intact. In such a case various causes might be competent to rupture the vesicle which might yet stop short of affecting any permanent alteration in the thickness, &c. of its coats; and this, he writer apprehends, is the true theory of the ruptured follicles often met with which have no change on or deposit within their walls.

The occurrence of the ovarian orgasm which gives rise to menstruation, soon after such a rupture, or while the walls of the vesicle are yet vascular and distensible, may still issue in an effusion between their laminæ, or in structural changes of these, which will be more or less remarkable according to the nearness of the menstruation to the rupture, and proportioned to the persistency and intensity of the catamenial excitation of the ovary;—circumstances which may probably supply the real explanation of the many instances of imperfectly formed corpora periodica which are met with both in the gravid and unimpregnated female. When a vesicle bursts after the menstrual nixus has quite subsided, there will be no granular deposit at all or any alteration effected in the layers of the vesicle; but when the rupture happens at a catamenial period, both the deposition and the changes in the coats of the follicle will be proportioned, everything else being alike, to the amount of exposure of the vesicle to the congestive action in the ovary.

When pregnancy is set up simultaneously, or immediately after the formation of one or more corpora menstrualia, the continuance of a vascular orgasm of the ovaries, which is maintained consequently on this condition, gives rise to certain modifications in the structure of the new bodies, which,

as they are always superinduced on one or other of the species of those which have been here called primary—the corpora albida and corpora cephaloidea, and then constitute bodies which possess special properties, although they are, in reality, still varieties only of the primary species which have been named, the writer would describe as secondary transformations. They are the “true corpora lutea” of authors, and, to the writer, they appear to be occasioned by the reflex influence of the congested and excited gravid uterus on the enlarged vessels, either intra or extra-parietal, of the recently-formed corpora menstrualia, and to have their point of departure from the uterus subsequent to the begun development of the fœtus; and not to be dependent, as has been supposed, on any peculiar and specific effect of impregnation as an act on the unruptured Graafian vesicles at the moment of conception.

In the species of primary menstrual body called cerebiform, the effects of utero-gestation are limited for the first two-thirds of the period to an exaltation generally of its organization. The changes wrought on it are relative merely, and no differences of an absolute or positive kind can be perceived. The granular matter is larger in quantity, its vessels more distended, and its substance more pulpy and succulent, than happens in the average of such bodies in the unimpregnated female; and the external layer of the follicle itself is often increased in its thickness, but here the distinctions cease, till, during the concluding three months, the continued plethora of the vessels of the cyst gradually communicates a rose-coloured or reddish tint to its yellow granules, and eventually converts the brain-like body into a corpus rubrum.

Again, in regard to the other form of primary menstrual body, the corpus albidum, it is worth inquiring whether the secondary increased circulation of the ovary which unquestionably follows impregnation, distinct from that which obtains as a primary and independent state at menstruation, does not also explain the fact, that in many of the corpora menstrualia met with in pregnant women, the granular matter is found arranged around the opaque coats or cadaver of the ruptured vesicle, and among the vessels which formerly

connected this with the stroma of the ovary, and not within its walls.

It is to be borne in mind that, in the formations now under notice, the nucleus of the granular matter is always a whitish double-layered membrane, destitute of blood vessels, and identical with bodies—the dense and soft varieties of corpora albidia*—which are found constantly in the ovaries of the menstruating virgin; and whether we regard the cartilaginous-like texture of the expanded inner layer in some† of the granular structures in question, so destitute of vitality that it cannot be supposed the probable centre of a vascular action which would terminate in the deposition of organizable molecules around its exterior, and so little corrugated that its denseness and consequent cadaveric nature must have existed anteriorly to this deposition; or whether we take into account the flattened, contracted, stellated, or otherwise compressed condition of that other variety‡ of the same granular structures in which the yellow matter is exuded around a *soft*, but equally inorganic white body,—there seems much reason to believe that the granular tissue in both varieties of this structure—the extra-mural cerebriiform body—is a secondary formation or deposit, which is excreted by the ovarian vessels which are external to the corpus albidum, and which had formerly served to nourish its coats when it was a Graafian vesicle. The alterations of structure in the vesicle itself, by which it passes into the state of a white body, are, according to this view, the product of the increased activity of its own vessels under the ovarian orgasm of the menstrual period, and of such a nature as terminate, whether the woman be afterwards impregnated or not, in the obliteration of these vessels; while the yellow molecules which lie exterior to the cadaveric vesicle in the bodies now under notice, are a transudation from its extra-mural vessels, produced by an augmentation of the blood in the ovaries, which, in the event of conception, occurs subsequently, and when the vessels which form a part of the walls of the vesicle are no longer patent, but those larger ones only which connect

the exterior of the follicle with the stroma.

Adopting these interpretations, the peculiarities of structure which are observed in the corpora periodica of pregnancy, and which are commonly believed to emanate from some unknown but immediate influence of the semen masculinum on the Graafian vesicles before their rupture, and are described, on this supposition, as constituting the essential features of true corpora lutea, are really occasioned subsequent to the discharge of the ova and the occurrence of fecundation, by the uterine excitement and consequent phlogosis of the ovaries to which gravidity gives rise.

The transition of the cephaloid bodies of menstruation into solid rose-coloured masses towards the end of pregnancy, distinguished as it is by being limited to that period of gestation when the uterine plethora is at its height, and by its gradual increase from its commencement, about the sixth and seventh months, till the accession of labour, when it rapidly disappears, is, indeed, conclusive on this point as it regards them; and in respect to the menstrual white bodies, and their conversion by pregnancy into extra-mural cerebriiform, or granular bodies, the writer grounds his belief of the accuracy of his view on the known facts, that the nucleus of such cephaloid bodies of pregnancy is invariably a corpus albidum; that white bodies are the most common form of ovarian bodies in the unimpregnated female; that in her they have never been found having a granular deposit on their exterior; that they lose the permeability of their coats and become inorganic bodies, at too early a period to consist with their being the centre of such an orgasm as could give rise to a granular deposit; and that, on the contrary, the size and number of the extra-mural vessels of the vesicle, immediately on its rupture at menstruation, are so considerable, and the ovarian phlogosis during pregnancy so great, that such an occurrence would be precisely what might *à priori* be anticipated; and it may be added, that while, in the intra-mural cerebriiform bodies, the arrangement of the blood-vessels of the granular matter is strictly dendritic, or corresponding to that of the parietal vessels of the Graafian follicles, those

* First Series, Summary, 16, A. B.

† Idem, 19, B.

‡ Idem, last paragraph.

of the extra-mural are more commonly arranged in lines which converge towards the inner firm of the granular matter, where it lies in contact with the remains of the follicle, now converted into a white body.

It may serve further to confirm the soundness of this rationale of what are called true corpora lutea, that the extra-mural cerebriform bodies of pregnancy, now described, undergo in common with the intra-mural cerebriform bodies of menstruation, when these obtain in the gravid female, a transformation into corpora rubra towards the end of uterogestation. Their granular matter, as the latter third of pregnancy advances,* gradually becomes more vascular and dense, till they constitute red bodies;—a change which, assuming the accuracy of the explanation offered above of their original production, may perhaps entitle them to be arranged on its accomplishment, as the tertiary formations of the ovary.

The writer, in closing this part of the argument, would mention it as an additional consideration in favour of the exposition which he has now taken the liberty of offering on the nature of the corpora periodica of pregnancy, that, should two or more Graafian vesicles have been recently and simultaneously ruptured before fecundation, the series of changes which make up the concrete of what is called a true corpus luteum, will take place indifferently in them all.†

In treating of the corpora menstrualia in their primary forms, or as they are seen in the unimpregnated female, it was attempted to explain the varieties which are met with in the perfection of their development, on the principle of their formation having been commenced at earlier or later periods of the menstrual nisis. In reference to the same bodies when modified by a consecutive pregnancy, a similar principle seems equally just when employed to explain the different degrees of their development. For, whether such modifications be effected through the medium of the arteries of the vesicle sympathising with the increased vascular activity of the uterus, or through that of its veins kept permanently distended by the increased pressure of

blood in the long and tortuous spermatic veins, it is reasonable to infer that they will be modified by the size, number, and vital activity of the blood-vessels of the vesicle at the period when they commence; or, in other words, by the relation between the date of the breach in the vesicle, and that of the menses or of the pregnancy.

It is a question deserving future inquiry, whether, as was suggested in the former series, and as happens with the Graafian vesicle when its rupture has been too distant from menstruation to permit the vessels in its coats to be affected by that function, the vessels of a corpus menstruale, from a similar length in the interval between the formation of that body and impregnation, may not also be not partially only, but wholly impervious to the succeeding reflex orgasm of this condition, before it occur, and whether the state of pregnancy, therefore, may not, in some rare instances, exist, without being succeeded by its usual characteristic sequelæ in the ovaries.

It remains to be ascertained, also, whether any morbid orgasm of the uterus, such as might accompany several of its diseases of structure, would, were it set up immediately on the formation of a corpus menstruale, be reflected backward on the latter, and modify its organization just as in pregnancy.

It is not, at least to the writer, any longer a matter of doubt, that when the ovarian granular body associated with a pregnancy, is of the species named by him corpus cephaloideum, and of that variety of this which has the yellow matter deposited between the membranes of the vesicle, that there is nothing to prevent it being found in as perfect a type in an unimpregnated as in a gravid woman; and that also whether the uterus should happen to contain a tumor after its formation, or remain healthy. The proofs of the truth of this statement are to be met with throughout the writer's former series, and receive remarkable confirmation, in particular, from the specimen (First Series, P. ii. S. i. 2.), of a tubal conception, in the corresponding ovary of which were two intra-mural cerebriform bodies not differing from those of menstruation, and not differing from one another.

Such cases, therefore, may in the present inquiry be set aside, and atten-

* First Series; Summary, 19. B. and P. ii. S. i. 5.

† First Series, P. ii. S. i. 2, 6, 7, 8. S. ii. 4.

tion directed only to the question, whether the conversion which the writer* describes as being effected about the seventh month of gestation of cephaloid into red bodies, and the variety of corpora cephaloidea in which the granular substance is arranged external to the coats of the follicle, may be possible subsistences in the unimpregnated woman?

Dr. Lee found what he calls a perfect corpus luteum, that is, an extra-mural corpus cephaloideum, [which he regards as furnishing an unequivocal proof of impregnation,] in the ovary of a woman who died from inflammation of the uterus soon after the expulsion of a mass of serous cysts; but this is not conclusive, there being much reason to believe that such hydatoid structures are nothing else than conversions of genuine ova. The writer has seen similar extra-mural deposits occur double in gravid women in whom there was not the shadow of a cause for believing that they had had, on the occasions in question, more than one conception. This, which the writer imagines is the only kind of evidence which the case admits of, is, on the assumption that it is sound, a valid ground for believing, not only that these bodies, when they exist in the gravid female, are formed subsequent to impregnation, and not in the act, and are created by a reflected influence from the gravid uterus, and not by any irritation emanating from within themselves, but also, that it is at least a possible and presumable hypothesis, that in a similar state of the vesicles consequent on their rupture at menstruation, a corresponding conversion of them into extra-mural granular bodies, resembling those of utero-gestation, might be produced by the simultaneous accession of some other increased action of the uterus than that of pregnancy.

In regard, again, to the question, whether the very vascular granular structures which the writer has named corpora rubra, may be met with in unimpregnated women, the writer has little except similar conjecture to offer. Roederer has recorded† an example of a body "*coloris carnei . . . sine cavo*" which he saw in a woman, respecting whom, *as there was no evi-*

dence of her having been with child, he supposed that she might have aborted. Solid corpora rubra,* such as appear to have been described in this instance by Roederer, and hollow red granular bodies, conversions of that modification of corpora cephaloidea termed by the writer extra-mural, do not begin to show themselves in the gravid state before the sixth month, (although their presence in general indicates a much later period of gestation,) and they rarely continue visible even when most perfect, as at the full term, so long as to allow the ordinary marks of pregnancy in the uterus, &c. to have disappeared; for which reasons Roederer's conjectures respecting this female must be held to have been gratuitous, and her case to have some weight in the present inquiry. The writer has seen† reddish cysts in menstruating women, but their constitution in regard to the absence of granular matter, and their want of solidity, was quite different from that of the fibrous rose-coloured bodies found in the gravid female. Whether such distinctions are essential or relative only, must be decided by future investigation.

Another fact of some interest in the history of corpora periodica is, that the number of such bodies found in the ovaries of a gravid female, may not only be greater than that of the fœtuses contained in the uterus, but also less.

MM.‡ Baer and Bischoff§ have seen this frequently, as it respects the ova in the tubes, in the lower animals, and they account for it on the principle that a Graafian vesicle does occasionally contain more than one ovum. The writer subjoins an example in the human subject, the recent preparation from which his description is taken having been supplied him through the polite attention of Prof. Pagan; and in attempting its interpretation according to the principles proposed in the present paper, it will be necessary either to adopt the explanation proffered by MM. Baer and Bischoff, or to presume that the two ova had been furnished by separate vesicles, but that, in the one, the changes which issue in a corpus albidum had been far too advanced, before pregnancy took place to permit even its extra-parietal vessels

* First Series; Summary, 20.

† Icones, p. 43.

* MEDICAL GAZ. 1814-5, p. 371.

† First Series, P. ii. §. vii. 11, 12.

‡ Lettre par Breschet, p. 20.

§ Op. cit. p. 34.

to be influenced by the succeeding uterine plethora and excitement.

Mrs. —, aged about 30, mother of five children, two of them born at a twin birth, nine days before death, which was caused by apoplexy connected with diseased heart. An antrum communicated with the cavity of one of the tubes by a rugous opening, and the distal end of the other was expanded into a crescentic sac. Externally the ovaries were free from linear cicatrices, and bleached, their surface presenting numerous delicate vesicles; some on a level with the peritoneum, others elevated above it, and at other places, again, were slight indentations still raw as if from the recent rupture

vesicles of the same kind. On opening one of the ovaries, a yellowish slightly oval body of the size of a dried pea, was cut through in nearly its centre. It was solid, and had a white point of the size of a small shot, of delicate opaque membrane, in its centre. There was no yellow matter in any other part of either ovary, but interspersed throughout both glands were several soft white bodies of moderate size, and still capable of having their cavities demonstrated. They were Graafian vesicles, which had been emptied, and the coats of which, slightly thickened and opaque, were compressed together.

The ovaries were put into spirit and re-examined three days afterwards. The yellow body had become of a faint flesh hue, and presented at first sight some appearance of being enclosed in a delicate capsule; on minute examination no such envelope, however, could be demonstrated, and in separating the inner opaque central spot from the surrounding granular matter, it was found to consist of a double membrane, compressed into a flat form, with prolongations of itself thrust outwards into the flesh coloured ring.

The only other matter which it occurs to the writer to add, respects a variety of corpus cephaloideum he has met with, in which the granular substance is disposed with the most perfect symmetry, but is destitute of any organised or other covering on its internal aspect. Those bodies have an exact resemblance to the most perfect corpora cephaloidea, having their inner pellicular lining either absorbed or expelled.

[To be continued.]

CASE OF PENETRATING WOUND OF THE THIGH,

WITH PROBABLE LESION OF THE FEMORAL ARTERY AND VEIN.

By EDWARD COCK, Esq.

Fellow of the Royal College of Surgeons, and Assistant-Surgeon to Guy's Hospital.

The following case, which came under my care at Guy's Hospital nearly a year ago, presents, I think, several features of practical interest and importance:—

H— P—, ætat. 26, a butcher, healthy and of temperate habits, was admitted into Cornelius ward in the afternoon of October 19th, 1844. It appeared that, in dividing a calf's head, his knife had slipped, and entering his thigh on the inner side, near the junction of the middle and lower third, had penetrated to the extent of some inches. He immediately lost a large quantity of blood, which gushed from the wound, and became faint. Pressure was applied over the part by his shopmates, and the prompt application of a tourniquet, in the usual situation, by a neighbouring surgeon, effectually prevented farther hæmorrhage. He was then brought to the hospital, where I saw him within an hour after the accident. He was in a state of complete collapse, but sensible and collected. Below the tourniquet bandage the thigh was distended with effused blood, and he complained of great pain and numbness of the whole extremity, which was no doubt in great measure occasioned by the tightness of the constriction. His countenance was pale and anxious. On relaxing the tourniquet, arterial blood flowed freely from the wound, which was about an inch in length, and extended transversely across the situation of the sartorius muscle, exposing the fascia beneath. It was evident that a large artery, either the femoral or profunda, had been wounded, and that immediate steps must be taken to secure the vessel, and prevent the farther effusion of blood, as the pressure of the tourniquet had become unbearable.

Before proceeding to operate, it was necessary to determine, with as much accuracy as possible, first, whether the hæmorrhage came from a wound of the femoral or the profunda; and, se-

condly, the probable spot where the knife might be supposed to have pierced the artery. As regarded the first question, I was guided in my opinion by the fact that the tourniquet, placed over the femoral artery, at the junction of the upper with the middle third of the thigh, and therefore below the origin of the profunda, completely commanded the bleeding, and therefore concluded that the former and not the latter vessel had sustained the lesion. To determine the second point, viz. the locality of the wound in the artery, was a matter of greater difficulty; for on examining carefully the cut in the skin, no continuous wound could be found through the fascia beneath, the correspondence between the two having been destroyed by the extravasation of blood or the retraction of the divided muscles, and I was unable either with the finger or with a probe to trace the track of the knife beyond the surface. However, the history of the accident, the position of the man when he received the *self*-inflicted wound, and his own opinion, expressed clearly and decidedly on the subject, induced me to come to the conclusion (an erroneous one, as it proved), that the knife had taken an oblique direction slightly upwards, and wounded the artery just previously to its entering the canal of the adductor magnus muscle. I therefore determined to follow the track of the wound, if possible lay bare the artery at the seat of injury, and place a ligature above and below the opening in the vessel.

The tourniquet was removed, and the artery commanded by pressure at the groin. I then made a longitudinal incision in the direction of the femoral sheath, bisecting the original wound. The sartorius was found to be divided across and retracted upwards to a considerable extent, the extremity presenting a large rounded bulbous appearance. On cutting through the fascia a large quantity of extravasated blood was brought into view, and no sooner was this disturbed and partially removed, than a copious gush of venous blood took place, and continued to flow freely, being evidently supplied from an opening in a large vein. On passing my finger into the wound and following the track of the knife, I now discovered that it had taken a direction downwards, to the extent of at least

four inches, into the popliteal space, and it appeared most probable, that the vessels, both artery and vein, were cut as they emerged from the lower opening of the canal of the adductor magnus. The great depth of the wound, and the free venous hæmorrhage, precluded the possibility of carrying out my original intention of tying the artery at the seat of its injury. The bleeding was first stopped by introducing a piece of sponge down to the bottom of the wound; and by extending my first incision upwards, and partially raising the sartorius muscle, I succeeded in exposing the femoral artery about the middle of the thigh, and placed a ligature around it. The disturbance to the relative situation of the parts occasioned by the extravasated blood, and the division of the muscles, somewhat obscured the operation; and it is remarkable that a large vein, evidently a vena cava was lying in front and to the inner side of the artery. I had no opportunity of ascertaining whether the normal vein occupied the usual situation in the sheath. The bleeding, both arterial and venous, was now effectually arrested; the edges of the wound were brought together by suture and plaster, except at the lower part where the sponge had been introduced. The limb was placed in an easy position, the leg and foot covered with flannel, and thirty drops of Tr. Opii given to the patient in julep. ammoniæ. He also took small quantities of brandy and water, passed a tolerable night, and in the course of the next day had in great measure recovered from his previous state of prostration. The limb preserved its natural temperature. During the three succeeding days he had fever with occasional rigors, and took effervescing draughts and mild diet. On the fourth day after the accident, suppuration of a healthy character had set in; the sponge was removed, the edges of the wound were approximated and supported by plaster, and he was ordered quinine with morphia at night, generous diet and moderate stimulus. The suppuration was extensive, owing to the quantity of blood which had been effused under the fascia and between the muscles, but he continued to improve in strength, and was soon able to dispense with the anodyne at night. The ligature came away on the 14th day.

The wound cicatrized very slowly, and the approximation of its edges was entirely prevented by the presence of the retracted sartorius, which protruded from between them beyond the level of the skin. For at least five weeks after the operation he continued to suffer great inconvenience from spasmodic muscular action. The slightest touch applied to the wound or to the exposed surface of the sartorius threw that muscle into a state of violent contraction, which was participated in to a minor degree by the other muscles of the thigh. Opiate applications were used, but they did not seem to produce much effect. He left the hospital, December 23d, the wound nearly healed, but presenting a line of somewhat unhealthy-looking prominent granulations, and an indurated state of the cicatrix. I saw him again towards the end of January, and little reparative progress had been made. I now put him on a course of decoction of bark and bichloride of mercury, under which the wound became firmly and soundly healed by the end of March. He had then perfectly regained the use of the limb, and suffered no inconvenience whatever from the effects of the accident.

VARICES IN PREGNANT WOMEN.

VARICES are often only troublesome during the pregnancy, and that evil may be, in general, very readily obviated by the use of the roller, and other ordinary measures. I fear, however, that an insufficient degree of attention is paid to the more severe and extensive examples of varix, both by the patient and the physician. In some such instances I have had to contend with dangerous crural phlebitis coming on after labour, and clearly taking its rise in the already diseased and distended state of the veins of the leg; and I had the misfortune, about two years since, to witness the loss of one of my patients, in whom the enormous varicose veins of the right leg and thigh were attacked, after her confinement, with phlebitis terminating in the production of pus, and all the distressing consequences of the pyogenic fever. I merely desire, at this point, to call the attention of the reader to the propriety of taking all due precautions against the development of that dangerous malady, after the delivery of the patient who is so unfortunate as to have very bad varices of the legs.—*Dr. Meigs.*

CASE OF STRANGULATED HERNIA : DEATH.

By J. M. BURTON, Esq.

On the evening of Saturday the 10th of May, I was summoned to see Mr. R—B—, residing on Blackheath, who was stated to have been suffering from bilious vomiting since noon of the previous Thursday. His medical attendant had given him aperient and saline effervescent since the period of his attack, without relief. I found him to be a thin attenuated man of sickly appearance, and about sixty-four years of age.

He stated that he had been attacked quite suddenly with vomiting, after having been engaged in moving some heavy garden pots, and that this had continued without cessation up to the present time. There was general uneasiness of the abdomen; a sense of tightness at the epigastrium; constipation since the period of attack; furred white tongue; skin natural; pulse 80 and soft.

Upon examination I found a femoral hernia of the left side. He had been conscious of the existence of the swelling since Thursday, and thought that it had been present previously to this time, but his account of the matter was not very precise, as he was not aware of the nature of it.

On using the taxis I returned a portion of intestine with a distinct gurgling sound, and with evident diminution in the size of the tumor; there remained, however, a hard swelling of about the size of a pigeon's egg which I could not reduce, and which I thought might be an old omental hernia. I was, however, so satisfied of the return of a portion of the intestine, that I did not think it advisable at this time to operate. He was ordered

To have fomentations applied to the belly ;
Cal. and Opium at night, and an aperient in the morning.

11th, Sunday.—Bowels purged once by the medicine this morning; no sickness; tongue furred; pulse 80, soft; some fulness of the abdomen. In the afternoon he had an injection which brought away a good stool.

12th, Monday.—Sickness returned in the night, and now severe; abdomen more tumid and tender; pulse

80; skin cool; tongue furred. Under these circumstances, my friends Mr. Busk and Mr. Sams, who saw the patient, concurred with me in the propriety of cutting into the hernial sac, and examining its contents. Having exposed the sac, I made a careful incision into it: there was a very small quantity of fluid effused, and, as we had supposed, the contents consisted of a portion of omentum only. Mr. Busk (whose admirable judgment and skill are well known to the profession), as well as Mr. Sams and myself, made a most careful examination to satisfy ourselves upon this point. The omentum which was strangulated was only slightly congested; the stricture required free division before I was able to return it.

He was ordered gruel, toast-water, and to continue the fomentation.

Evening. — No sickness since the operation; very little tenderness; pulse 80; no pain in the wound.

13th.—6 A. M. Abdomen distended; some tenderness in the left iliac region; no stool; pulse 92; tongue furred, rather brown, and general feeling of uneasiness, though he had had a tolerable night.

Let him have a common injection, Cont. Fetus, Cal. et Opium 4tis horis.

Evening.—He had had four or five copious faecal evacuations; tenderness less; wound healthy, apparently uniting; pulse 92, soft.

14th.—Had had some rest in the night; tenderness much less; bowels not acted since yesterday afternoon; tongue cleaning; no sickness; pulse 80, soft.

Beef-tea; Cont. alia.

10 P. M.—He had vomited just previously to my visit; pulse 92, intermittent; no increase of pain; bowels confined; evidently much changed.

Enema commune.

15th. — Restless night; bowels moved; countenance anxious; pulse 92, intermittent; belly tympanitic—offensive discharge from the wound, the edges of which are assuming an unhealthy appearance; pulse 100; skin cool.

Appl. Cataplasma Vulneri; Cont. alia.

16th.—Bad night; very low, evidently sinking; the edges of the wound gangrenous.

17th.—Died at 1 P. M.

Post-mortem, twenty hours after death.

Body much emaciated; edges of the wound widely open and gangrenous. The whole tract of the intestines inflated, congested, and agglutinated at all points by recently effused lymph, with pus contained in the interstices. The portion of ileum which had been strangulated was adherent by a small point to the neck of the sac just within the crural ring. It comprised the whole calibre of the gut, and it was most distinctly defined by the impress of the sharp edge of the stricture, and completely gangrenous, so that it was lacerated directly upon attempting to remove it. There had, however, been no escape of faeces during life.

The omentum which had been returned at the time of the operation formed a sort of valve at the crural arch, preventing any protrusion from the abdomen, though the finger could be readily passed into it from the wound.

This appears to me to be an interesting case, inasmuch as it raises a practical question. It is evident that I returned the intestine by the taxis on the Saturday evening when I first saw the patient, and that the injury done to the gut by its delay within the stricture for sixty hours before any attempt was made at reduction, so far destroyed its integrity, as to produce gangrene of the portion which had been strangulated; the gangrene not being the result of the general inflammation, as it was confined entirely and distinctly to the part of the bowel which had been strangulated.

It becomes, then, a question, whether, when a hernia has been strangulated for so many hours, it would not be better to cut into the sac at once, and examine the condition of the intestine, than to endeavour by the taxis to return it into the abdomen in its possibly irretrievably injured state. I must confess, that should I unhappily be ever again called to a case of this nature, where strangulation had existed for so many hours, I should feel much inclined to operate at once, especially if, as in this instance, the hernia were femoral, in which case the tightness and unyielding texture of the stricture add so much to the danger of delay.

Croome's Hill, Greenwich,
Aug. 16th, 1845.

MEDICAL GAZETTE.

FRIDAY, OCTOBER 3, 1845.

THE Medical Schools of Great Britain are at the present time in a somewhat singular position. Students are about to commence their medical education under rules and regulations, which in all probability will be entirely changed by the Physic and Surgery Bill to be introduced early in the next Session of Parliament. Some anxiety has existed respecting the probable effects of the measure upon those who have already begun, but have not been able to complete, their studies under the old system. Will the number of lectures at which attendance is, or rather *should be* given, be reckoned as heretofore? Will the exact boundary of summer and winter courses be insisted on, or may what is now a summer course be attended during the winter Session? These and other questions naturally present themselves to students who are desirous of completing their education with all possible expedition, and at the same time of not compromising their future prospects by a non-observance of any of the intricate regulations devised of late years by the Apothecaries' Society. It is fortunate that this subject has already attracted the attention of our legislators, or the result might have been, from the uncertainty whether the new measure would have a retrospective effect,—a complete stagnation in medical education, and a "long vacation" for students and professors.

In the last Medical Bill, it is expressly provided by the 14th clause,— "That it shall be lawful for the Council of Health to make regulations for dispensing with such provisions of the act, as to them shall seem fit, in fa-

vour of medical and surgical students who shall have commenced their professional studies before the passing of the act." Thus, then, those who have *bonâ fide* commenced their studies, will not be prejudiced by the provisions of the new measure, nor will they derive any benefit by deferring the commencement of them until this has become law. While matters were in a state of uncertainty, a student might well hesitate about the best mode of proceeding; but his course is now plain. It may seem absurd to commence a medical education, under regulations so unnecessarily complex as those of the Apothecaries' Society, with the certainty that they will either be considerably modified, if not altogether changed, before another year has elapsed; but it must be remembered that the only plan which can be safely adopted is, to obey a law until it has been repealed. Any one who shapes his course upon a legislative contingency, and neglects the present rules respecting medical education, may hereafter find himself exposed to the mortification and delay of having to recommence his studies. It is the more necessary to call attention to this subject, because some students may entertain the notion, that in the unsettled state of the Medical Reform question, they can deal as they please with regulations which are likely to be so soon abolished.

While we are disposed to give the Apothecaries' Society credit for the best intentions, in framing their successive curricula from 1831 to the present time, for improving the profession and calling forth a higher grade of practitioners, we cannot shut our eyes to the fact, better expressed by an able critic elsewhere,* that they have acted on the principle of considering "*lectures*" the only road, or at least the principal road to knowledge

which is open to a student. They are not alone in this respect: it is, we fear, a common error even with some who have a practical acquaintance with teaching. We remember hearing an eminent professor in a northern University remark, that it was impossible chemistry could be so well taught in London as in Edinburgh, because in the London schools it was not customary to give a daily lecture on that subject! By those who reason in this way, it appears to be entirely forgotten, that lectures are only the means to an end. A man cannot become an anatomist by attendance at so many lectures for so many sessions, but by working in the dissecting room; nor can he become a chemist by a mere attendance at one hundred lectures on Chemistry, unless at the same time he have full access to a chemical laboratory. The Apothecaries' Society do not appear to be at all aware, that ten hours passed in a laboratory under proper superintendence, are far more profitable to a student, than fifty hours passed in a theatre, listening to a like number of lectures.† They do not appear to be aware of, or they entirely overlook, the important fact, that all well-educated medical men are to a great extent self-educated; and that actual observation and practice, and not theoretical teaching, based upon a sort of Prussian military discipline, have made all the great men of our profession what they are and have been. We do not wish to underrate the value of lectures, as adjuncts to a good medical education, but we are satisfied that the Society considerably overrate their importance; and we should have as a result, if their rules were strictly observed, that students would be over-lectured and under-taught! All evils of this kind, how-

ever, tend to remedy themselves, and by a kind of vicarious attendance on the part of the pupils of a class, some making up one day or one week for the absence of others on another day, and in another week, the fifty or sixty lectures are gone through,—the certificates are signed, the candidates pass their examinations, and the Society flatter themselves that all this is due to an observance of a curriculum as vexatious to the teacher, as it is profitless to the student.* According to the present regulations of the Society, a candidate is bound to produce certificates of having attended rather more than *one thousand lectures*!† Then it is ordered, that one subject must be attended only in winter, another only in summer, one only in the first session, another only in the second, and others again in the third,—every teacher being compelled to deliver, but no student being compelled to hear, fifty lectures on one subject, sixty on a second, and one hundred on a third! It is preposterous to suppose, that such a system can work well; it may be,

* The Society attach much more importance to their system of registration, as evidence of attendance at lectures, than it really deserves. Provided a student *personally* register the class for which he has taken a ticket, he may leave London the next day, and not attend a single lecture. An instance has been communicated to us on good authority, where a pupil registered himself for a course of lectures on the last day which the rules admitted; he then returned into the country. The *only* lecture which he attended through the whole course, was on the day on which his ticket was taken out. A certificate presented by that pupil, would be received without hesitation, and all know how easily such documents are obtained, provided only the *forms* have been observed. In another case, a student who had attended diligently during the greater part of a course of lectures had very great difficulty in passing his schedule, because he had omitted to register himself personally for the particular course within the prescribed time. In a third, a student who could have attended a course of lectures during the *first* summer session, was not permitted by the rules, *i. e.* he was told that his attendance would pass for nothing, because the course was fixed for a *second* summer session. When the time came round he entered; but as he was then engaged in other matters he could give only a nominal attendance at the lectures. This appears to us to be very like sacrificing the substance for the shadow.

† *i. e.* including the Lectures on Anatomy and Physiology, with Demonstrations, "in conformity with the regulations of the Royal College of Surgeons of London in every respect."

* Instruction in Practical Chemistry is required, but this is a mere form, unless the pupil attend a distinct laboratory course, for which a distinct fee is usually paid.

and is, outwardly obeyed, and if the profession has improved under it, we verily believe that the improvement has taken place in spite of, and not in consequence of, this medico-military discipline. If the Classical Department of King's College, laid down for the proprietary schools connected with it, a rule to the effect, that the Italian language should only be taught in summer, and in not less than fifty lessons, while German should be taught only in winter, in not less than sixty, it would be a piece of absurdity which would in the end defeat its object. No less absurd is the present system of licensing persons to teach certain subjects, and then binding them down by the closest restrictions as to the times and seasons, and modes, in which their instructions should be conveyed. If they have not the means or capacity to teach, why license them?—if they have, why interfere with them in matters, upon which as practical men, they must be the best judges? Let it suffice that their pupils are proved to be well informed in the subjects taught by a *proper system of examination*, and let it be quite indifferent whether that knowledge was acquired by a hypothetical attendance on thirty, forty, or fifty lectures, provided that a certain period has been devoted to the study of the profession.

How much superior in this respect is the curriculum of the University of London! The Council of the University do not concern themselves either about summer or winter sessions; they do not fix the number of lectures for each subject, or the seasons of the year during which the student must attend them; they leave to him some choice as to the best mode of occupying his time, and do not force him to attend to one subject when he might be perhaps more conveniently, and with greater benefit to himself, giving

his attention to another*. This we think obvious,—that rules of this kind are far better adapted to lay the foundation of a sound medical education, than those which enter into such trivial particulars. We very much doubt whether the students, whose names are registered at the Hall, attend one half of the lectures prescribed by the regulations; and as a large number, (eighty-seven per cent.)†, receive their diplomas, we are entitled to assume, that the regulations in their present shape, so far as students are concerned, are a dead letter. The lecturer may give the specified number within the specified time, and thus perform his part of the duty; but we apprehend that the intention of the Society in framing their rules, was not so much that the lectures should be delivered by teachers, as that they should be attended by pupils? The practical result however, is, that a large amount of labour is thrown upon the teacher, while there is no corresponding benefit to the student.

We sincerely hope that in the laying down of new curricula under the future Medical Reform Bill, the inutility of such petty interference will be shown by the abolition of these rules, and by the establishment of a medical curriculum similar to that of the University of London;—*i. e.* one requiring a certain period to be devoted to study in a medical school, provided fully with the means of teaching theoretically and practically; as well as attendance on certain courses of lectures, without reference to their exact number, their duration, or the particular season of the year at which they may be delivered.

* The Royal College of Surgeons of Edinburgh whose curriculum involves an extensive course of study, judiciously recommend an order of study, but do not *absolutely enjoin it*. The Apothecaries' Society entirely forget the wise Italian maxim,—"Chi tutto abbraccia nulla stringa."

† Vol. xxxv. p. 942.

Reviews.

Outlines of Chemistry, for the use of Students. By WILLIAM GREGORY, M.D. Professor of Chemistry in the University of Edinburgh. Part II. Organic Chemistry. London: Taylor and Walton. 1845. Sm. 8vo. pp. 352.

IN our last volume* we had occasion to notice the first part of Dr. Gregory's *Outlines of Inorganic Chemistry*. We have now before us the second part, which completes the work, treating of Organic Chemistry. The first circumstance which strikes us in this treatise is, that Dr. Gregory has completely reversed the plan hitherto pursued by chemical writers. Under the old system the Organic Chemistry formed about one-third of the volume, or something less. In Dr. Gregory's *Outlines* this subject occupies about three-fifths of the work. We do not look upon this as a fault, for the attention of the profession has been, during the last five years, closely directed to this branch of the subject, as the source from which great improvements in medical opinions and

practice, are likely to spring. In a modest and well-written preface, the author apologizes for the brevity of the "Outlines," which, he says, are chiefly intended as a text-book for his own lectures. It would, therefore, be unfair to compare them, in extent of matter, with the more elaborate treatises of Brande, Turner, and Graham.

The author, it is well known, is a strenuous advocate of the doctrines of Liebig; hence his plan of treating the subject is based on the principles of the science as it is taught in the University of Giessen. As a specimen, we shall quote the remarks which he makes on the Compound Organic Radicals.

"A compound organic radical is a substance which, although containing two or more elements, enters into combination with elementary bodies as if it were itself elementary, and in ordinary circumstances performs exactly the part of an element.

In the first part of this work, we have already admitted as probable the existence of inorganic compound radicals, such as SO_4 , the radical of sulphuric acid, and NO_6 , that of nitric acid. These bodies are, in their relations to others, entirely analogous to chlorine. Thus we may represent the acids of these three radicals, with their potassium and silver salts, as follows:—

	Acid.	Potassium Salt.	Silver Salt.
Radicals {	Chlorine	$\text{H} + \text{Cl}$	$\text{Ag} + \text{Cl}$
	SO_4	$\text{K} + \text{SO}_4$	$\text{Ag} + \text{SO}_4$
	NO_6	$\text{K} + \text{NO}_6$	$\text{Ag} + \text{NO}_6$

"The compound inorganic radicals, SO_4 and NO_6 , therefore, perform exactly the part of a metalloid of the group of chlorine.

"But there have also been briefly mentioned, in the first Part, certain compound organic radicals, which not only exhibit, in their relations, characters analogous to those of chlorine, but actually exist, like chlorine, in the separate state, which is not the case

with SO_4 and NO_6 , these latter being only known in combination.

"The organic radicals here alluded to are Cyanogen $\text{C}_2\text{N}=\text{Cy}$, and Mellone $\text{C}_6\text{N}_4=\text{Me}$ (see Part I., p. 121). They may be compared to chlorine exactly like the two above-mentioned inorganic compound radicals. Thus,

	Acid.	Potassium Salt.	Silver Salt.
Radicals {	Chlorine Cl	$\text{H} + \text{Cl}$	$\text{Ag} + \text{Cl}$
	Cyanogen Cy	$\text{H} + \text{Cy}$	$\text{Ag} + \text{Cy}$
	Mellone Me	$\text{H} + \text{Me}$	$\text{Ag} + \text{Me}$

"Cyanogen and Mellone are, therefore, radicals of the nature of the chlorine group of metalloids. The bisulphuret of cyanogen, or sulphocyanogen, $\text{C}_2\text{NS}_2=\text{CyS}_2$, although it contains three elements, plays the same

part as chlorine or cyanogen, and forms with hydrogen the acid $\text{H} + \text{CyS}_2$, and with potassium the salt $\text{K} + \text{CyS}_2$.

Some compound organic radicals appear more analogous to the combustible group of metalloids, that is, to carbon, sulphur, or

* Vol. xxxv. p. 678.

phosphorus; inasmuch as they form acids with oxygen, or rather with the elements of water like those metalloids, and are besides capable of entering into combination with chlorine, iodine, &c. Such radicals are carbonic oxide, C O , or rather an isomeric modification of it, $\text{C}_2 \text{O}_2$; acetylc, $\text{C}_4 \text{H}_3$; and formyle, $\text{C}_2 \text{H}$. Each of these may be viewed as the radical of a powerful acid; for $\text{C}_2 \text{O}_2 + \text{O} = \text{C}_2 \text{O}_3$ is dry oxalic acid; $\text{C}_4 \text{H}_3 + \text{O}_3$ is dry acetic acid; and $\text{C}_2 \text{H} + \text{O}_3$ is dry formic acid. Again, the first forms with chlorine the compound $\text{C}_2 \text{O}_2 + \text{Cl}_2$,

called phosgene gas, or chlorocarbonic acid, while the two others yield $\text{C}_4 \text{H}_3 + \text{Cl}$, the chloride of acetylc, and $\text{C}_2 \text{H} + \text{Cl}_3$, the perchloride of formyle.

Further, there are organic compound radicals which play the part of metals, forming salts with chlorine, iodine, sulphur, cyanogen, &c., and yielding, with oxygen, compounds possessing basic properties analogous to those of metallic oxides. Such radicals are ethyle, $\text{C}_4 \text{H}_5$, methyle, $\text{C}_2 \text{H}_3$, and kakodylc, $\text{C}_4 \text{H}_6 \text{As}_2$.

Radicals.	Oxygen Compound.	Chlorine Compound.	Cyanogen Compound.	Sulphur Compound.
Ethyle $\text{C}_4 \text{H}_5 = \text{Ae}$	Ae O	Ae Cl	Ae Cy	Ae S
Methyle $\text{C}_2 \text{H}_3 = \text{Mt}$	Mt O	Mt Cl	Mt Cy	Mt S
Kakodylc $\text{C}_4 \text{H}_6 \text{As}_2 = \text{Kd}$	Kd O	Kd Cl	Kd Cy	Kd S

"Lastly, there are some compound organic radicals which partake of the characters of the two last groups, forming, like the acetylc group, acids, and not bases, with oxygen; but yielding with chlorine, sulphur, cyanogen, &c., compounds analogous to those formed by the ethyle group. To this division belong Benzoylc, $\text{C}_{14} \text{H}_5 \text{O}_2 = \text{Bz}$; Cinnamyle, $\text{C}_{18} \text{H}_8 \text{O}_2 = \text{Ci}$; and several others. Benzoylc and cinnamyle, with the addition of oxygen and the elements of water, produce benzoic acid Bz O, HO , and cinnamic acid, Ci O, HO . This group is characterised by forming with hydrogen certain essential oils. Thus, benzyle yields, with hydrogen, the essential oil of bitter almonds, Bz H ; cinnamyle yields the oil of cinnamon, Ci H ; and salicylc, $\text{C}_{14} \text{H}_5 \text{O}_4 = \text{Sa}$, another radical of this group, forms, with hydrogen, the oil of spiræa, Sa H ." p. 244.

Clever as this exposition is, we fear that it will be as unintelligible as Coptic or Sanscrit, not only to practitioners, but to the present race of students, who are apt to look very closely to what concerns them in their examinations. There is, however, this consolatory reflection, that the examiners would themselves have to go to school again before they attempted to ask questions upon one-half of the subjects introduced into this volume on Organic Chemistry. Without intending any disrespect to the examiners of the University of London, or the Apothecaries' Society, we do not think that there is one among the whole body who could describe off-hand the symbolical differences between the *Oxalate* and *Oxamate of the Oxide of Methyle*, (p. 397), the composition of chloro-

phrenic acid (511), or the construction of cinnamic acid from cinnamyle! The candidates for the diploma are therefore safe for the present.

We agree with the author, that scientific chemistry has been too much neglected in this country; but it is questionable whether a taste for it can be revived by the introduction of a cumbrous nomenclature founded on hypothetical postulates—whether, indeed, the student will not be discouraged by finding the properties of substances drowned in symbols and formulæ. This appears to us to be a defect in the work before us. We turn over the pages, and we continually meet with rows of symbols and formulæ, as well as names, with which it would be a matter of despair to charge the memory. Dr. Prout long since entered a protest against the barbarism of Liebig and Wöhler's new terms, and he expresses himself by no means satisfied that the doctrines on which they are founded are satisfactorily established. The remarks on this subject made by another eminent English chemist (Brande) are so apposite, that we shall here quote them. "The nomenclature which, among the continental chemists, is creeping into organic chemistry, cannot, I think, be too strongly protested against by all who are engaged in teaching chemistry. Neither arrangement nor nomenclature are of much importance to those who have advanced far into, and are familiar with, the more complicated details of the science; but to the student, the capricious and hypothetical terms which

are in vogue are either unintelligible, or, what is worse, are calculated to mislead and embarrass*."

Dr. Gregory adopts Liebig's dynamical theory of fermentation. Thus he says:—

"The only explanation we can give is, that the particles of these bodies (ferments) being in a state of decomposition, are in motion; and by communicating mechanically an impulse or motion to the particles of sugar, destroy the balance of affinities, to which the existence of sugar is owing, and thus give rise to a new balance or equilibrium, more stable under the given circumstances." p. 392.

If we have rightly understood Liebig's hypothesis, *i. e.* that fermentation consists in motion transmitted *mechanically* from one body in motion to another at rest, we must confess our surprise that so clever a man should not have perceived the fallacy involved in it. One part of ferment will excite active fermentation in *thirty* or *forty* parts of the fermentable substance, and will still continue in a state of fermentation (or motion) itself. We had always supposed it to be an axiom in mechanics that one body in motion could not give to another at rest more motion than it possessed, and at the same time lose nothing! One particle, it appears to us, cannot give a like amount of motion to thirty particles; while it is certain that after it has parted with its motion to *one* particle it would become quiescent. Fermentation cannot, therefore, be due to any mere *mechanical* transmission of impulse; for if this were so, the laws of mechanics must be completely subverted to render the hypothesis tenable.

We think the author has devoted more space to descriptions of the hypothetical constitution of bodies than to an account of their chemical properties; for although we do not lose sight of the fact, that the work is intended only as a text-book for lectures, yet we should have preferred a little more of practical chemistry, and we would have sacrificed altogether the account of such substances as the aldehydite of ammonia, and the salicyluret of ammonium, for some additional details on certain well-known and familiar compounds. The work is, however, well written, and appears to us to be a fair exposition of the doctrines of the

Giessen school of chemists; for at present, from the peculiarity of their views, they must be content to form a distinct sect.

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The Transactions of the Provincial Medical and Surgical Association. Volume xiii. (the First of a New Series). 8vo. pp. 418. London: Churchill, 1845.

THE members of the Provincial Medical and Surgical Association are fortunate in being able to add this important volume to their libraries. Its contents embrace subjects which are not merely of present or limited interest; it will always be valuable as a work of reference, and the large number of topics of general medical information comprehended in its pages recommends it to practitioners of all classes.

The volume commences with *The Retrospective Address delivered at the Twelfth Anniversary Meeting of the Association, by Charles Cowan, M.D.*, which comprehends an admirable digest of the history of practical medicine during the preceding year. Dr. Cowan's arrangement of the immense number of facts with which he has had to deal is lucid and careful, and the facts themselves are judiciously chosen and well condensed. The compilation is not merely useful for purposes of reference; it may be advantageously read from beginning to end by every one who desires to keep pace with the march of his profession.

The second article is a "*Retrospect of Anatomy and Physiology, for the year 1843-4, by William Budd, M.D.*" We have here a collection of recent physiological discoveries, which is formed somewhat upon the plan of Mr. Paget's Reports in the British and Foreign Medical Review, but it is more devoted to physiology, and contains longer details upon each subject. The physiological portion is principally made up of extracts from the following papers. MM. Dumas and Cahours on the "Neutral Azotized Matters of Organised Bodies." Mulder on the "Oxidation of Proteine." MM. Dumas, Boussingault and Payen on the "Fattening of Cattle and the Formation of Milk." The Researches of M. Blondot and Dr. Percy on "Digestion," and of M. Boisson and Dr. Th.

* Manual of Chemistry, 1068.

Schwann on the "Bile." Scharling on the "Elimination of Carbonic Acid;" and Liebig on the "Urine;" with the principal facts of M. Chossat's work (*"Recherches Experimentales sur l'Inanition."*) The anatomical part contains a notice of M. Foville's work on the "Anatomy of the Brain and Spinal Cord." Drs. Stilling and Hannover on the "Spinal Cord and Medulla Oblongata." Dr. Marshall Hall's new memoir on the "Nervous System," and Mr. Newport's "Researches upon the Nervous System of the Myriapoda;" the Report concludes with a sketch of Matteucci's discoveries on the "Electric Phenomena of Animals." Dr. Budd has arranged these interesting materials very neatly, and has given all the leading details in a full and clear manner. Reports of this kind are of great value to anatomical teachers and senior students. Should Dr. Budd continue these reports from year to year, they will at length form a work of considerable interest.

This is followed by an Essay of *The Varieties, Causes, Pathology, and Treatment of the Inflammatory Affections of the Retina, by Edward Octavius Hocken, M.D.* We do not perceive that Dr. Hocken's paper advances any novel views, but it is a well-condensed abstract of the opinions of the best authorities upon these somewhat rare forms of disease, judiciously commented upon by the author, and illustrated by several apposite cases.

Mr. John Green Cross's Essay, Literary and Practical, on Inversion Uteri, is a very elaborate work, evidently the result of much discriminating research. The manner in which the various stages and degrees of inversion are arranged and exemplified by cases from numerous ancient and modern authorities, is particularly worthy of praise. This paper is illustrated with numerous well-executed lithographs and woodcuts.

The volume concludes with a *Case of Congenital Malformation of the Urinary Organs, by Henry Giles, Esq.* The subject of this case is about 22 years of age, in good health, and capable of considerable exertion; he is small, but not ill formed, with the exception of the parts to be noticed. A tumor presents itself at the lower part of the abdomen, of a bright red

appearance: this on examination is found to be the bladder, presenting its mucous surface without any covering or protection. It passes from its proper cavity beneath the symphysis pubis, and between the cruræ of the corpora cavernosæ of the penis, previous to their union; after passing under the pubis it turns upwards and rather backwards, overlapping the symphysis, and pressing against the centre of the lower part of the abdomen, which has become concave for its reception, giving the idea, at first sight, that it passed out above the symphysis. The protruded portion is generally about two inches in diameter; sometimes it is larger, at others smaller, contracting so much that it could be covered with a shilling, and appearing as though it were likely to be completely withdrawn. The narrator formed an idea that this state was produced voluntarily, but found him incapable of exercising the least control over it. Externally and inferiorly, on both sides, the ureters open on the exposed surface, from which the urine is seen oozing, generally in drops; but if a little liquid be given him, it is thrown out in a single jet*; this is also the case on his rising, after lying down for a few minutes; very little forms during the night; it is at all times exceedingly acrid, and deposits large quantities of sand. Immediately under the protruded bladder, and to some extent supporting it, are the rudiments of a penis; it seems to be formed chiefly of the corpora cavernosa, united along their inferior and internal margins; superiorly they are turned outward, and form a flat surface, on which, as above stated, the bladder rests; this is covered with a sort of fibrous membrane, which presents several openings of various sizes. There are no traces of either an urethra or glans penis. At the union of the corpora cavernosa anteriorly, is placed a species of frenum. The scrotum is well formed, and the testicles fully developed. He occasionally experiences strong venereal excitement; the penis at these times becomes somewhat distended and elongated; the seminal fluid oozes between it and the bladder. From constant efforts to protect the parts in walking, the inferior extremities have

* An interesting physiological fact.—Ed.

become bent outwards at the knee, making his gait extremely awkward.

At the time of his birth, only a small opening existed at the bottom of the body [lower part of the belly ?] through which the urine ran: this continued until he was six or eight months old, when a small tumor began to protrude, gradually increasing in size.

A case, in some respects similar, is reported in the *Memoirs of the Academy of Sciences* (Paris) for the year 1761.

Hospital and Infirmary Reports.

DREADNOUGHT HOSPITAL SHIP.

CASES REPORTED BY MR. W. CLAPP.

1. *Hernia complicated with Hydrocele.*

DAVID SCOTT applied at the hospital, on the 12th of June last, with a large pyriform tumor, which extended from within the external abdominal ring on the right side, to the bottom of the scrotum, and which latter was pretty much distended by it; it had an elastic feel, was without transparency, and dilated through its whole extent on each act of coughing; no change in size or form took place on the patient standing or lying down, and its neck was traced upwards within the inguinal canal; the testicle could be indistinctly felt at its lower and back part. These characters would at first have led to the suspicion of its being a hernia, which with its sac was irreducible through adhesion, (there being no symptoms whatever of strangulation present), but a fluctuation in the tumor strongly indicated the presence of fluid. On now pressing him more closely as to its history, he stated that he had on a former occasion "ruptured himself," that the tumor had continued to increase from that time,—and that on its having attained to a great size he applied to a surgeon, who drew off some fluid from it, since which it had acquired its present magnitude.

It appears that in this case the only certain point of diagnosis was to be drawn from its history, and where this could not have been obtained, it might have led to some little embarrassment. On the disease being clearly made out, Mr. Busk passed a trocar and canula into the cavity of the tunica vaginalis, and about 3viij. of brownish fluid were withdrawn. A hernia could now be distinctly felt occupying the inguinal canal, and extending just beyond the external ring, and which, by pressing on the upper and front part of the sac of the hydrocele, had conveyed its impulse, on coughing, to the whole body of fluid contained in the latter. The

hernial tumor itself could not be reduced within the abdomen.

2. *Strangulated Hernia—Diagnosis—Operation—Death.*

The second case was that of a man who was admitted into the hospital labouring under symptoms of strangulated hernia. A very large tumor occupied the right groin and scrotum, and which by the patient's account had commenced at the lower part, and increased upwards. The neck was narrow, and could not be traced beyond the external abdominal ring. The upper part of the tumor was tender on pressure, but not the rest of it; the whole was very tense, elastic, and evidently contained much fluid, and on examination with a candle it was found to be transparent in front and inferiorly; there was no dilatation of it on coughing. His first account of its history was, that while on his voyage from Leith on the previous evening, he (in a fit of intoxication) attempted to lift a very heavy weight, when the tumor suddenly, and for the first time, appeared, but he afterwards stated that he had long been subject to a swelling of the size of an egg on that side, but which occasionally returned into the abdomen. After the usual means to reduce the intestine were had recourse to, but which proved ineffectual, the operation was performed by Mr. Busk, and its different layers having been divided the sac was reached and opened: this proved to be the tunica vaginalis containing much fluid, and a very large portion of small intestine strictured at the external ring; no adhesion existed, and the intestine though congested was otherwise healthy. The result of the operation was unsuccessful, the patient having sunk on the second day.

It would appear that the inguinal ring had never closed after the descent of the testicle, and thus that the tunica vaginalis had on a former occasion admitted of a portion of intestine within it, but which, until the occurrence of the present accident, had been perfectly reducible; that, on the intestine having become strangulated, a large quantity of serous fluid had been effused into its sac, giving to it its fluctuation, and which, with its transparency, would have led to the supposition of its having been complicated with hydrocele.

Aug. 27th, 1845.

APPLICATION OF IODINE IN ERYSIPELAS AND SMALL-POX.

DR. CRAWFORD, of Montreal, recommends painting the erysipelatous surface with tincture of iodine, combining this plan with constitutional treatment; he also recommends the same to be applied to the pustules in small-pox: he prefers it to the nitrate of silver.—*Dublin Hospital Gazette.*

Proceedings of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, Sept. 29th.

DR. THEOPHILUS THOMPSON, PRESIDENT.

THIS was the first meeting of the session. On taking the chair, the President dwelt on the great value of societies of this description, and on the necessity of exertion on the part of the members to keep up a supply of papers worthy of the reputation of the Society. With the view of affording additional motives to these exertions, it had been determined to publish Transactions. This step would be immediately proceeded with. On referring to the Transactions of the Society of many years back, they would be found to be eminently practical, and he trusted that the new series would sustain the character of its predecessors.

DR. GOLDING BIRD read a paper on the treatment of disease by moist air. After showing the great importance of attention to the skin, and its secretions, and the influence it exerted in depurating internal organs, particularly when in a state of congestion, he drew attention to the mode in which he carried out his practice. He claimed no merit on the score of novelty; for the plan of treatment was as old as the hills; the particular mode, however, of carrying it out, had some claim to originality.

Selecting, if the choice be permitted, a bedroom as small and as free from draughts as possible, the windows are carefully closed, and if the casements do not fit accurately, strips of paper should be pasted over the junctures. A stout sheet or blanket should then be fastened with a nail or two to the lintel of the door outside, so as to hang down and prevent currents of cold air entering the room during the ingress or egress of the attendants, a large fire being lighted in the grate, which should never be allowed to go out during the treatment. A thermometer should be suspended over the patient's bed, so as to be about two or three feet from its centre, and carefully watched: the indications of this instrument should be the sole guide for raising or depressing the fire, and a temperature of from 70° to 78° should be constantly maintained. A large kettle of water is placed on the hob, and kept boiling, so that a current of steam may be constantly poured into the room from its spout, which, for this purpose, must be elongated by the addition of a few feet of gas-pipe; and until this be procured, with a tube of stiff paper, or thin mill-board.

By these precautions, the room may, without the slightest difficulty, be kept at a

nearly constant temperature for the requisite time. Indeed, it is remarkable how little variation is observed in the thermometric indications, when the most ordinary care is taken to prevent the entrance of long-continued draughts of air. Let us now suppose that a child, the subject of capillary bronchitis or pneumonia, be exposed to the influence of a bedroom arranged with these precautions, placed in bed, and supplied freely with diluents, as tea, toast-water, or common water, for which the little patients generally crave, and inquire what are the probable results of this treatment, independently of any other.

The first thing observed, generally, is a slight diminution in the rapidity of the respirations, which, for the most part, assume soon a less panting character; this may be accounted for by the more soothing effect of a genial temperature on the surface of the body, and by the warmer air inspired proving less stimulant to the lungs; and, contemporaneously with this, the cough, if present, diminishes in frequency and violence.

In a short time afterwards, the surface of the body, especially the extremities, if previously cold, as in suffocative pneumonia and bronchitis, become warmer; but if previously pungent and hot, they become moist, and in both cases a free perspiration bursts out, and continues in most cases for days. Should this not occur so soon as is wished, enveloping the chest in a large and thick hot linseed-meal poultice will generally turn the scale in favour of diaphoresis. It is here, indeed, that we find the advantage of rendering the air of the room moist by the evaporation of water. If mere dry air, of the temperature of 75° , were allowed to exert its influence on the parched skin of acute pneumonia, it seldom, if ever, excites perspiration; the orifices of the spiral sweat-ducts seem closed against the escape of perspired fluid—nay, it is not uncommon to thus meet with a sort of false miliary rash, really being sudamina, each formed by a drop of sweat imprisoned by the cuticle.

He then detailed some interesting cases in which this plan had succeeded in effecting a cure.

MR. ELLIOTT spoke at some length on the importance of attention to the cutaneous secretion, and cordially approved of the plan recommended and practised by the author of the paper.

DR. WALLER agreed in the main with the paper. He was convinced of the value of keeping cold air from the cavities of the body: his attention to this point had first been awakened by reading the remarks of Professor Lizars, on keeping up the temperature of the room in operations for ovarian tumors. He attributed success in

operations of this kind to the precaution alluded to. He suggested that if care on this head were taken, hernia, after operation, would be less frequently fatal.

Mr. LINNECAR related a case of tracheotomy, in which he attributed success to the temperature of the room having been kept high. In cases of "congestive pneumonia" of children, he had found great benefit from the application, round the chest, of a hot linseed-meal poultice.

Dr. BENNETT regarded the paper as an illustration of the value of physiological and chemical inquiries as affecting practice. With regard to the influence of perspiration in affections of the thorax, he found it of less service in true pneumonia than when the membranes only were affected. In chest diseases of children, he was in the habit of ordering a moist hot bran-poultice to be applied over the chest; this, with mild diaphoretics, was generally sufficient to effect a cure, even in severe cases. The same application, or that of hot sponges, in acute affections of the larynx, was often of great efficacy.

Dr. CLUTTERBUCK considered that in pneumonia, from whatever cause, a free action of the skin was to be desired. He differed, however, from the author, in reference to the respiration of an impure and confined atmosphere, to which the patient would be exposed in adopting the plan recommended. He should say, keep up the action of the skin by means of sudorifics or hot air, but let the patient breathe a pure cool atmosphere, containing as much of the vital principle as possible.

Mr. WILSON bore testimony to the efficacy of Dr. Bird's treatment in incipient pneumonia, affecting a child of his own.

Dr. BIRD replied to the observations of Dr. Clutterbuck, and showed that by the well-known law of the diffusion of gases, the patient would not breathe an impure air during the process he had recommended.

hand, not only specify exactly the courses of lectures, but the precise number of lectures in each course, and the periods during which the student is to attend them, so that he has little choice as to the mode of occupying his time either in the summer or winter. The College of Surgeons in their curriculum pursue an intermediate course, leaving a good deal, but not so much as is left by the College of Physicians, to the discretion of the student. It appears to us, that if any of these bodies be in error (and, indeed, they cannot all be in the right) that the error of the College of Physicians is much safer than that of the Society of Apothecaries, or even of the College of Surgeons. It has been observed, we believe, by Sir Walter Scott, that "no one can properly be said to be well educated who has not been, to a certain extent, self-educated:" and all our experience would lead us to regard this maxim as especially applicable to the education of medical students. It is the duty of the governing bodies to prescribe for them a general plan of study; but as to the details, we are much mistaken if they will not manage them better for themselves than they can be managed for them. One result of the present system, as it relates to the students who mean to be general practitioners, is, that they are too much encumbered with lectures. Let it be borne in mind that it is of little use to sit on the benches and listen to a lecture without taking notes in writing, and that such notes are of little value, unless at one period or another a fair copy is made of them so as to be in a fit state for reference hereafter. If the students were rigidly to attend every lecture prescribed by the College of Surgeons and Society of Apothecaries (which, in fact, they scarcely can do), they would amount to not fewer than 1500, exclusive of clinical lectures on cases in the hospital, of which the number is uncertain. If we add to the number of hours which the lectures themselves occupy, those which ought to be occupied in making fair copies of the notes which are taken of them, we may form some notion of the labour which a strict attendance on lectures alone imposes on the students. We have no doubt that there are few of these courses of lectures which might not be usefully abridged. The College of Surgeons expect certificates to be produced of attendance on 140 anatomical lectures and 100 demonstrations during each of three winter seasons. We conceive that this regulation might advantageously be commuted for another merely requiring proofs of having studied anatomy during two winters. Fifty lectures would teach all that lectures ought to be expected to teach of the *Materia Medica*, whereas 100 are required at present. In like manner the lectures on botany might very safely be reduced

Medical Intelligence.

THE QUARTERLY REVIEW ON MEDICAL CURRICULA.

THE College of Physicians, for their part of the profession, merely require that the candidates should have been engaged in their professional studies for five entire years; that they should have passed three of those years in attendance on the medical practice of an hospital; that they should bring proofs of their having pursued the various sciences on which the art of medicine is founded: and they descend to no further particulars. The Company of Apothecaries, on the other

from fifty to twenty; those on the practice of physic from one hundred to seventy or eighty; and those on medical jurisprudence from fifty to a dozen.—No. cxxxiii.

[These remarks evidently proceed from the pen of a shrewd observer. There is no doubt that the number of lectures might be most advantageously reduced, but we think the writer would possess the most enviable powers of condensation, if he could comprise botany in twenty, and medical jurisprudence in twelve lectures.—ED. GAZ.]

THE LECTURING TRADE.

THERE recently appeared in a public journal, an advertisement from a provincial surgeon and apothecary, to the effect that he would be glad to engage himself as a lecturer on chemistry at *any* medical school or other public Institution. The advertiser also states "that he would be willing to effect a transfer of his practice, which is both extensive and respectable, in lieu of an appointment, such as the above." Some time ago we remember seeing an advertisement stating that the party was prepared to act as professor, or lecturer, upon *any* subject in *any* medical school! Whether he succeeded in the object of his ambition or not we never heard; but these peripatetic lecturers are becoming very numerous, and we now find "practices" offered in exchange for "lectureships," like milk-walks for other trades. But it may be inquired,—Is it possible that the certificates of these casual professors "*de omnibus rebus et quibusdam aliis*" would be received by the Hall and College? Judging from circumstances which have come to our knowledge, we have but little doubt that they would: it requires but small influence for a man to become one of the "recognised," although he may have been but a few weeks, before a professor at some public gallery, or scarcely out of his pupilage as a student of the subject which he undertakes to teach. It is sad that some check is not put upon this system. So numerous are professors and lecturers, that we believe in the metropolis alone, we might fairly estimate that there are not more on an average than three pupils to each teacher, and in some schools the professors would probably be in a majority. If these advertisements continue to multiply, we shall have "professorial agencies" springing up in the principal thoroughfares, to enable persons to effect, at a small commission, safe bargains in "Chairs," or exchanges for practices!

THE NATIONAL ASSOCIATION OF GENERAL PRACTITIONERS.

As we lately inserted the comments of the Times on the discrepancies which existed

between their last Address and the provisions of the fourth Physic and Surgery Bill, it is but an act of justice to the National Association of General Practitioners to give insertion to the subjoined explanation.—ED. GAZ.

"The National Association of General Practitioners in Medicine, Surgery, and Midwifery.—Office, 294, Regent-street, September 26, 1845.—The Sub-Committee of this Association hereby inform the members that the Medical Bill as re-committed and ordered to be printed by the House of Commons on the 28th of July last, was not out of the printer's hands until two or three weeks subsequently, and did not reach the Committee until the last address, bearing date August 6, 1845, had been discussed, agreed upon, and put into type.

"The subject of the Bill as last printed has been under discussion in the Sub-Committee, and it is found that serious discrepancies exist between its clauses and the terms of the arrangement entered into by the Joint Deputation, as reported in the last number of the Association's Transactions.

"The Sub-Committee are at the same time enabled to state upon authority, that there is no intention to re-introduce a bill into Parliament with such discrepancies, which have been purely accidental, arising from the hurry of Parliamentary business at the termination of the session, and the difficulty of settling hastily what should be comprised in the charter, and what should be expressed in the bill; but at the first possible moment the bill will be altered, which, together with the charter, will be made to correspond with the arrangement entered into with the deputation.

"By order of the Sub-Committee,
James Bird, } Hon. Secs.
Henry Ancell, } pro tem."

ALLEGED IMPORTATION OF THE AFRICAN FEVER.

Portsmouth, Sept. 29th.

THE Eclair steam sloop, Commander Walter G. B. Estcourt, came up to the Motherbank this morning, about 9 o'clock, with the yellow flag, with a black ball in its centre, emblematic of death on board. She has been so fearfully visited with sickness since she has been on the coast of Africa, that she has been sent home. The awful number of 62 have died in the vessel, and others are dying hourly. We regret to state, Commander Estcourt is among the number deceased. The names of the other officers and men we cannot at present tell, no communication being allowed. We are informed there are now 23 ill on board. The surgeon was alive this morning, and on the quarantine officers going alongside the vessel, we

are informed, he answered their inquiries, and said the mortality was from a fever something between the yellow and black. One of the men died this morning. The Customs authorities are fearful of removing any one on board. We believe, however, fresh provisions have been sent to the vessel, but whether any human assistance, we cannot find out; we believe none, owing to the fear of contagion. If she remains at the Motherbank, she will have to ride out forty days' quarantine, but we are informed it is most probable she will be supplied with fuel and fresh provisions, and be sent for a cruise in the North Sea. The Admiralty despatches are landed, but nothing else. A boat rows guard round the vessel to prevent communication and consequent contagion, as well as to prevent any one escaping from the vessel improperly.

The report of the 30th states that the *Eclair* is still at the Motherbank, where it is most likely she will remain many weeks. "The malady, whatever it is, still rages on board; three more deaths have been announced since yesterday's despatch, and two fresh cases have manifested themselves on board. The quarantine officers will not receive anything from her, nor is any one allowed to go on board or leave the vessel. We believe, however, medical aid has been sent from Haslar Hospital; fresh provisions have also been supplied. The Custom-house officers dare not go on board, and the quarantine vessel keeps guard round her. The number of dead we believe to be 65. The officers deceased are the Commander, Paymaster, Clerk, Naval Cadet, Master's Assistant, the Surgeon, Mr. John Macconchy, and the Assistant-Surgeon, Mr. Charles Hartman."—*Abridged from the Times.*

[REMARKS.—We have not the slightest doubt that every precaution which the humanity and judgment of the executive authorities can suggest will be had recourse to for the preservation of the lives of the survivors of this unfortunate crew; but we have little hope that any means will prove successful unless the whole of the men be immediately removed from the *Eclair*, and those at present suffering from the fever be separated from those who have as yet escaped. The proper destination for the former is, of course, Haslar Hospital, where, we apprehend, any number of separate wards, or an entire wing of the building, might be set apart for their reception; while the latter could either be removed to some isolated building, duly prepared for their reception, ashore, and under quarantine surveillance, or be transferred to another vessel properly supplied with clean bedding, linen, &c. The spread of the con-

tagion is now doubtless principally owing to the state of the vessel itself. The loss of hands on board, and the distress and disorder attending so dire a mortality, must, almost necessarily, have in great measure prevented that cleanliness and due ventilation from being preserved within her which are so absolutely indispensable for the checking of contagious disease on ship-board; but, indeed, no degree of care can have prevented a vessel with so many sick on board from becoming a perfect hot-bed of contagion, while every article she contains must have necessarily been rendered a *fomes* of the disease. A speedy removal and separation of the crew is assuredly the only means by which the lives of this unfortunate remnant can be preserved;—neglect of this precaution must be destructive alike to the crew and to those who are ordered to their assistance.

The Times of this day (October 2d) contains the names of fifty-six persons who have died on board this ill-fated vessel. The fever made its first appearance in April at Bonavista, one of the Cape Verde islands, nearly opposite the mouth of the Senegal river, but more than 300 miles from the African coast. We learn that the fever is still raging on board, and that the survivors are without any medical assistance. It is intended that the vessel shall go to Stangate Creek, and there remain for forty days or more after clean bills of health have been received from her.—*ED. GAZ.*]

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Sept. 20.

BIRTHS.	DEATHS.	Aver. of 5 yrs.
Males... 540	Males... 370	Males... 491
Females... 550	Females... 404	Females... 472
1090	774	963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	99
NORTH—St. Marylebone; St. Pancras; Islington; Hackney	(Pop. 366,303) 138
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London	(Pop. 374,759) 165
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar	(Pop. 393,247) 194
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich (Pop. 479,469)	178
Total	774

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURES

Delivered at University College Hospital,

By DR. C. J. B. WILLIAMS, F.R.S. &c

[Taken in Short-Hand by our own Reporter, and revised by the Professor himself.]

Cases of Delirium Tremens—On the nature of the disease, and its varieties—its connection with want of sleep—with inanition—practical deductions. — Operation of alcoholic liquors on the nervous, vascular, and secreting systems—Varieties explained—Illustrative cases, and treatment. — Case treated with extract of Indian hemp—Recovery.—Case with albuminuria—Death.—Case treated with morphia, purgatives, and diuretics—Recovery.—Case treated with tartar emetic, calomel, opium, and diuretics—Recovery. — Case of maniacal delirium, treated by cupping, calomel and opium, blister, &c. — Temporary recovery—Subsequent insanity.

WE have had several cases of delirium tremens lately, and I shall take this opportunity of making a few remarks on that disease in general, as well as on the peculiarities which each case presented.

You will find stated pretty broadly in systematic works what are the characteristics of delirium tremens, and what is the treatment which is generally successful. But we must remember that systematic medicine is one thing, and clinical medicine another. It is not my part to say that systematic medicine is of no use; on the contrary, it is of very great service; but it is not every thing. It is impossible by systematic medicine to teach you all the phases of disease, and it is absolutely necessary to study it at the bedside, in order to be aware of the varieties which it presents, and to be capable of treating it successfully—to meet these varieties, in fact, as you should do, by a corresponding variety in treatment.

Delirium tremens, both practically and pathologically considered, may be defined to be a disease of excitement of the nervous system, leading to exhaustion, and requiring the use of composing remedies,—at least, chiefly. You commonly find practical men talking very largely about the entire and complete efficacy which opium has in the treatment of this affection. Give plenty of opium, they say; give enough to put the patient to sleep, and you cure the disease. But in some cases, we have had to prove that this rule is far from being absolute. You

have seen several cases in which opium has been given in large quantities, in quantities sufficient to produce sleep, and yet the disease has not been cured.

We will take the matter a little more nicely, and consider first of all what delirium tremens is. We will analyse it a little further than by merely saying that it is excitement with exhaustion. Sometimes the leading symptoms which characterise it are those of excitement of the nervous system, which prevent the rest of sleep to such a degree that ultimately the vital powers become exhausted. Sleep is intended as a means of restoring all the vital powers, and particularly supplying an additional force to the excito-motory power, and the cause of want of sleep is a matter which has not been sufficiently attended to. Many morbid phenomena prove to us that the sensorial functions, the functions connected with the mind, and the voluntary powers, act in some degree as a balance to the functions of the nervous system connected with involuntary power. When the sensorial functions are greatly excited, excited to an excessive degree, the excito-motory functions become comparatively exhausted. On the other hand, where the involuntary excito-motory functions are excessively excited, as in convulsive attacks, the voluntary powers, are in abeyance—there is a state of coma, stupor, or something approaching to it. The two cannot be in a state of continual excitement long together; the continued excitement of both leads to exhaustion of both, or one more than the other; and the great purpose of sleep is not only to refresh and to strengthen the sensorial functions, but for a certain time to suspend them altogether—that is, they are altogether suspended when sleep is perfect—when there is no dreaming. Sleep is designed not only for the purpose of restoring the sensorial powers, but doubtless to give increased temporary energy to the excito-motory powers. And what do we see in a state of tranquil sleep? In tranquil sleep the excito-motory function is that on which life mainly depends, it is that on which the respiratory movements hang, and were it to fail, sleep would become disturbed in consequence of the person being brought to the verge of asphyxia. I might illustrate this by a great number of cases—for example, cases in which sleep is imperfect. The whole nervous functions being exhausted, whether from mental excitement or bodily fatigue, or intoxication, what is the result? When a person is over-fatigued, he is too tired to sleep. The excito-motory function is exhausted as well as the other, and hence there is not strength enough to keep the respiratory action in energy sufficient for the comfort of the individual. The consequence is, he soon awakes, the sleep is

disturbed, he starts with a feeling of nightmare, or oppression, and has to exert his voluntary muscles to supply by their movements what is wanting in the excito-motory function. This is the reason of imperfect sleep from over exhaustion.

But the excitement of the whole nervous system which exists in delirium tremens is not dependent alone on loss of sleep. In addition to continued irritation by the alcoholic stimulus to which the nervous system has been subjected, another cause generally co-operates in these cases—that is, the absence of a sufficient amount of nutrition. Habitual drunkards are always tipping, but they do not eat; they have no appetite, no powers of digestion; and the consequence is, that whilst they are in a state of continued intoxication, they are in a state of perpetual starvation. Inanition is induced, another cause of the exhaustion of the bodily powers generally, and of excitement of the nervous function in particular. It is well known that in all cases of inanition the bodily powers are depressed, but the nervous function is the last thus to suffer; it remains excited, in fact, in the midst of a general state of depression, as we see in cases of continued starvation, privation of food, and exhaustion from other causes. In excessive loss of blood, or drains of other kinds which exhaust extremely, we find that the nervous system remains excited even in the midst of weakness. These things have been illustrated by the experiments of Chossat on inanition, which shew that the nervous system in these cases is not only the last to suffer in function, but the last also to suffer in structure, and the last to lose weight when animals are starved to death.

Now we know that this cause operates in the case of habitual drunkards; we know that they do not eat, from a want of relish, consequently that they are in a state with regard to the nutrition of the system approaching to starvation. This is another reason why exhaustion ensues. This view of the matter introduces us to another peculiarity of delirium tremens, and suggests to us another indication in the treatment in ordinary cases.

The indications of treatment are threefold. First, to compose that undue excitement of the nervous system which prevails, and which is exhausting the other powers. This is done by opium and other narcotics. Secondly, to support those functions which are failing, and which have been already so much exhausted that life may be in jeopardy. Although sleep is needed, yet strength is required to support life, and although sleep be obtained, perhaps the excito-motory function may be exhausted so low, that it may prove the

sleep of death—it may be a reduction to a state of sinking. Under such circumstances—and they often occur in extreme cases of exhaustion in connexion with delirium tremens—it becomes a little leading indication to support the system by stimulants, and food if possible. But there is a third indication which should never be lost sight of in the treatment of delirium tremens; that is, to purify the system from the poison that is in it. If it be a case of recent debauch, there is an alcoholic stimulant in the system, and the longer it remains there the more mischief it will do. And in these cases there are other poisons besides the alcoholic stimulant. The body is a source of poison to itself, and if the vital powers are greatly reduced in their energy, the process of self-purification will not go on; the excretory functions are imperfectly performed; the urine is no longer freely secreted; urea, which is a poison in itself, accumulates; the bile probably accumulates in like manner, and the result of this in an extreme degree is to cause a poisoning of the system. It may not operate in such a violent manner as to lead us to say that the system is overwhelmed by the poison, but it contributes its influence. The cases I have to read will illustrate this point, shewing that as long as the excretions are defective the nervous excitement continues, or the patient remains in a state of exhaustion, and there is an imperfect performance of the other functions. It is therefore a leading object to *purify the system by means of an increase of the secretions*, and this is generally done practically by means of purgative and diuretic remedies. This is the systematic treatment of delirium tremens explained in its principles.

But now we come to clinical varieties of this affection—to cases, as we meet with them in practice; and nothing is so good a guide to our understanding this subject, and, after understanding it, to our treatment, as a proper view of the *modus operandi* of the cause of the disease—that is, its true pathology.

Intoxicating liquors, I have stated before, produce excitement of the nervous system; but that is not their simple effect. Perhaps I may appeal to the experience of some who are present, who know what the operation of intoxicating liquors is; and although such experience is to be deprecated, yet we shall draw good out of evil, if evil has happened, taking a lesson from the past (without the need of repeating the experiment), to enlighten our minds for the good of others.

Intoxicating liquors affect three systems in particular—the nervous, the vascular, and the secreting.

The effect of these liquors on the nervous system is, in the first place, stimulant and

narcotic; and I must beg you to observe that these two effects vary considerably in different individuals, and in the same individual under different circumstances. With many persons they produce a state of wildness, excessive excitement, and that excitement not followed by any perceptible sopor or tendency to sleep. I have known many such cases in persons of nervous temperament, particularly excitable females; there no sleep ensues, and as might be expected, the consequence in such cases is more pernicious, leads to more disturbance and exhaustion. But in most instances the secondary operation of intoxicating liquors is decidedly narcotic. In most instances, a large dose of intoxicating liquors will speedily plunge a person into a state of sopor or coma; and if it be excessive, that coma may be fatal. But short of this, we hear the familiar expression, that a good glass of brandy and water, or negus, or anything of that kind, is a very comfortable *night cap*, and many get into the habit of taking it every night to promote sleep. With many, it has more that effect than any other; but it has that effect peculiarly in some states of the system, as after fatigue and exhaustion—when the fatigue and exhaustion are too much for sleep. Then a glass of brandy and water, something stiff, will prove a comfortable *quietus*—a night-cap. This illustrates the different operation of intoxicating liquors on the nervous system; I have already mentioned that they act in different ways on various parts of that system, but I have not time to dwell on that point.

But intoxicating liquors also act on the vascular system. Here their effect is twofold. In the first place, it is stimulant, producing excitement, increased action of the heart, strong pulse, quickened circulation. They cause an increased glow and activity of circulation, perhaps by a direct influence on the production of animal heat; and indeed the result may be called directly stimulant. Then the subsequent effect is that of exhaustion. The exhaustion of the vascular system produced by these liquors is in the ratio of the previous excitement. That is not the case with regard to the nervous system. The vascular system passes into a state of weakness in proportion to the degree in which it was previously excited. If this be excessive, there is great weakness of pulse, and other symptoms of vascular debility. This element of the operation of intoxicating liquors is furnished in different degrees by different individuals. The excitement will be greatest in a person of sanguine temperament. If there be any disposition to excitement of the brain, or the heart, or any other part connected with the vascular system, these parts may, under

these circumstances, suffer from excitement, and as the result of it, inflammation may be induced. We find accordingly that inflammation of various organs sometimes arises directly from the stimulating influence of intoxicating liquors. Bear that in mind with regard to the brain. The brain is one of the organs which is the first to suffer; and phrenitis, inflammation of the brain, or meningitis, inflammation of the membranes of the brain, and indeed every variety of inflammation of this organ, has been produced directly by intoxicating liquors. On the other hand, the weakness which follows this excitement is more likely to take place in persons of phlegmatic temperament.

Thirdly, intoxicating liquors operate on the secreting system. I have separated this from the vascular system, for the effect produced on that is not always proportioned to the excitement produced on this. Very different effects are apt to result from the disproportion between the two. The result of excitement on the secretion of the liver, the intestinal surface, the kidneys, and all other secretory organs, is to produce an increased flow; and this is exhibited also in various degrees in different individuals. It is well known that some cannot drink any amount of intoxicating liquor without the kidneys being excited to an extreme degree, and acting very freely under it. These are the persons with whom such liquors produce least mischief. There can be no doubt at all that the secreting system is a safety valve for this as for other poisons. So long as this safety valve is free, the increased stimulus and other injurious effects can be carried off by it, and so far the mischief resulting from them may with regard to this element be but small. But what is the effect of the continued excitement of the secreting system? It is exhaustion. You cannot go on stimulating a secreting organ long without fatiguing it, if I may use the expression. There is a certain amount of vital power appropriated to each structure, and if the structure be taxed beyond that power, it fails in function, and consequently the function ceases, or is more or less impaired. What is the result? The failure of the secreting function, to the value of which I just now alluded. This failure acts as a blockade to the system, stopping up all the channels by which the system is freed from poisons, extraneous or intrinsic. This we find occurring in the long run in habitual drunkards. Although their secreting organs may serve them long, and save them from many evils—and the longer they serve them, the longer they can save them—yet, by and by, they get tired and worn out, their function and structure suffer, and then comes the tide of evils which close the scene of the lives of drunkards. You know what

they are—cachectic diseases of various kinds, dropsy in particular, degenerations of structure, and a host of other affections, of which gout, rheumatism, gravel, and similar disorders, may be considered the slighter degrees.

If you consider that all these elements are concerned, are really part and parcel of the operation of alcoholic liquors, you cannot wonder at the clinical varieties presented in the different forms of the drunkard's disease. I think this will be enough to show that no one rule can be absolute with regard to the treatment. But it is enough to show more than this, and I should not have taken up your time with what may appear over refinement, if there were no practical rules arising out of this analysis. In fact, in different circumstances alcoholic stimulants produce these various effects in different degrees. These different results are exaggerated by the indulgence being habitual. The effects accumulate, and if the nervous system is excessively excited, the vascular system becomes excessively exhausted, and the secreting function considerably impaired. If that takes place at each debauch, a succession of them will increase all these effects, and produce as the result the most aggravated form of delirium tremens. On the other hand, in the young and healthier novice in excesses, the vascular system may become more excited than the nervous system, and inflammation of the brain, or something bordering on it, may result, with different tendencies, and requiring different treatment. Again, in both these classes of cases, their severity and intractability will much depend on the extent to which the secretory and nutrient functions are impaired, and attention to these must be duly included in the treatment. Thus many and important varieties, which defy our definitions when we attempt to reduce them to nosological arrangement, become intelligible and tractable when we analyze the elements of the disease, and consider the mode in which it has been produced.

Let us take the cases in illustration, some of which I will quote from memory. One occurred some time ago in D. W., aged 51, admitted on the 25th of February, and discharged cured on the 15th of March. It was the case of an old drunkard, who carried his vocation in his face—the face that Shakespeare has so well described; I am not going to quote him, but I shall define it more technically by saying that he had a face red with *acne rosacea* and *tuberculata*; bleary eyes; the heavy stupid look of a sot; general tremor of the body; great weakness and exhaustion; lowness of spirits, with disturbed sleep, and horrible dreams. His was not a case where the nervous cerebral or vascular excitement was high; the former

existed, but in low degree: the latter had passed into a state of exhaustion. The secreting functions were deficient, particularly that of the liver, and required extra treatment besides that ordinarily employed for delirium tremens, and which I shall mention by and by. The nutritive function was particularly defective; he had taken scarcely any food, and the weakness of the vascular function might be partly attributable to that. Holding that in view, as well as the indication to give more tranquil sleep, I sought for him a composing medicine which should not impair his appetite; and instead of giving him opium in the day time, I exhibited the extract of Indian hemp, the peculiar operation of which is, that it acts as a soporific without impairing, but rather increasing, the appetite. It is a valuable medicine for this purpose, and was the chief remedy under which he recovered. He had two or three doses of opium, but they were confined to the night, so that they should not interfere with the digestive functions during the day. He soon lost the tremor and nervous symptoms, and would have been discharged sooner, but he was kept in on account of the great tenderness and enlargement of the liver, which required the exhibition of mercury and other medicines to increase its secretions for some time afterwards.

The second case is that of Joseph Mayhew, on which I have already commented, and shall not dwell. It was delirium tremens combined with albuminuria. In a former lecture I expressed my conviction that the extreme exhaustion he exhibited was the result not only of the alcoholic stimulant, but of a poisoning of the blood from the diseased condition of the kidneys. The latter affection I had no hesitation in ascribing to the previous operation of alcoholic stimulants, combined probably with cold, but the effect of the two together was such as to reduce him to an extreme state, and he died shortly after his admission.

The next is the case of J. D., admitted May 17th, aged 30. He is a surgeon. It appears that he was a confirmed drunkard, although young. "Eyes injected and weak; countenance of an unhealthy livid red colour. His history from the time he entered Trinity College, Dublin, to the present, reveals a course of life of the most debauched and dissipated character. He lived hard when a student, drinking indiscriminately alcoholic and malt liquors. Having taken his degree at Dublin"—(a degree in the art of drinking, one would suppose)—"he went abroad, first to India, then to China, where he remained for about three years. During this time he lived the same kind of life; his drink was chiefly brandy, but he also contracted the habit of taking laudanum and smoking opium to some ex-

tent. He suffered from gonorrhœa and syphilis at various times, and from the secondary symptoms of the latter disease. He returned about three years since, and has been residing in London up to the present time, following no employment, and leading the same sort of life as when abroad. While in London his drink has been principally gin. He has never had an attack of delirium tremens until the present, but during the last fortnight he has been more than usually nervous, and his hands have been more unsteady. This he attributes to a good measure to anxiety produced by family circumstances, and also to the interference of a third person with a female with whom he had been living. His nights have been restless, and his sleep disturbed by frightful dreams. On Saturday morning last he was unusually anxious and nervous, and resorted to his usual remedy—gin. He continued during the day drinking, and towards the evening, when nearly intoxicated, he took five or six glasses of gin rapidly in succession." That was the finishing stroke—the dose that at once threw him into disease, overwhelming him by its poisonous influence. "Feeling unwell he went into the air, and soon began to experience a wildness, swimming in the head, and becoming unconscious he was brought to the hospital. When admitted he was quite delirious; countenance expresses great excitement and alarm; head feels hot; pulse rapid and small; skin bedewed with perspiration; tongue furred and moist. He has stricture of the urethra, and the house-surgeon used a catheter, and drew off a good quantity of urine somewhat tinged with blood, and containing some albumen." This was most likely connected with the stricture.

This was a case of delirium tremens accompanied by more than usual excitement from excess; I do not know what to call it; his constant habit was that of continued excess—this was extra excess. He was given morphia twice before I saw him, which was on the 18th, when the report is:—"He has passed a bad night, being quite delirious; the other patients describe him as having been furious. No mechanical restraint was used. He is less excited this morning, but still talks incoherently; bowels not much opened, tongue furred, pulse weak, and rapid."

This, however, was not a state of exhaustion; his delirium was still of an excited phrenitic kind, not amounting to inflammation, but one of considerable excitement, and that probably from the remaining effect of the alcoholic stimulant in which he had indulged the day before. He was then given large doses of laudanum, and a saline draught was added, with a view to increase the secretion of the kidneys, hoping thereby

to get rid of the poison. He was also given the Haustus Sennæ to fulfil the same object, the bowels not having been freely opened.

The report on the next day is:—"He feels better, but his memory still fails him; skin moist; pulse 72, weak:"—reduced in frequency. "The past night was troubled with frightful dreams; complains of headache; urine abundant, but bloody:"—that was from the stricture. "Bowels freely opened. To have ordinary diet." Then, with a view to act on the secretions, now that sleep had been procured, he was given calomel with conium. The result was:—"He sleeps better; dreams less troublesome; feels very weak; pulse 70, small. After this he was put on a light tonic and improved diet, and his convalescence took place rapidly. He was sent to the surgeon afterwards, to be treated for the stricture, and has been free from delirium since.

The next case is that of G. H., aged 26, admitted May 28th, a veterinary surgeon, of tall stature, and stout conformation; sanguine temperament, and his health very good formerly, although now his countenance is rather bloated. Has lived in Ireland with his friends, and led a steady sober life, till about six years ago, when he contracted wild habits, and kept bad company, frequently riding steeple-chases, and being often drunk with whiskey. Three years since he came to pursue his studies at the Veterinary College, London: he continued to lead the same kind of life. This is not the life of a student; I hope you will draw a moral lesson from this description: it will serve to teach not only a lesson in physic. "He says, it is not unusual for him to be in a state of intoxication for three or four days successively, and then intermitting for a time. His drink has been malt liquors and gin,—principally the latter; and he has scarcely taken any food." Here is the usual concomitant of intemperance—starvation; and that matter has not been sufficiently considered. It is one of the prominent features of the system of gin-drinking; the mischief results not only from alcoholic drink, but from privation of food. Sometimes amongst the poor wretches in a state of almost destitution it is a kind of excuse with them that they can, as they say, get more comfort from a pennyworth or two pennyworth of gin than from the same worth of bread. But I need not say in what a degraded state must both mind and body be to have such a perversion of tastes and appetite. "He has lately had several attacks of confusion of intellect and trembling of the hands, which have usually come on after a debauch, and which he easily dispelled by having recourse to the usual stimulant. Three months ago he was taken in one of these attacks to the Middlesex Hospital in a

state bordering on paralysis, his mouth being drawn on one side." Here is an illustration of another effect of intoxicating liquors. This is not delirium tremens; it has nothing to do with it; but intoxicating liquors disturb the circulation in the head, at one time producing a state bordering on inflammation; at another time congestion, and consequent paralysis. How was he treated, then? "He recovered after being cupped behind the ears." There was congestion that required that treatment, although this was induced by the same influence that afterwards caused delirium tremens." He commenced drinking again on Monday last, and he has continued in a half intoxicated state ever since, taking little or no food, and getting scarcely any sleep. The day before admission his stomach became irritable, and he vomited whatever he took. His hands became unsteady, but he resorted to his usual remedy. His nerves had become worse to-day (May 28th), and towards the afternoon he had what he calls a queer sensation, and confusion of intellect, and was admitted into the hospital in a state of inebriation, with a quick small pulse; considerable heat of head; confusion of ideas; skin moist; tongue covered with a thick brown coat; appetite bad; bowels not relaxed; not much tremor of the hands. 29th. Passed a very restless night, starting up with frightful dreams the moment he fell asleep: feels a wandering at times in the head, but he answers questions quite readily and rationally; pulse 118, and weak; feels very languid; tongue the same; skin hot and moist; great thirst; urine slightly albuminous." There was no stricture here. The albumen was one indication of failure of the secreting functions, and it is by no means an uncommon one. If the kidneys be overtaxed by continued excess, the excitement leaves congestion, and you know that I entertain the notion that congestion of the kidneys is the common cause of albuminuria. In this case it soon passed off as the kidneys recovered. "The urine is natural in colour; forty-eight ounces passed in the night; deposits shreds of tenacious fibrinous matter"—that is a result of the same congestion—"specific gravity 1014"—that is low under these circumstances—"bowels confined."

This was a case of delirium tremens with a good deal of excitement of a vehement kind, obviously requiring a combination of treatment; not only opium, but other remedies also, to augment the secretions. There did not appear to be exhaustion enough at that time to require stimulants; but afterwards, when the nervous symptoms became more intense, and the pulse became weaker, I considered that a stimulant was needed, and he was given ather with the

opium. The treatment first adopted was calomel and opium, and afterwards opium and camphor. The *Haustus Sennæ* was likewise given, and repeated several times. I have not time to read all the reports; but for two or three days he was somewhat better: then he became very much worse again. There was an increase of the delirium, not accompanied by tremor, but more of the character of maniacal excitement; the pulse, however, was very weak. I thought to fulfil two objects at the same time, by giving at night a draught of aether and laudanum, and continuing a mixture through the day containing small doses of tartar emetic and liq. opii sedativus with nitre; this, however, did not appear to answer; and opium was again given in a very considerable quantity. But his phrensy continued to increase, and in fact bordered on inflammatory excitement. On the 1st of June it is stated "that he had been in a state of furious delirium the whole night, starting, shouting continually, and at one time he became livid in the face. This, however, soon passed off. This morning his countenance is very wild and flushed; pupils contracted, tongue and mouth dry." That is not the character of delirium tremens. "Head very hot; pulse rapid and small; the bowels were not sufficiently open."

In this state I had very considerable doubt whether he ought not to be bled; but his pulse was still weak, and I thought it very likely that by a further increase of the secretions, by aid of calomel and antimony, and by the application of cold to the head, this attack might be subdued. He was given accordingly six grains of calomel, one grain of opium, and half a grain of tartarized antimony. It was to be repeated in six hours, and cold to be applied to the head. The result was, that "he had several hours' sleep during the night, and this morning he is quite conscious and rational; face still flushed; pupils less contracted. The urine was still scanty in quantity, but of high specific gravity." He was given croton oil, and ordered to keep up the cold application to the head. On the 3d the report is, that he had slept well during the night; that he was much better; and now the urine was more abundant and paler, the specific gravity 1028. The subsequent reports shew that he rapidly got better.

Here the delirium was in a great degree removed by opium and purgatives; but on the secretions becoming defective, it recurred again in spite of opium, and of opium combined with aether; but by repeated purgatives and diuretics, and using cold to the head, it was again carried off, and it did not return again when once the urine was rendered quite free.

I have not time to read the case of James

Upton, a patient who is still in the house ; but I refer you to his case in the book as another illustration of the phases the disease presents. He was better after the first few days' treatment, but he went back, and at last became furiously delirious. The violence that took place was obviously connected with such a determination of blood to the head, that it warranted blood-letting. Although the opium reduced the delirium at first, it did not subsequently. I ordered the head to be shaved, and a blister applied to the nucha ; and he became immediately much better ; but he is still somewhat incoherent, shewing that the functions of the brain are not entirely restored. I think it probable that a state bordering on inflammatory action has been produced, and which may leave the mind in a disordered state for some time.

[This patient afterwards improved, and having been free from illusions for several days, was discharged June 28th. A fortnight after, he became insane, and was taken to an asylum.]

MICROSCOPIC EXPERIMENT.

It is not generally known that the thin transparent membranous tongue of the frog furnishes a much better microscopic object for viewing the general circulation, that of the mucous follicles, muscular contraction, &c., than the foot, the tail of a tadpole, or other transparent structures. As remarked by Donné (*Cours de Microscopie*), it possesses the advantages of being an organ of high vascularity and of very complex structure, into the composition of which enter nearly all anatomical elements, such as arteries, veins, capillary vessels, muscles, nerves, glands, membranes, &c., representing in short almost the entire organization of the body on a small scale ; moreover, there is no difficulty in its preparation. The only objection is, that the experiment renders necessary, the too free use of pins for the purpose of fixing the tongue and keeping it on the stretch.

POSITION IN LABOUR AS PRODUCING A TENDENCY TO PUERPERAL CONVULSIONS.

It is with me a rule, not to allow a primiparous female to lie long upon her back while in strong labour, for fear that the weight of the womb, superadded to the pressure of the abdominal muscles, might check the aortic circulation too considerably ; and the more particularly would I forbid a dorsal decubitus, in case she should make any complaint of headache, dizziness, flashings of light, or tinnitus, or manifest any other symptoms of excessive sanguinous determination to the head.—*Dr. Meigs.*

Original Communications.

SOME REMARKS ON THE TREATMENT OF UNAVOIDABLE HÆMORRHAGE BY EXTRACTION OF THE PLACENTA BEFORE THE CHILD.

WITH A FEW OBSERVATIONS ON DR. LEE'S
OBJECTIONS TO THE PRACTICE.

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ALL the more severe forms of uterine hæmorrhage that are liable to occur in the later periods of pregnancy, and during delivery, are generally allowed, by obstetric pathologists, to depend upon the separation of a greater or less portion of the placenta from the interior of the uterus. When such a separation takes place, *two* surfaces are exposed, namely, *first*, a part of the inner surface of the uterus, and, *secondly*, the corresponding part of the outer, or maternal surface of the placenta. Both of these exposed surfaces present a number of open vascular orifices left by the laceration of the utero-placental vessels which formerly connected them. From which set of open vascular orifices—the uterine or the placental—does the resulting hæmorrhage principally proceed ?

Most accoucheurs seem to believe that the blood effused in those hæmorrhages which occur before or during labour, comes from the exposed *uterine* orifices. "It is (observes Dr. Lee) from the great semilunar, valvular-like, venous openings in the lining membrane of the uterus, which you have seen in various preparations, and of [from] the arteries which are laid open by the separation of the placenta, that the blood *alone* flows in uterine hæmorrhage."—(*Lectures on Midwifery*, p. 361.)

But arteries, particularly when they are so long and slender as the utero-placental arteries are, do not give rise to any marked degree of hæmorrhage when they are lacerated or *torn* through ; and bleeding does not readily occur from the venous openings exposed on the interior of the uterus, because venous hæmorrhage by *retrogression* (which the blood escaping backward into the uterine cavity would be) is here prevented by a variety of anatomical and subsidiary means, which I have elsewhere taken occasion to describe at some length.

In the passage that I have quoted above from Dr. Lee's published *Lectures*, Dr. Lee does not allow that the blood, in uterine hæmorrhage, proceeds in any degree from

the open venous orifices existing on the surface of the separated portion of placenta, the discharge proceeding, in his opinion, from the exposed *uterine* surface "alone." But I know of no reason, anatomical or otherwise, for alleging that the open *placental* orifices do not bleed; and, on the contrary, I believe with Dr. Hamilton and others, that the discharge issues principally or entirely from the vascular openings which exist on that exposed placental surface. These placental orifices are not, like the uterine, surrounded by contractile fibres capable of constricting them; they are in free communication with the general vascular system of the mother through the medium of the maternal vascular, or cavernous system of the placenta; and the blood in that cavernous system escapes readily from the exposed venous orifices on the surface of the placenta—that being, in fact, so far, its natural and *forward* course.

In cases in which the placenta is partially and repeatedly detached before labour begins (as happens frequently in placental presentations), before each attendant attack of hæmorrhage is arrested, the vascular system of the separated portion of placenta seems to require to become blocked up and impervious, with coagulated and infiltrated blood. This obliteration of its vascular cells prevents the further circulation of maternal blood through the detached part of the organ, and hence prevents also the further escape of it from its exposed surface. Each new detachment gives rise to a renewed hæmorrhage, which again ceases on the sealing up of the vascular system of the detached part. A few cases of placental presentation are on record in which there was *no* attendant hæmorrhage when labour supervened, the tissue of the placenta having, throughout the whole organ, previously become so morbidly changed, obstructed, and impervious, as not to have any quantity of blood circulating in it and ready to escape, when at last its surface was separated from the interior of the cervix uteri under the occurrence of the uterine contractions.

In common cases of unavoidable hæmorrhage, the amount of the attendant flooding seems to be as much regulated by the quantity of placental surface *still* remaining attached to the uterus, as by the quantity *already* separated from it—the degree of flooding depending as much, or more, upon the extent of the means of supply of blood as upon the extent of its means of escape. And in proportion as we approach nearer and nearer a *total* separation of the placenta, the number of its *afferent* utero-placental vessels is diminished, till at last we find that when the one organ is once completely separated from the other, the flooding is instantly moderated, or entirely arrested; for the

placenta ceases to yield any discharge of maternal blood as soon as its own supplies from the maternal system are thus cut off by the disseverment of all its organic and vascular attachments with the uterus.

Some years ago, I happened to see two cases of unavoidable hæmorrhage, in which the placenta was spontaneously expelled for some hours, before the child itself was born. In both cases the attendant hæmorrhage moderated, or entirely ceased, as soon as the whole placenta was completely detached. These instances, and others with which I was previously acquainted, forcibly suggested to my mind the idea that, under some complications in unavoidable hæmorrhages, we might here (as in many other obstetric operations) adopt the principles of treatment at times successfully acted upon by nature herself, in her own unassisted management of such cases. I knew the fearful maternal mortality accompanying placental presentations, and that it was as great, or even greater, than the fatality among patients attacked with yellow fever, or subjected to lithotomy. In order to ascertain if the *total* and complete detachment of the placenta afforded a greater chance of life to the mother, I collected and published in Dr. Cormack's *Journal of Medical Science* for March last, notices, which at that date I had brought together, of 141 cases of placental presentation in which the placenta was expelled or extracted before the child. The deductions which I ventured to draw from an analysis of these 141 cases were to the following effect:—

1. The *complete* separation and expulsion of the placenta before the child, in cases of unavoidable hæmorrhage, is not so rare an occurrence as accoucheurs seem usually to believe; and it is not by any means so serious and dangerous as (according to the commonly received doctrines of uterine hæmorrhage) might *à priori* be expected.

2. In 19 out of 20 cases in which it has happened, the attendant hæmorrhage was either at once altogether arrested, or became so much diminished as not to be afterwards alarming.

3. The presence or absence of flooding *after* the complete separation of the placenta, does *not* seem in any degree to be regulated by the extent of the interval intervening between the detachment of the placenta and the birth of the child.

4. In 10 out of the 141 cases, or in 1 out of 14, the mother died after the complete expulsion or extraction of the placenta before the child; whilst, as we shall see immediately, about 1 in every 3 of the mothers dies under turning and extraction of the child in unavoidable hæmorrhage.

5. In 7 or 8 out of these 10 natural deaths, the fatal result seemed to have no

connection with the complete detachment of the placenta, or with consequences arising directly from it; and if we did admit the 3 remaining cases, (which are doubtful), as leading by this occurrence to a fatal termination, they would still only constitute a mortality from this complication of 3 in 141,—or of about 1 in 47 cases.

These facts tend strongly to shew that the artificial and complete detachment of the placenta would in all probability be in some cases and varieties, at least, of unavoidable hæmorrhage, accompanied with much saving of maternal life. I know further, that in several instances recorded by Collins, Ramsbotham, Lowenhardt, &c., this treatment had been followed with success, when perchance it had been had recourse to by midwives, and others, under supposed mismanagement, and in ignorance and defiance of all the established rules of practice in this special complication.

I subjoin in a foot-note* the details of a case of this description very kindly forwarded to me, some time since, by Mr. Cripps of Liverpool. I insert it as, at one and the same time, illustrative both of the preceding remark, and of some of the other observations which I have already offered.

Exactly a year ago, I had an opportunity of putting, for the first time, to the test of experience, the practice which the foregoing remarks all lead to suggest, of *detaching, and,*

if necessary, extracting the placenta and not the child in unavoidable hæmorrhage. The lady (a patient of Mr. Hill of Portobello), was taken in labour between the 7th and 8th month of pregnancy, and, in consequence of the severity of the discharge, was blanched and prostrated when I first saw her. The vagina was filled with coagula, and the os uteri was, in consequence of its small size and great height, reached and passed with difficulty, so as to ascertain fully the presentation of the placenta. Anterior to it I was able after a short time to reach and rupture the membranes. Notwithstanding this, however, along with the exhibition of ergot, &c., the discharge and sinking continued to go on. It seemed very difficult and dangerous to attempt to turn in consequence of the state of the os, and as the edge of the after birth was offering to protrude through it, I separated and gradually extracted the whole placental mass. From the time that this was accomplished all hæmorrhage ceased. The cord was cut, and the placenta removed from the bed. The infant came down slowly, and was safely expelled about two hours afterwards. The mother made a perfect and speedy recovery.

Similar cases of the successful adoption of the same practice have, since the period at which my paper appeared in Dr. Cormack's Journal, been published by Mr. Wilkinson, Mr. Greenhow, Mr. Jones, and Dr. Maclean. In all these instances the mothers were saved, and rapidly recovered. Dr. Lever and Dr. Bird have informed me within the last week, of two other recent successful instances of the same practice. In the course of a short time it seems not unreasonable to expect, that we may have a sufficient number of cases recorded, to enable us to judge with greater certainty and precision of the merits of this plan of treatment, and of the particular placental complications to which it may be specially applicable.

The proposal of the practice of separating and extracting the placenta before the child in unavoidable hæmorrhage, and thus (to use the expressions of Dr. Robert Lee), "departing from the rule (of turning the child) which has been established in the treatment of cases of placental presentation for the last two hundred years," and "subverting the established rules of practice in the treatment of cases of such vital importance," has, as might naturally be expected, given rise to considerable discussion and difference of opinion. In the MEDICAL GAZETTE for September 19th, I find that Dr. Lee has entered his present dissent against the proposed treatment. The tone and character of Dr. Lee's remarks might save me from the necessity of offering any answer to them; but, for the sake of the practice under dispute, I shall correct in de-

* "I was sent for—Mr. Cripps writes me—a few days ago, about 8 P. M., to see a poor woman who supposed herself to be at the early part of the last month of pregnancy with the third child. She had had occasional flooding to no great extent for a week previously. On the morning of the day on which I saw her, a surgeon had been sent for in consequence of the occurrence of several labour pains, together with a good deal of hæmorrhage. This gentleman being out of town, his assistant went; he remained with her during the day, and in the evening finding things not going on so favourably as he wished, he sent for a friend of his employer's, who, soon after his arrival, sent for me. On making an examination, I found an arm down, which was much swollen, and the pains very severe. I immediately gave one drachm of laudanum, and on their subsiding, turned without much difficulty. The funis was divided, only about four or five inches remaining, and appeared as though it had been cut. On expressing my surprise at this circumstance, I was informed that it was cut when the after-birth was taken away, about 10 in the morning. Not believing it possible that such could be the case, there having been no hæmorrhage whatever from that hour until the period of delivery, I searched for the other portion of the navel-string, but not finding it, and being again assured that "the after-birth had come in the morning," I introduced my hand into the uterus, and made a most careful examination; it was contracting satisfactorily, but was perfectly empty. I watched her strictly until her complete recovery. I had every portion of discharge saved for my inspection, and am therefore perfectly satisfied that this is a case in which the placenta presented, and was removed 10 hours previously to the birth of the child, and that, in the meantime, there was no hæmorrhage whatever."

tail some of the more prominent mistakes which his observations appear to me to contain.

Frist.—Dr. Lee appears to see no reason to depart from the practice which has been followed in placental presentations from the days of Ambrose Paré to the present time. The usual practice in these cases is well known to all. "The operation of turning, is (Dr. Lee observes), required in all cases of complete placental presentation," but

"is not necessary in the greater number of cases in which the edge of the placenta passing into the membranes, can be distinctly felt passing through the os uteri," (Lectures, p. 372). In these last, rupture of the membranes is sometimes sufficient.* In his paper in the GAZETTE, Dr. Lee has given the following tabular view of eight late cases of placental presentation, in illustration of the success of the ordinary mode of treatment.

No.	Complete. or Partial.	Treatment.	Child.	Mother.
36	Complete.	Turning.	Dead.	Recovered.
37	Complete.	Turning.	Alive.	Recovered.
38	Partial.	Membranes ruptured.		Recovered.
39	Partial.	Craniotomy.	Dead.	Recovered.
40	Partial.	Craniotomy.	Dead.	Recovered.
41	Partial.	Craniotomy.	Dead.	Recovered.
42	Complete.	Turning.	Dead.	Recovered.
43	Uncertain.	Perforation of Placenta.	Dead.	Recovered.

If the above table afforded a correct idea of the success of the common practice in placental presentations, I should never have attempted to change it. But unfortunately, turning, "which is required (according to Dr. Lee) in all cases of complete placental presentation," is followed in this complication with very fatal and disastrous

results. Among Dr. Ramsbotham's reports of the Maternity Charity and Dr. Lee's previously published cases, I find 61 instances in all reported, of placental presentations, in which turning and extraction of the child were had recourse to: The following table shows the results.

A tabular view of the results of 61† cases of Turning in Placental Presentations.

Reporters.	No. of Cases operated on.	No. of Mothers saved.	No. and proportion of Mothers lost under this treatment.
Dr. Lee . . .	24	14	10 or nearly 1 in every $2\frac{4}{10}$.
Dr. Ramsbotham.	37	23	14 or nearly 1 in every $2\frac{7}{10}$.
Total . . .	61	37	24 or nearly 1 in every $2\frac{1}{2}$.

Hence, 24 out of the 61 mothers sunk under this treatment. More than 1 out of every 3 was lost. Or, in other words, under this practice about 65 per cent. of the mothers were saved, and 35 per cent. of them died.

The great mortality resulting from the treatment of turning in placental presentation, may be more strongly shewn to some minds if the fact is stated in another form. In order to ascertain the fatality of the Cæsarean section abroad, Dr. Churchill collated with much care the histories, from foreign authorities, of 371 cases of the

operation. Out of these 371 cases, 217 mothers recovered, and 154 or nearly 1 in every $2\frac{4}{10}$, died. (Midwifery, p. 318.) This is exactly, and to a fraction, the degree of maternal mortality accompanying turning in placental presentations, in the cases reported by Dr. Lee in his Clinical Midwifery. *In other words, the success of turning in unavoidable hæmorrhage, in Dr. Lee's private and consultation practice (as reported in that work) has not been greater than the reputed success of the Cæsarean section upon the continent of Europe.*

When we see that the results of turning the child in placental presentations are so

* Some years ago the common practice of rupturing the membranes in partial placental presentations appears not to have been recommended by Dr. Lee. "It may be laid down (he states), as a rule admitting of no exception, that when hæmorrhage occurs from the placenta being situated over the os uteri, artificial delivery must be performed;" and he goes on to show it is performed by turning and extracting the child. (Researches on Diseases of Women, p. 207.)

† To prevent error, it may be proper to repeat that these 61 instances include all the cases of turning in placental presentation, which I find reported in the returns of Dr. Lee and Dr. Ramsbotham. Dr. Lee's returns are those of his private and consultation practice. Dr. Ramsbotham's returns are those of the practice in his own district of the Royal Maternity Charity.

very mortal in the hands of two such distinguished accoucheurs as Dr. Ramsbotham and Dr. Lee, what degree of success can we expect to follow it in the hands of the general mass of medical men?

Last year Dr. Lee most truly and justly remarked of turning in placental presentation, "*At best it is a dangerous operation, and you can never tell with certainty whether or not the patient will recover after its performance, however easily it may have been effected.*" (*Lectures*, p. 373.)

Secondly.—Dr. Lee seems to argue as if I recommended the artificial detachment of the placenta in *all* forms of placental presentation in which turning is at present adopted. On the contrary, I have explicitly mentioned it as a mode of treatment to be adopted when rupturing of the membranes is insufficient, and turning is either inapplicable or unusually dangerous. I believe it will be found, for instance, the proper line of practice in severe cases of unavoidable hæmorrhage complicated with an os uteri so insufficiently dilated and undilatable as not to allow, with safety, of turning; in most primiparæ; in many of the cases in which placental presentations are (as very often happens) connected with premature labour and imperfect development of the cervix and os uteri; in labours supervening earlier than the seventh month; when the

uterus is too contracted to allow of turning; when the pelvis or passages of the mother are organically contracted; in cases of such extreme exhaustion of the mother as forbid immediate turning or forced delivery; when the child is dead; and when it is premature and not viable.

As an illustration, I shall take the first set of cases I have adverted to; "There is not unfrequently (says Dr. Lee) most profuse and alarming flooding from complete placental presentation, where the os uteri is so thick, rigid, and undilatable, that it is impossible to introduce the hand into the uterus without producing certain mischief. In 13 (he adds) out of the 36* cases contained in the following table, the os uteri was rigid and undilatable." Hence, this complication occurred as frequently in Dr. Lee's practice as in about one out of every three of his placental presentations. In his Clinical Midwifery, out of 35† cases alleged to be reported, in 11 there had been more or less rigidity of the os uteri with dangerous hæmorrhage. From the mode in which the individual reports are drawn up, it is by no means easy to determine exactly and with perfect precision, the "eleven‡" cases which Dr. Lee himself classes under this remark, but I believe I have correctly given them in the following table:—

Table of Eleven Cases of Placental Presentation, from Dr. Lee's Clinical Midwifery: shewing the combination of "more or less rigidity of the os uteri, with dangerous hæmorrhage."

No.	Complete or Partial Presentation.	Treatment.	Child.	Mother.
266	Not stated.	Turning.	Alive.	Died.
267	Not stated.	Extraction by foot.	Not stated.	Recovered§.
271	Complete.	Turning.	Not stated.	Died.
272	Partial.	Membranes ruptured.	Dead.	Died.
274	Partial.	Membranes ruptured.	Not stated.	Died.
277	Complete?	Turning.	Alive.	Died.
282	Complete.	Extraction by feet.	Not stated.	Died.
283	Complete?	Craniotomy.	Dead.	Died.
284	Complete.	Extraction by feet.	Dead.	Recovered.
285	Complete?	Turning.	Not stated.	Died.
287	Complete.	Extraction by feet.	Not stated.	Recovered .

* Dr. Lee has here committed a statistical error in regard to the number of placental presentations occurring in his own practice, and reported in his Lectures. The number should be 38, and not 36.

† Another statistical mistake of Dr. Lee regarding the number of *his own* cases. His Clinical Midwifery contains 36 and not 35 cases of placental presentation. See other of Dr. Lee's inadvertent errors on this head mentioned in a subsequent note respecting the number of children lost in these and other placental presentations.

‡ Probably the number 11 is indicative of another error in Dr. Lee's reports. Dr. Lee, in his Lectures, adverts to 13 such cases; in his Clinical Midwifery, he limits the number to 11. If the cases were 13 in number, then the number 11 is wrong; or the reverse; for although he has reported 38 cases, in all, in his Lectures, and 36 in his

clinical work, yet neither of the two *additional* cases reported in the Lectures presented any difficulty on the part of the os uteri. In one case (Case 37) it was "little dilated but dilatable;" in the second (Case 38) the report is, "os uteri dilated to size of a crown-piece, dilatable." If we admit 13 instead of 11 cases, we must, I believe, include Cases 260 and 289 of the Clinical Report. In both of these cases the mothers died. This would give us in the text a *proportion of ten maternal deaths out of thirteen mothers operated on.*

§ "A violent rigor (Dr. Lee states) followed [the delivery] which threatened for a time to destroy the patient. Bottles of hot water were applied to the feet and pit of the stomach, the whole body was covered with hot blankets, and brandy was freely administered. She slowly recovered from the effects of the immense loss of blood."

|| "The pulse could scarcely be perceived for

Here we have only three mothers saved out of eleven operated upon; and two of the three saved evidently made a very narrow escape from death. I doubt if the most fatal of all human diseases—the plague itself—be found to destroy so large a proportion of those attacked. At all events, the operation of turning and artificial delivery, in unavoidable hæmorrhage, with the os uteri imperfectly dilated, would, from these and other cases, appear to be more deadly than any operation that is deemed justifiable in the whole circle of surgery. It is more mortal even than Ovariectomy.

I believe, on the other hand, that in the above and similar cases, by the introduction of a finger, or of a common sound or bougie, (such as Dr. Hamilton employed when the os uteri was still shut, and in order to separate the membranes for some inches from the cervix*, in order to induce premature labour), the placenta might be readily and completely detached—the attendant bleeding in this way arrested—and the labour subsequently allowed to proceed to a natural and safe termination, if it were a head or pelvic presentation. And if the child were placed transversely, a more safe and proper period could be waited for and selected for the version of it.

Would the strength of the natural organic adhesions of the placenta to the uterus prevent the easy separation in this way of the one organ from the other? I believe not. Speaking of the mere anatomical fact, Dr. William Hunter, in his celebrated work on the Gravid Uterus, observes, that the separation of the placenta from the uterus is “commonly practicable with the least imaginable force.” In his paper on the Structure of the Placenta, published in the Philosophical Transactions for 1832, Dr. Lee, whose intimacy with Dr. Hunter’s work is well known, curiously uses not only a similar, but exactly the same quaint expression and words, telling us that generally after labour the placenta is detached from the uterus “with the least imaginable force.”

Thirdly.—Dr. Lee argues against the practice of extracting the placenta before the child, because it was not followed by “Guillemeau, Mauriceau, Portal, Levret, Giffard, &c. &c.” If the argument were true, it would be one of no weight, because, on exactly the same ground, nothing novel should ever be allowed to be introduced into practice. Dr. Lee has fallen into some curious mistakes† in the two or three different

histories which he has attempted to give of placental presentations. I shall leave it to my professional brethren whether the following misrepresentation is to be referred to the same category of mistakes, or is capable of—a more direct and simple explanation. :

Dr. Lee has given in his published “Lectures on the Theory and Practice of Midwifery” a special and detailed account of the *individual* cases of placental presentation recorded by Portal, and had therefore taken evidently very great pains to study minutely that author’s views and practice in this complication. In his late paper in the *MEDICAL GAZETTE*, Dr. Lee strongly asserts that Portal is one of those great practical accoucheurs who never “attempted in a single instance to tear away or detach the placenta from the neck of the uterus, when it was so undilatable as to render it impossible to pass the hand to turn the child and deliver, nor in any other condition whatever of the part, before the birth of the child.” p. 895.

In describing his 43d case, Portal observes “Je glissay ma main dans l’entrée de la matrice, où je sentis l’arrière-faix qui se presentoit. L’ayant *séparé*, afin de me frayer le chemin, je sentis les membranes des eaux que je perçay, et les eaux s’éstant écoulées, je tiray l’arrière-faix le premier, afin qu’il ne m’incommodast point à la sortie de l’enfant.” Here Portal distinctly states that he separated and extracted the placenta *first*, and before trying to extract the child. He states the same thing in his 69th case, and, if possible, still more explicitly*. Dr. Lee, who, on the present occasion, so strenuously asseverates that Portal did never, in a single instance, follow this practice, *actually quoted and printed* last year in his published Lectures, and from the French edition of Portal’s work the first half of the above sentence†, in which Portal himself so circumstantially declares that he did follow this practice. (See the quotation in Dr. Lee’s Lectures, p. 366.) I feel assured that any additional comment of mine will be here excused, as entirely superfluous.

Fourthly.—Dr. Lee states that the practice which I have ventured to recommend in placental presentations “was performed two hundred years ago by an ignorant and audacious impostor, on a lady who died in Paris, whose case is related, with denunciations of the practice, by Guillemeau.”

treatment of this (the unavoidable) variety of flooding in the latter months of gestation.”—(Researches on the Diseases of Women, p. 209.) In his late Lectures, p. 268, Dr. Lee advances a variety of evidence to shew that Levret on this point only “undertook to prove (to use again Dr. Lee’s own words) what, it appears, had *previously* been demonstrated”—by Portal, Mauriceau, Giffard, Rmellie, &c.

* Je separay tout doucement cet arrière-faix, et je tiray dehors; ensuite je glissay ma main dans la matrice, &c. &c.

† Dr. Lee’s quotation terminates at the word “perçay.”

many hours after, but the circulation in the extremities was gradually restored, and she recovered.”

* Dr. Lee himself seems to have met with no difficulty of any kind in following this practice. See Lectures, p. 319; and Clinical Midwifery, cases 142, 145, &c.

† “We are *solely* (says Dr. Lee) indebted to Levret for the discovery of every important fact relating to the causes, the symptoms, and the

It is a singular fact, and shows how differently two men *may* interpret an author's meaning, that in the discussion to which the proposed practice has given rise, Guillemeau should have been now twice brought up in evidence against me, in order to prove directly contrary allegations. In the Provincial Medical Journal for April, Dr. Blenkinsop published Guillemeau's rules of treatment in placental presentations, in order to show that Guillemeau had actually long ago recommended the artificial detachment of the placenta before the child. Now Dr. Lee appeals to Guillemeau's writings to show that Guillemeau actually long ago denounced the practice in question. I have elsewhere taken occasion to show that Dr. Blenkinsop's mistake was an inadvertent error of judgment. Dr. Lee's mistake consists in simply misrepresenting the facts of the case he alludes to. I recollect the results of Guillemeau's case well. In an instance of accidental (?) hæmorrhage the midwife pulled at the ruptured membranes, and dragged away them and a *part* of the placenta. If she had separated the *entire* placenta, as has in ignorance been repeatedly but safely done by other midwives since her time, the flooding would in all probability have ceased. As it was, Guillemeau states that she separated only a *part* of the placenta, and consequently the mother almost inevitably died. Surely Dr. Lee understood Guillemeau so far as to know that it was hence an instance not at all in point, or bearing in any degree upon the subject, inasmuch as it was *the truth* not an instance of detachment of the whole placenta.

Fifthly.—Dr. Lee objects that the child would inevitably be lost by the mode of practice which I have described. The objection which has been often urged against my views is stronger in appearance than in reality. For, without insisting upon the principle generally acknowledged by Dr. Lee and other British accoucheurs, that we should sacrifice the child in those cases of extreme danger in which that sacrifice adds greatly to the chances of the safety on the part of the mother,—there are various other considerations, connected with the life of the child itself, which destroy the apparent force of the argument.

The fact is, that in cases of placental presentation treated under the present acknowledged rules of management, a very large proportion of the children are lost. I have previously stated that in his Clinical Midwifery Dr. Lee has detailed and reported thirty-six, and not, as he himself inadvertently but erroneously reckons them, thirty-five* cases of unavoidable hæmorrhage. In 13 out of these 36 cases Dr. Lee

does not state the result to the child, though the context leaves no doubt that in several of these cases the infant perished during delivery. In 23 cases he mentions the condition of the child at birth. In 8 out of these 23 cases it was born alive; in the remaining 15 it was born dead. Hence *nearly 2 out of every 3 of these children died* under this complication, or 65 per cent. of them were lost.

Besides, in exactly those varieties or complications of unavoidable hæmorrhage in which I have ventured as yet to recommend the practice of detaching the placenta, the child is already in most instances inevitably lost, or almost certain to perish under any of the established modes of treatment; that is, it is either too weakly or premature to be viable, or it is almost sure to perish if forced delivery is attempted (as when the os uteri is imperfectly dilated or the pelvis contracted), or it is actually dying or dead when interference is required. On the other hand the child is not always lost when the placenta is detached before it. Out of 106 cases in which the placenta was expelled before the child, and the result to the latter noted, the infant was born alive in 33 instances (see Dr. Cornack's Journal for March last); or 31 per cent. of the children were saved. In most of these cases the child was expelled within a few minutes after the complete separation of the placenta. When the interval is longer, and we require, after the detachment of the placenta, to wait for a length of time, is there no hope of making the child survive by continuing either its placental or pulmonary respiration during the intervening period? Dr. Lee tells us that in some cases of pelvic presentation, acting upon the suggestion of Dr. Bigelow and "older accoucheurs," he has, before the head could be extracted, pressed back the maternal parts "that the air may gain admission into the mouth of the child and the respiration go on, when the circulation in the cord has been arrested. I have seen (he adds) from twenty minutes to half an hour elapse in some cases after the cord had ceased to pulsate. . . . If the head be low down, the fingers alone can give the necessary assistance; but if it is high in the pelvis, and reached with difficulty, the assis-

bers which he has affixed to his cases in the table printed at p. 895 of his paper. In his Clinical Midwifery, in reporting his placental cases, he has committed another numerical mistake in passing from Case 289 to Case 291, omitting altogether 290. I mention these mistakes as liable to mislead us in some calculations, and not with the view of showing any desire to impute blame or offer serious criticism for errors of such a caste, and which it is so difficult always to avoid. In the number of the GAZETTE containing Dr. Lee's late paper, the Editor has shown (p. 917) that the Registrar-General himself, whose very profession consists of statistical calculations, has published a very "serious error" of a numerical kind, in one of his late official returns.

* In his late paper in the GAZETTE, Dr. Lee commits the same mistake in summing up the number of *his own* cases of placental presentation. Hence, there is an error in all the num-

tance of a tube may be required." (Lectures, p. 335.) Is it hopeless to suppose that the same principle, or other means, may yet be successfully employed to keep the child alive, after the placenta is extracted in unavoidable hæmorrhage, and in some cases give it even a greater chance of life than under the continuance of the flooding, or the operation of forced delivery?

Lastly,—Dr. Lee seems to believe that one of my tables gives an erroneous view of the common degree of maternal danger attendant upon placental presentations, when it shows that about 1 out of every 3 mothers perish under this obstetric complication.

Some years ago Dr. Churchill endeavoured to ascertain statistically the number of mothers that died under placental presentations, and from a variety of data calculated that the mortality amounted to about 1 in 3.

In his own Lectures on Midwifery, published in 1844, Dr. Lee quotes, and so far adopts from Dr. Churchill, the fact that "out of 174 cases of placental presentation recorded by different authors, 48 proved fatal, or nearly 1 in 3." (Dr. Lee's Lectures, p. 371.)

We have already seen that in Dr. Lee's own recorded cases of turning in unavoidable hæmorrhage, the maternal mortality was greater than 1 in 3.

The table of maternal deaths printed in my essay in Dr. Cormack's Journal, is in perfect accordance with these results of Dr. Churchill and Dr. Lee. The principal difference is, that it contains a much larger number and more extensive foundation of statistical data. In collecting its materials I proceeded rigidly upon the principle of only entering upon it the results of the practice of those individuals or institutions upon whose records I could find ten or more cases of unavoidable hæmorrhage. In this way I believed I would be more certain to arrive at an accurate statistical result, than if I made my calculation upon the collection of cases of a smaller number scattered throughout our medical journals. I noted down all the lists of instances I could detect in which ten or more cases were reported. Latterly, I have found that I erroneously omitted Paul Portal, because I relied on Dr. Lee's accuracy, when, in his Clinical Midwifery, he stated that Portal's work contained an account of "eight" cases only of unavoidable hæmorrhage, while it contains notices of the results of fourteen. In drawing up the table I am not at all further ashamed to own, that, harassed as I was at the time with abundance of other professional occupation, I fell, in working up the data, into some other inadvertent errors, which will be found rectified in an extended essay on the whole subject, the printing of which

is now nearly completed. Seeing that Dr. Lee and Dr. Ramsbotham have both committed numerical errors of the same kind in summing up, and calculating upon, the results of *their own* limited number of placental cases, it will perhaps be considered the more excusable that in searching out and reckoning up the results of far more numerous returns and reports of a similar description given by others, and, for the most part, scattered in a disjointed and unarranged form throughout their published works, I should have committed some similar errors. I did not, for example, discover some additional instances of death of the mother in placental presentation in Smellie's works, in a section (where I did not expect them) upon the Cæsarean operation; and I have corrected one or two errors of the same kind by the more careful collation of the writings of Giffard, &c. But these corrections do not alter, in any practical degree, the *statistical result* regarding the degree of mortality among mothers in placental presentations. More extensive data than I had access to *may* alter that result, but probably not to any marked amount. And, indeed, the actual total fatality of the complication may possibly be even higher than such calculations can prove, because they demonstrate the consequences of the complication and its treatment in the hands of the highest members of the profession, while they afford us little or no insight into the number of deaths produced by it among the patients of less experienced practitioners. As to the special mistake in my table of cases which called forth the animadversions of Dr. Lee in his late paper in the *Gazette*, I beg, in exculpation, to submit to the readers of that journal, some letters, explanatory of its nature, and illustrative of the difficulties attendant upon all such inquiries.

[A number of letters* have been forwarded to us by Dr. Simpson in reference to the subject in dispute between himself and Dr. Lee. We have felt compelled to decline admitting them except as *extra limites* upon Dr. Simpson's own responsibility. The treatment of uterine hæmorrhage in cases of placental presentation is one of such interest and importance, that so far as facts and personal experience are concerned, we think our pages well occupied with the discussion, more especially between men of such reputation as Dr. Simpson and Dr. Lee. We can, however, only admit into the body of the journal, facts of general interest to our readers. Matters purely personal either cannot be inserted at all, or can only be admitted as *extra limites*.—*Ed. Gaz.*]

* Owing to the arrangements of the Stamp Office, it was found impossible to insert the letters this week in a Supplement.

ILLUSTRATIONS OF THE
INTEREST AND IMPORTANCE OF
THE STUDY OF CASES OF SUDDEN
OR VIOLENT DEATH.

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[Continued from page 937.]

II.—*Of the study of cases of sudden or violent death as illustrative of the more intimate or essential nature of diseases.*

1. In the first place, it is calculated to disabuse our minds of the notion, less prevalent now than twenty years ago, that disease has either generally, or always and necessarily, its origin in change of structure; that the rationale, therefore, of any disease may, in fatal cases, be had by an inspection of the body after death; and that pathology and morbid anatomy are equivalent expressions.

On this subject I shall content myself with quoting the admirable observations of the reviewer in the *Edin. Med. and Surg. Journal*, of Mr. Travers' well-known work on "Constitutional Irritation," wherein he points out, from a consideration of those cases, the erroneousness of such a notion, the true nature of pathology, and its relation to morbid anatomy.

"It is not the least important effect of Mr. Travers' inquiries that they will fix the attention of medical inquirers for a time on diseased actions, which, although quickly and often inevitably fatal, leave behind them no marks of injury of any of the vital organs discernible on dissection. So much has been said, of late years, of the various genera and species of 'organic lesions,' that medical inquirers seem disposed to forget that pathology is the science of diseased actions, not of diseased structures. The study of these last is, in fact, theoretically important only in so far as it elucidates the process by which they have been formed, and the alteration of the functions of parts essential to life which has accompanied them, sometimes as their direct and necessary effect, at other times as an indirect or sympathetic consequence. And this study is practically important only in so far as the information thus

acquired tends to explain and confirm, or to invalidate, the efficacy of the means by which these diseased actions are thought to be prevented, modified, or controlled. In every case a process of reasoning is necessary, to enable us to draw any useful inference from the observation of diseased structures; and that observation must be connected, not only with the symptoms recently preceding death, and resulting from the organic lesions themselves, but with the whole train of circumstances that preceded their development, and with the symptoms that marked the earlier steps of their formation.

"That the attention of pathologists may be recalled to these obvious but somewhat neglected truths, it seems to be peculiarly important to dwell for a little on the class of cases which are the subject of the work before us—cases of extreme interest, and of urgent danger, in which the actions of the vital organs are either suddenly arrested, or rapidly suppressed, by a known cause; but in which examination after death presents no such organic lesions of these organs as can be supposed to have produced the fatal event, or even no such appearance as can be distinctly recognised as morbid: in regard to which, therefore, the conclusions of the pathologist must rest on the observation and comparison of symptoms, and of symptoms alone."*

As a right apprehension of the nature of pathology, and of its relation to morbid anatomy, is of real importance, I hope I may be allowed to quote, also, the following remarks on the subject by Dr. Alison, in his "History of Medicine in the Present Century." They do not, indeed, like the former quotation, illustrate the subject by a reference to cases of sudden death, and are therefore, in a manner, foreign to the object of this paper; but the sentiments generally are strictly in accordance with those just expressed, and are such as deserve to be "read, marked, learnt, and inwardly digested," by every practitioner.

After stating that "the additions which have been made to our knowledge of the nature and proper treatment of diseases during the time under review, may be traced, for the most part, to the extent and minuteness with

* *Ed. Med. and Surg. Journ.* vol. xxvi. p. 320-1.

which the study of morbid anatomy has been cultivated;" and while he observes that "it is evident that the department of morbid anatomy is that in which the grand improvement of medical science has lately been effected, and that it is from judicious reasoning on the more intimate knowledge thus acquired of the nature of diseases, that any material improvement in the precision of our practical rules has resulted," Dr. Alison says:—

"This study has, indeed, engaged so much attention of late years, that the term pathology has very often been used as synonymous with morbid anatomy: as if there were no other sources, from which we could draw our knowledge of the changes in the living body, constituting disease, than the changes in the dead body which disease leaves behind it. This, however, is a manifest error in science. These alterations in structure produced by disease are only one of the elements of our reasoning on the nature of diseased actions themselves; and there are many other facts, as to the external causes of diseases, the nature of their leading symptoms, their consequences, local and general, in the living body, and the *juvantia* and *ludentia* affecting them, which likewise furnish the proper elements of inductive reasoning, for the determination of those laws of the animal economy, which it is the object of the science of pathology to establish.

"It is also an important practical error to fix the attention, particularly of students of the profession, too much on those characters of disease which are drawn from changes of structure *already effected*, and to trust too exclusively to these as the diagnostics of different diseases; because in many instances these characters are not clearly perceptible until the latest and least remediable stage of diseases; the very object of the most important practice in many cases is to *prevent* the occurrence of the changes on which they depend; and after they are established, the cases are very often hopeless, or admit only of palliative treatment. In those diseases in which most can be done by art, our practice must always be guided in part by conjecture, because, if we wait for certainty, we very often wait until the time for successful practice is past; and therefore, although an accurate knowledge of the

whole history of each disease is essential to its proper treatment, yet in a practical view the most important part of its history is the assemblage of symptoms, by which its nature at least, if not its precise seat, may often be known, before any decided lesion of structure has occurred. Accordingly, when this department of pathology is too exclusively cultivated, the attention of students is often found to be fixed on the lesions to be expected after death, much more than on the power and application of remedies, either to control the diseased actions, or relieve the symptoms, during life."*

One word more as to the proper use of morbid anatomy:—

The proper use to be made of morbid anatomy, "is to correct the histories, and remodel the distinctions and arrangements of diseases," as drawn from the observation and comparison of symptoms merely,—"*to separate those distinctions which are essential and uniform, and founded on the nature of diseased actions, from those which are dependent on adventitious circumstances, and therefore liable to continual variation,—and thus to give simplicity and precision to our views of the distinctions among diseases, and facilitate the application of practical experience.*"

"It is true that there are many diseases into the nature of which morbid anatomy gives us no insight; and that, with respect to all, the information it gives is available for the explanation of the phenomena only up to a certain point; but it always enables us to judge whether a disease, or the fatal event of a disease, is susceptible of explanation in this way or not. It is always one of the elements by which we are to judge of the nature and the true distinctions of diseases; and those cases in which nothing is seen to account for the fatal event, are just as valuable in this view, as those where it is most satisfactorily explained."†

2. In the second place, with regard to what is termed the primary elements of disease, this study, while it gives unquestionable proofs that these

* Cyc. of Pract. Med. vol. i., pp. lxxxvii-i. See also, Brit. and For. Med. Rev. vol. iii. p. 302: and Outlines of Path. and Pract. of Med. p. 38, et seq.

† Brit. and For. Med. Rev. Vol. i. pp. 28-9.

have, in many cases, their seat in the *solids*, supplies, likewise, certain of the facts on which is grounded the opinion, now very generally held, that they have often their seat also in the *fluids* of the living body, exclusively in some instances, and equally with the solids in others, and perhaps in most; and that any system of pathology to be complete and satisfactory must have *humoralism* as well as *solidism* for its basis.

It would not be easy, indeed, from this source alone to furnish clear and unequivocal proofs of the correctness of that opinion, because in fact it rests on the combined force of a variety of considerations, physiological and pathological, chemical and microscopical. It would be still less easy to do so without entering into minute details. It may suffice, however, to have thus alluded to the subject, and to point simply to the facts in the history of cases of violent death, which form part of the general body of evidence. These are the fluid state of the blood, implying loss of its vitality, so generally met with in this class of cases, and simultaneously produced, we cannot doubt, in many instances at least, with the extinction of the vital power of the solids; other less appreciable and more variable changes in that fluid consequent on the introduction of poisons into the circulating mass;—the injurious influence (whether negative or positive), of imperfectly arterialized blood on the solids of the body generally, its especial influence on the circulation through the lungs, and, according to some, on the brain and nerves; its non-oxygenation as the primary origin of the changes constituting asphyxia, its re-oxygenation, by the artificial respiration, in cases of apparent death from that cause, as the equally primary origin of those by which re-animation is effected,—the former directly arresting the circulation through the lungs, the latter renewing it, and that prior and essential to the failure, in the one case, and to the restoration in the other, both of the heart's action and the functions of the nervous system.

[To be continued.]

CLINICAL MIDWIFERY.

THE HISTORIES OF TWO ADDITIONAL CASES OF UTERINE HÆMORRHAGE FROM PLACENTAL PRESENTATION; WITH THE RESULTS OF EIGHTY-NINE CASES OBSERVED BY DR. MERRIMAN.

By ROBERT LEE, M.D. F.R.S.

CASE XLIV. — On Saturday evening, the 20th September, 1845, I saw in consultation with Mr. Walters, of Bedford Bury, St. Martins, a patient in the last month of her third pregnancy, who three weeks before had been suddenly attacked with flooding. Although much blood had been lost at different times during the three weeks, yet her strength was but little impaired until the evening when I was called to see her, soon after the escape of a very large quantity of blood both fluid and coagulated. The pulse could then scarcely be felt; the countenance was that of a person sinking from loss of blood, and at times the faintness was so great that she was quite insensible. The os uteri was sufficiently open to allow the points of the fore and middle fingers to enter, and the placenta was felt adhering to the whole circumference of the neck of the uterus. The hæmorrhage still continuing, and the orifice of the uterus, though but little dilated, being apparently in a relaxed state, I resolved, as the only means of preserving her life, to attempt immediately to introduce the hand into the uterus, or the fore and middle fingers only, if the whole hand could not be passed without much force, to rupture the membranes, seize the feet, and extract the child by turning. I acquainted her husband and relatives, before commencing the operation, with her true condition, and expressed my fears that she would die before it was completed or immediately, after, urging strongly at the same time the necessity of having recourse to immediate delivery as the only means of preserving her life. Stimulants having been freely administered, and the binder applied, the hand was readily introduced into the vagina, and the fore and middle fingers between the placenta and uterus on the anterior part to the membranes. On endeavouring gently to dilate the os uteri, and pass the whole hand into the cavity, I found that this

ould not be accomplished without using greater force and wasting more time than the urgent circumstances of the patient warranted. I resolved, therefore, to attempt to seize a foot with the fore and middle fingers only passed through the os uteri, which was done almost the same instant that the membranes were ruptured, and the head of the child pushed aside. The lower extremity was then easily drawn into the vagina, but the os uteri contracted so firmly upon the nates, that strong traction was required some time before they could be brought into the vagina. The trunk and superior extremities, and head, were then drawn through the os uteri with less difficulty than could have been expected. The placenta not being wholly detached, was left for a short time, and then removed, after the binder had been tightened, and stimulants again freely exhibited. The hæmorrhage ceased, the state of dangerous exhaustion into which she had sunk passed slowly away, and she has recovered in the most satisfactory manner.

CASE XLV.—A lady eight months pregnant was attacked with uterine hæmorrhage on the 21st of August, 1845; the discharge was not very profuse, and produced little effect upon the constitution. At different times both fluid and coagulated blood escaped, but in moderate quantity, until Monday, the 23d of September, when a great gush of blood suddenly took place while she was in the act of dressing. A serous discharge continued until Sunday the 28th inst., when a great quantity escaped, and faintness was produced. Mr. Byam, of Welbeck Street, soon after made an examination, and felt the placenta through the os uteri, which was soft and yielding, but not dilated to the size of a shilling. The flooding continuing, he soon after repeated the examination, and found the os uteri dilated to the size of a dollar. His hand was then passed up between the uterus and placenta on the anterior part, the membranes ruptured, and the child delivered by turning. An immense discharge of blood followed the extraction of the child. The placenta being wholly detached, was extracted, and the flooding entirely ceased. About an hour after, I saw the patient in a state of the most alarming exhaustion from loss of

blood. Though the binder and compress had been firmly applied around the abdomen, and large quantities of brandy administered, the extremities were cold, and I could not feel the pulse at the wrist, and there was almost constant delirium. Finding that there were coagula in the vagina, I removed these, and introduced a large sponge and pressed it up against the os uteri. For nearly eight hours the patient remained in the most dangerous condition, and scarcely any sensible effect was produced by the warmth and frictions applied to the extremities and surface, and the internal use of stimulants and anodynes. Twelve hours after delivery the pulse could be distinctly felt, the heat of the surface was beginning to return, and some sleep had been obtained. The exhaustion gradually disappeared, and on the fourth day the mammæ were distended with milk, and she was recovering in the most favourable manner. The child was dead, and the portion of placenta which had been detached was covered with coagulated blood.

The following are the results of the long and extensive experience of Dr. Merriman, in cases of placental presentation, whose sound judgment, and whose great accuracy in observing and recording results, give a value to his opinions far exceeding that which can be claimed for the opinions of any practitioner of midwifery now in existence.

DEAR DOCTOR LEE,—In compliance with your request, I enclose a statement of my experience in placental presentations, derived from eighty-nine cases which I have witnessed. To many persons it may probably appear extraordinary that I should be connected with so large an amount of these formidable deviations from nature, which are generally, perhaps too generally, considered as extremely rare occurrences. To explain this, it is necessary to premise that I have now been engaged in obstetric practice upwards of fifty years, and during this period of time I had for several years the professional care of the midwifery department of the Middlesex Hospital, of the Westminster General Dispensary, and of the parish of St. George, Hanover Square; besides being often called in consultation by former pupils and other

kind friends. It will, therefore, be easily understood, that among the cases I have enumerated, there were but few comparatively, of which I had the sole management, or with which I was acquainted at their commencement; but I always endeavoured to ascertain as many of the circumstances and facts as I could obtain, and the results are related as accurately as possible.

The deaths of the *two* women who died undelivered may be attributed to a most preposterous opinion, that no assistance could be given because there were no pains. In one of these cases this gross ignorance was only imputable to the friends and attendants, who, in consequence, delayed sending for the medical attendant till the patient was *in articulo mortis*; I, likewise, was sent for, but the patient was quite dead before I arrived. The other patient was likewise dead before I arrived; and here I am sorry to say the blame entirely attached to the medical man.

The *three* cases of premature labour were of five, six, and six and a half months of utero-gestation. In all, I believe that the fœtus had been some days dead; and I attributed to want of vitality in the ovum, the slight degree of hæmorrhage which occurred, though a large mass of placenta was, in each case, implanted over the os uteri.

The case in which the placenta was

expelled, first, occurred in the practice of a very expert and judicious surgeon, since dead. He consulted a physician of deservedly high reputation in midwifery practice, and they concurred in opinion that it would be safer to leave the case to nature than to interfere artificially. I was not called to this case till the poor lady was sinking under the effects of peritonitis. It appears to have been one of those distressing cases which could not have been treated in any way without extreme hazard: but I must confess that it had great weight with me in determining me to adopt in my own practice, and to inculcate the doctrine as a teacher, that in all, except a few extraordinary cases, as early an opportunity as was safe should be taken to effect delivery by turning.

Among the *seventy-eight* cases in which turning was sooner or later performed, there occurred nineteen deaths; in several of these, life, I make no doubt, would have been preserved had this operation been undertaken earlier. In three of the cases, at least, when the operation was commenced, there was scarcely the shadow of a chance that it would be successful.

Believe me, my dear sir,

Yours very faithfully,

SAMUEL MERRIMAN.

34, Brook Street, Grosvenor Square,
Sept. 23, 1845.

Results of Eighty-nine Cases of Placental Presentation.

		Mothers dead.	Mothers alive.	Children alive.	Children dead.
In 2	Cases no attempt whatever was made to assist; both the mothers died undelivered, presenting most appalling spectacles		2		2
In 5	Cases a small portion only of the placenta was attached to the os uteri; the pains were strong, and little assistance was required; in 2 or 3 cases the membranes were artificially punctured	5		1	4
In 3	Cases of premature labour, the pains were sufficient with very little assistance, to effect the delivery	3			3
In 1	Case the placenta was expelled before any part of the child was born; the os uteri then contracted and the hæmorrhage abated. After some hours the pains returned, and it was found that the arm presented; with some difficulty the child was turned and delivered. Peritoneal inflammation came on, which proved fatal about the eighth day		1		1
In 78	Cases turning was had recourse to: if this operation had, in some of the cases, been undertaken at an earlier period of the attack, it seems likely that several more lives would have been preserved	59	19	21	57
89		67	22	22	67

Eighteen cases of placental presentation were observed by Portal. In the histories of eight of these, it is stated that the placenta adhered all round to the cervix uteri; these were, therefore, cases of complete placental presentation. Only one of these 18 cases terminated fatally; and in 17 delivery was accomplished by the operation of turning. The following is the report of the fatal case:—

16th Nov. 1671: No. 39.—A lady, was insensible from the loss of blood she had been suffering for nineteen days, and which had increased greatly for twenty-four hours. The placenta was found adhering to the

cervix uteri, except in the middle. The infant was easily turned. Consciousness was restored, the pulse improved, and for a time it was hoped the patient would recover; but she again became insensible, and went into convulsions, and soon died. The great hæmorrhage before delivery, and delaying the operation of turning too long, were, he says, the cause of her death.

Mauriceau has related the histories of 17 cases of placental presentation, and in 16 of these delivery was accomplished by the operation of turning. Two women died after the operation; and one who would not consent to have it performed, died undelivered.

Results of Nineteen Cases of Placental Presentation observed by Giffard.

Case.	Treatment.	Child.	Mother.
10	Turning	Alive	Recovered
18	Placenta expelled; feet of child presenting	Dead	Recovered
19	Turning	Alive	Recovered
25	Turning	Alive	Died
41	Turning	Dead	Died
56	Turning	Dead	Recovered
82	Turning	Alive	Recovered
88	Turning	...	Died
115	Turning	Alive	Recovered
116	Turning	Alive	Recovered
118	Turning	Fœtus 4 months	Recovered
120	Turning	...	Recovered
121	Turning	...	Recovered
158	Turning	Alive	Recovered
160	Turning; flooding continued . . .	...	Died
185	Turning	Fœtus 7 months	Recovered
209	Turning	...	Recovered
224	Turning	Dead	Recovered
225	Turning; flooding continued . . .	...	Died

In 6 of these 19 cases, there was complete, and in 13 partial, placental presentation. Seven of the children were born alive, and five of the mothers died after being delivered by the operation of turning. If the histories of these five fatal cases be examined, it will be found that the death was produced in all of them by the great loss of blood which had taken place before the operation of turning was performed, or from the flooding continuing after the delivery both of the child and placenta. In the fatal cases related by Dr. Merriman, Portal, and Mauriceau, it will be seen that this was likewise the cause of death in the greater number of the unfortunate examples which occurred in their practice; and they all express their conviction that where turning was unsuccessful, it seemed to

be clearly owing to its having been too long delayed. Had Giffard torn away the placenta, instead of delivering by turning the child, it appears, from the preceding table, that he would, without any necessity, have destroyed the lives of seven children, or, to use the words of a distinguished accoucheur, "he would have been guilty seven times of the crime of infanticide."

FREQUENCY OF LEUCORRHOEA.

Dr. MARC D'ESPINE, of Geneva, says, in a memoir inserted in the Archives Générales de Médecine, for the year 1835, that of eighty women observed at Paris, twenty-seven only had never had fluor-albus; he adds, that of the fifty-three others, twenty-six had it before puberty, eighteen during that epoch, and nine only after that physiological revolution.—*M. Colombat on the Diseases of Females; Meigs' Translation.*

PRACTICAL OBSERVATIONS

ON THE

VARIOUS FORMS OF DYSPEPSIA.

BY ROBERT DICK, M.D.

Author of a Treatise on the "Derangements, Primary and Reflex, of the Organs of Digestion, with an Addition," "Treatise on Diet," &c.

[Continued from p. 903.]

DIGESTION.

I now proceed to the consideration of derangements of the lacteals, and of assimilation. This requires that I should previously advert briefly to some of the points relating to digestion.

In connection with this subject, considerable difference of opinion and much uncertainty still exist, although it cannot be doubted that great advances in removing its obscurities have, of late years, been made. The difficulties attending the subject have been not a little simplified by its being ascertained that the staminal principles of which animal bodies are composed, exist essentially, and even ready formed, in vegetable substances. Sugar, vegetable albumin, and fibrin, are, according to the latest researches of the most celebrated chemists, believed to be identical with animal fibrin and albumen; and even the casein of human milk is said to be identical with that which is to be met with in beans, peas, and lentils. All that the digestive process in man and the warm-blooded animals is therefore required to do, or is even capable of doing, is simply to re-arrange the staminal principles named above, as they are found in plants and in lower animals, and to combine them into muscle, nerve, &c.

In effecting this object, the first action of the stomach, in Dr. Prout's opinion, is a *reducent* one, and consists in the formation of a *hydrate*. Water has two forms of union with substances, an accidental or mechanical, and an essential or constitutional one. It is the latter manner of union which digestion effects between ingesta and water; and the object is plainly, by reducing the alimentary substance from a more to a less concentrated combination with water, from a *strong* or *high* to a weak or low state, to facilitate its chymification and chylification.

The object of primary or *reducent* assimilation is to convert all substances

into albumen, both those substances in which albumen exists and in which it does not.

That an acid, or that acids play a part in the digestive process, is undoubted: the chloric and lactic acids are, during this process, normally present in the stomach. These acids are derived from the blood circulating in the coats of the stomach, and also from alimentary matters. The carbonic, acetic, oxalic, and butyric acids, are also sometimes found in the stomach. These seem to be the products of derangement of primary assimilation, and their presence is no doubt frequently caused by the *excessive* development of the chloric and lactic acids. Lactic is nearly allied to acetic acid, both being derived from sugar and albumen; but the former separates the latter from its combinations. As this acid possesses the property of dissolving phosphate of lime, and is most probably the cause of this salt being kept in solution in milk, urine, &c., there may be grounds to suspect that to its superabundance is due *mollities ossium*, in consequence of its either preventing deposition of the phosphate of lime, or dissolving it after the phosphate has been deposited.

Integrally, the gastric juice appears as an almost limpid, very slightly yellowish fluid, mixed for the most part with a proportion of mucus: its taste is distinctly acid, and also slightly saline; it is endowed with antiseptic properties, and without smell. At a temperature of from 80° to 100°, it reduces to a pulpy or chymous state articles of food submitted to it. As many as 98 parts in the 100 consist of water; the remaining two parts are made up of free chloric and lactic acids, of pepsin (immediately to be noticed), of the salts of potass, soda, ammonia, magnesia, lime.

The active constituent is pepsin, first indicated and named by Schwann, but first isolated by Wasmann. By certain chemical manipulations, which it is unnecessary here to describe, since they are elsewhere to be found, the acetate or chlorate of pepsin may be obtained without great difficulty; the former of which appears in white flocks.

There is reason to presume that the chloric acid is the real solvent of food, but that the important province of the pepsin is to enable the acid to effect the solution at the ordinary tempera-

ture of the human body, and not at a greatly higher temperature, inconsistent with animal life, which temperature would otherwise be necessary. A single grain of pepsin, along with a minute quantity of chloric acid, and at a temperature of from 80° to 100°, is sufficient, though diluted by 60,000 times its mass of water, to reduce ordinary alimentary substances to a state resembling the chymous.

The fact that pepsin is deprived of its solvent property by heat and by alcohol, is pregnant with practical importance, and may, in part, account for the digestive derangements of those by whom alcohol is liberally imbibed, and who swallow liquid aliment (as we see many do tea, coffee, negus, and what is called toddy) at a temperature of from 120° to 160°, and even considerably higher.

It is remarkable that pure pepsin, from the stomach of an adult animal, does not coagulate milk. The rennet therefore found in the stomach of the calf and other young animals, and which possesses the property of coagulating casein, must owe this to some peculiarity in the pepsin of this period, which disappears when the animal ceases to be nourished on the maternal milk.

Alimentary substances, then, reduced by the gastric juice (the composition of which has just been described) into the chymous state, are poured into the duodenum. It cannot be doubted, from the glands which bestud it, that this portion of the intestinal canal contributes its share to the digestive act, though possibly its importance is not such as it was once supposed to be, and is chiefly owing to its being the part where the hepatic and pancreatic fluids blend with chyme, and where chyliification takes place. Yet the duodenum, I may remark, in passing, must always deserve much attention in our investigations of dyspeptic disease, since through it digestion may be gravely and mechanically embarrassed. From the limited moveability of the duodenum, and the circumstance that one-half of it runs a course counter to gravity, remora and impaction of alimentary matters are extremely apt to occur in this intestine. To resume: our knowledge of the process of chyliification is limited. What part the pancreas plays is as yet merely conjectural;

and less otherwise than some imagine is the answer to the question, what the office of the liver itself is?

It is unnecessary to enter here into the minute anatomy, &c. of the liver. It is believed that the lobules are composed of masses of nucleated cells, and that these cells are the ultimate elaboratories of the biliary secretion; but it seems not yet satisfactorily made out, either in what way the hepatic artery and portal vein reach, or the biliary ducts and hepatic veins quit, these cells. The greater part of the liver (with the exception, I mean, of the larger branches of the hepatic artery, portal vein, hepatic ducts, and hepatic vein) is composed of capillary vessels, and the nucleated cells afore-named. It is most probably in those cells that the principal structural, mechanical, and secretory derangements of the organ primarily occur. These cells, Mr. Bowman believes, contain, as a normal adjunct, globules of oil or fat; and in a morbid excess of number or size of these globules, consists, he imagines, the fatty liver of phthisis, &c. It seems, however, a question, why, in the liver peculiarly, the fatty degeneration should be confined exclusively to the cells, and not, as elsewhere, have place in the areolar tissue also, or alone. To be sure, some now deny that there is much or any areolar tissue in the liver (except round the chief vessels), and also allege that the capsule of Glisson, a prolongation of that tissue, does not, as formerly supposed, divide the lobules, but stops short with the larger vessels.

As regards all chemical investigations of animal, and recently, but no longer, vital fluids, there are various sources of uncertainty, perhaps I might say fallacy. First, the inspected fluid *is no longer vital*. I admit we cannot tell whether any particular fluid (as the bile) or part of the body possesses an intrinsic vitality, even while in, or connected with, the body; or whether the vitality of such a fluid is merely an influence exercised on it by the ducts or vessels which contains, or the nerves which surround it. I admit we do not know, absolutely, in what vitality consists, or if there is vitality at all; and therefore (as always) where nothing can be either affirmed or denied, reasonings and speculation, so far at least as practical results may be concerned,

are useless. My own persuasion, however, founded on some grounds which I could assign, and others which (as happens to us all in regard to some of the most important metaphysical and religious and even certain scientific questions) I rather *feel* than can describe, is, that even as regards animal life*, and there is an unknown somewhat, which is not chemical or electrical, or ought else of that nature. In this view, I am supported (and that support, even were there no other, would content me) by the opinions of Müller and Prout: the former of whom alleges that "in the facts of natural science there is nothing which implies the impossibility of the existence of an immaterial principle independent of matter;" the latter of whom pronounces the contrary doctrine, as "not only untenable but positively absurd. (See p. 446 of the last edition of the treatise on Stomach and Renal Diseases.)

Since, however, we cannot *demonstrate* vitality, let us waive the supposed fact of its absence from bile submitted to chemical analysis, as a ground for suspecting possible inaccuracy in the result of that analysis,—or rather let us overlook the fact, that if the bile owes any of its peculiar properties while in the body to vitality, it is, of course, when out of the body, and dis severed from that principle, a materially altered substance. There is, however, another source of much more unquestionable uncertainty in chemical analysis, and this is, the possible or probable changes which the very analytic process itself causes in the substances which undergo it. It is but reasonable to suspect that even the most delicate chemistry is clumsy, rude, and destructive in its dealing with animalized substances, more especially with those so complicated as the bile is. I am led to these remarks by the discrepant results arrived at by several physiologists and chemists, in regard to the constitution of the biliary secretion.

The following is a concise statement of various analyses of the bile.

In 1806 Thenard discovered in the bile of the ox picromel and resin: he moreover recognised the colouring

matter. Chevrueil repeated and confirmed the analysis of Thenard.

The succeeding year, Berzelius announced biliary fatty matter as constituting the ingredient of the hepatic secretion, and of this biliary fat, he regarded Thenard's resin, picromel, and colouring matter, as mere modifications. Dr. Prout repeated and in general confirmed this analysis of Berzelius, who, however, subsequently undertook another, presently to be noticed.

Gmelin's analysis comes next. He added to the matters already recognised, taurine, choleic acid, fats, extractive, albuminuria, and salts. He found also colouring matter: but in regard to Thenard's biliary resin and picromel, he alleged that the one contained the other. Frommherz and Gugert repeated and confirmed the analysis of Gmelin.

Demarcay, whose analysis has been repeated and confirmed by Dumas, revived the former doctrine of the soapy character of bile. He held it to be a choleate of soda, convertible or decomposable into resin, taurine, and cholein.

Berzelius, as has been stated, repeated his examination, and with somewhat different results from the former, or rather with additional ones. His own biliary matter of the first analysis, and Demarcay's choleic acid, he now regards as a mixture of bilin, felleic acid, and cholinic acid.

Bilin, which is electrically negative, he found to be decomposed by acids into fellinic and cholinic acids, taurine, dyslisin, and ammonia; he also found that two other acids, the cholic and fellic, are generated in bile which is kept for some time.

Bile in colour varies. It is sometimes light, sometimes deep yellow; sometimes darkish green; sometimes black. It has a bitter taste, and by brisk agitation may be made to foam like soap-suds. The specific gravity of ox bile seems to be about 1028. It was formerly supposed to be alkaline in its reaction, but, as noticed in my last paper, recent investigations would lead us to believe neutral, when healthy. Microscopically examined, it presents, when not inspissated, scarcely any objects: but when thick and dark in colour, small greenish particles and epithelium, with oblong triangular cells, are discernible in it. In cystic bile, more especially in morbid conditions of the gall-bladder or of the

* I say "animal" in contradistinction to principles constituting or supposed to constitute (and as I believe actually doing so) the mind and soul—the intelligence and moral powers or faculties or parts of man.

liver, plates of cholesterine are occasionally perceptible. From 92 to 96 parts of bile consist of water, the rest of biliary matter (8 parts), mucus, osmazome, chloride of iodine, lactate of soda, soda, phosphate of soda and of lime, and traces of an unnamed substance. I may finally observe that Liebig and Prout seem to lean to Demareay's opinion that bile is, to a great extent, constituted of a compound of choleic acid and soda. To quote the words of the latter chemist, "The general result of all the analyses of the bile, then, as already stated, are, that the chief organic ingredients, in their properties and composition, partake of the oily character: and that the saline contents of the bile consist principally of soda, which exists in some unknown state of combination with the biliary ingredients. The other saline ingredients are those found in all organic compounds."

Physiological uses of the bile.—On this subject, there is considerable doubt and considerable variety of opinion. Dr. Prout's opinion seems to be that a secondary object of the bile is to neutralize the acid matters of digestion, but that it performs other functions in a great measure unknown. One of these he conceives to be that of eliminating or assisting to eliminate albumen from food containing saccharine matters; he also believes that it aids in giving its peculiar colour to the blood, and that the soda of the bile, reabsorbed into the circulation, assists in giving to the blood the slight alkaline reaction which it possesses, and in maintaining the fluidity of that liquid. Part, too, of the soda eliminated from the liver, unites, he supposes, with the chlorine which is being constantly separated in the stomach by secretion from the chloride of soda in the blood. According to Liebig, the object of food is twofold, to supply the waste of tissues and to furnish elements for combustion, whereby the temperature of the body is maintained. The carbon expired quits the system in the form of carbonic acid, but that eliminated by the liver being still ununited with oxygen, and capable, consequently, of still serving for maintaining the temperature of the body, is, in part, reabsorbed, to unite in the capillaries with the oxygen of the blood globules.

I would conclude this notice of bile

by remarking how extraordinary it is, that so few of the analyses made have been of human bile. Surely, many opportunities present themselves of obtaining specimens of fresh and healthy bile. There is considerable reason to suspect that, in a pathological, but more particularly in a therapeutical, point of view, those laborious analyses of a graminivorous animal like the ox are much less useful than if they had been employed on human bile.

To complete the view of the secretions playing a part in digestion, we may here again briefly notice the pancreatic, the mucous, and the salivary secretions.

Pancreatic secretion.—This is limpid, ropy, resembling white of egg, feebly alkaline; in its reaction, acid, unless when the animal is exhausted, when it is found to be alkaline. In consequence of its containing much albumen, it is coagulable by heat. It is said, as I formerly remarked, to contain no mucus; yet there seems great reason to suspect error here, since the secretion, taking place as it does on the mucous membrane, can scarcely fail to include some of the natural fluid of that membrane. It contains no sulphocyanogen; but its other constituents are identical with those of the saliva.

Mucus is a liquid which, in acts of mastication and deglutition, and also from its copious presence in the stomach, must be supposed to permeate thoroughly alimentary ingesta. Acids, we are told, even at the boiling temperature, do not dissolve it, neither does water. If, therefore, the chloric acid is to be included among those which fail to dissolve mucus, which besides is insoluble in water, it would seem rather to operate against digestion than to aid it. On the other hand, there appears to be a physiologic propriety in the circumstance that the mucous surfaces are covered by this soft but not easily-soluble layer, and thus guaranteed (in some degree) against the action of acids. Mucus contains 93 per cent. of water. It exhibits traces of albumen and nitrogen, and the usual salts of the animal secretions. Little besides is known of it.

Saliva, as usually obtained, generally includes some mucus which may easily be got rid of to a great extent. It is then found to separate, after some time, into two strata, the upper of which is limpid; the lower, along with a portion

of the upper, includes an opaque but white matter. Difference of opinion exists as to its chemical reaction. Schultz affirms saliva to be usually alkaline, one dram requiring one drop of acetic acid to neutralise it. Gmelin found it generally feebly alkaline, but occasionally acid; neutral on no occasion. Mitscherlich observed it to be alkaline during mastication of food; at other times acid; and denied the presence of ammonia in it, which Schultz had affirmed. He also stated its specific gravity at 1006 to 1008. It contains transparent globules, the diameter of which is larger than that of the red globules of the blood. Saliva holds in solution or suspension, among many other matters, a peculiar salivary substance as well as mazaome, sulphocyanogen, fat and phosphorus, and various salts; but as, according to Berzelius, the solid matters of saliva amount to only 1 per cent., the matters referred to must be present, both absolutely and relatively, in rather minute quantity.

12, Bentinck Street, Manchester Square.

[To be continued.]

ON THE EFFECTS OF FOOD ON THE BLOOD.*

[From an interesting series of experiments, lately communicated to the Glasgow Philosophical Society]

DR. BUCHANAN has drawn the following conclusions on the state of the blood after taking food:—

1. The serum of the blood of a healthy man fasting, is perfectly transparent, and of a yellowish or slightly greenish tint.

2. A heterogeneous meal, such as that usually set on the tables of the rich, renders the serum white.

3. The whiteness may commence as early as half-an-hour after eating, and may continue ten or twelve, and sometimes as long as eighteen hours, according to the kind and quality of the food, and the state of the functions of primary and secondary digestion.

4. *Starch*, and *Sugar*, probably all vegetable substances destitute of oil, give no whiteness to the serum of the blood.

5. *Fibrin*, *Albumen*, and *Casein*, and probably *Protein-compounds* in all their

forms, if destitute of oil, give no whiteness.

6. Oils combined, whether naturally or artificially, with protein-compounds or with starch, render the serum of the blood white; probably, therefore, oils produce that effect in whatever way taken.

7. Gelatin seems to render the serum of the blood white; this, however, cannot be considered as certainly established, as there may have been some fat in the beef-tea which was taken along with the calf-foot jelly in both experiments on which the above conclusion rests.

8. The coagulum of the blood very frequently exhibits, after taking food, a crust of pellucid fibrin, or of pellucid fibrin dotted with more opaque particles, and with little of the contraction technically named "cupping."

9. The appearances of the coagulum just mentioned are much more common after azotized than after non-azotized food.

These conclusions relating to the visible characters of the blood may be considered, with the single exception above mentioned, as well established. The conclusions which follow relate chiefly to the chemical properties of the blood, and are not worthy of the same reliance; but the evidence on which they rest has been laid before the reader, and he must judge of them for himself.

1. The substance defined above under the name of Pabulin,* is most abundant in the blood a few hours after taking food, sooner or later according to the rapidity of digestion.

2. It is less abundant as the time when the food has been taken is more remote, and is small in quantity after a fast of twenty-four hours.

3. It is much more abundant after azotized, than after non-azotized food.

4. It varies in quality, floating or subsiding, according to the kind of food taken.

5. It is probably analogous in nature to the white substance which gives colour to the serum of the blood.

6. The difference between these two forms of this substance probably is, that it is sometimes combined with an alkaline, or earthy salt (chloride of

* A white substance obtained by precipitation either from limpid or opaque serum, or dissolving in it common salt to saturation. Neither phosphate of soda nor bicarbonate of soda threw down this body from serum.

sodium, sulphate of soda, &c.), and sometimes with an oily body (stearate of glycerine, &c.). In the former case it seems to dissolve completely in the blood, while in the latter it is only partially dissolved, and renders the serum opaque.

7. The azotized principles of the food are probably made to combine, in the digestive tube, with the alkaline, earthy, and oily salts mentioned above; and thus become capable of being absorbed into the blood.

8. The alkaline and earthy compounds are probably absorbed directly by the blood-vessels, while it seems to be well ascertained that the oily compounds are absorbed through the lacteals.

DEFECTIVE DRAINAGE.

In a memoir annexed by Mr. Chadwick in the Appendix to the Supplementary Report

Ages.	Well Cleansed.	Moderately Cleansed.	Badly Cleansed.	Worst Streets.	
Under 1 year . . .	15.5	20.8	38.3	44.4	} Per Cent.
„ 5 years . . .	19.3	31.8	32.2	29.4	
Above 5 years . . .	65.2	47.9	29.5	26.2	

In the same volume, Mr. H. P. Holland, in his Report on the Sanitary Condition of the Town of Chorlton-upon-Medlock, in Lancashire, gives the following return:—

Streets of 1st Class . . .	1 in 46	} Rate of Mortality.
„ 2d Class . . .	1 „ 39	
„ 3d Class . . .	1 „ 27	

That a more effective system of drainage will be attended with a diminution of mortality can hardly be doubted after the comparative returns from drained and undrained districts. I subjoin two instances, taken at hazard from the General Sanitary Report, 1842. Mr. Crowfoot, an eminent medical practitioner at Beccles, in Suffolk, reported (p. 29) to Mr. Twistleton, the Assistant Poor-Law Commissioner, that the two towns of Beccles and Bungay, of nearly equal population, and of nearly the same advantages of situation, &c., excepting that the inhabitants of Bungay were less closely confined, presented very different results in regard to the mortality of the inhabitants. At Beccles, a system of drainage had been adopted about thirty years ago, and no open drain now exists in the place. At Bungay, on the contrary, though the opportunities for drainage are equally favourable, two or three large reservoirs for refuse filth existed in the town itself, and some of its principal drains are open. The result, as gathered from a careful examination of the registers of burials, has been in accordance with theoretical calculation. Whilst Beccles has improved

of the Sanitary Condition of the Labouring Population of Great Britain, p. 241, it is stated “that in the parish of St. Margaret’s, Leicester, during the year 1840, the average age at death in the streets that were drained (and that by no means perfectly), was 23½ years; in the streets that were partially drained, 17½ years; in the streets that were entirely undrained, 13½ years. Though the defective drainage and cleansing was the main cause, it was doubtless not the only cause of this variation. That, however, was a year of heavy mortality, and the average age at death in that and another district during the years 1840, 1841, and 1842, was, in the streets drained, 25½ years; in those partly drained, 21; in those not drained, 17 years.

In the First Report of the Health of Towns Commission, the Rev. J. Gray has furnished an estimate of the rate of mortality in the Town of Preston, from which it appears that the rate of mortality varies very greatly, according to the cleansing and drainage of the several districts.

considerably in salubrity, Bungay has retrograded as its population has increased in number.

Years.	Beccles.	Bungay.	
1811-21	1 in 67	1 in 69	} Rate of Mortality.
1821-31	1 „ 72	1 „ 67	
1831-41	1 „ 71	1 „ 58	

It may be as well to guard against the conclusion that neglect of house-drainage is only to be dreaded in towns. Single houses and small groups of cottages in the country present, not unfrequently, instances of as perilous and disgusting a character.—*Tests of a Thriving Population, by Dr. Twiss.*

POISONING BY MUSHROOMS.

A YOUNG lady who enjoyed good health had more than once suffered from attacks of the following nature. Occasionally after dinner she experienced faintness with severe pain in the abdomen and coldness of the extremities. After the lapse of about twelve hours the attack wore itself out, leaving a feeling of lassitude. A repetition of these attacks induced the patient to consider whether there was any particular article of food which she was in the habit of taking at the meals preceding the attacks. She could only attribute it to *catsup*, a liquid prepared from mushrooms, and she then remembered that on one occasion she had suffered severely from eating these vegetables: she abstained from all condiments containing this liquid, and no longer suffered from the attacks.—*Dublin Med. Press, Sept. 1845.*

MEDICAL GAZETTE.

FRIDAY, OCTOBER 10, 1845.

IN our last number we referred to the arrival of a vessel from the coast of Africa, having on board a disease represented to be the African fever, which had caused great mortality among the crew. No less than fifty-six persons had died, including the two medical officers*. We expressed no doubt that immediate relief would be afforded by Government to the survivors, who were thus left in a most helpless condition; but it appears that the excessive fear of contagion, caused the strictest quarantine to be observed, and in the first instance the plan adopted by the Lord Mayor and Aldermen in the great plague of London in 1665, was enforced, *i. e.* the healthy were compelled to remain shut up with the diseased. We confess we were hardly prepared for this mode of dealing with a fever-stricken ship in the nineteenth century; for even admitting the contagious nature of the malady, methods would have easily suggested themselves for immediately separating the diseased from the healthy, and removing the whole of the survivors from the pestilential atmosphere in which they were confined†.

We have probably never before had the African fever brought so near to our coasts as in this instance; and it may be worth while, therefore, to inquire into a few circumstances connected with it. The most accu-

rate observations which have been made on this formidable malady, are those of Dr. M'William and Dr. Pritchett, who accompanied the late Niger expedition. From the account given by Dr. M'William, we learn that all who composed the expedition, were exposed to the same influences, and nearly all were attacked with the fever. Two only of the four medical officers who died, had been in attendance on fever patients! Dr. Pritchett, Mr. Thomson, Mr. Stirling, and Dr. Stanger, were among the few who escaped being seized with fever, although they were in constant intercourse with the sick, and Dr. M'William himself was the last person in the *Albert* who was attacked. The nurses on board this vessel were among the latest taken ill, and one escaped altogether. In short, there was no fact which came under the observation of this experienced medical officer, which afforded the slightest evidence that the disease was communicated from one person to another.

These facts appear to show clearly that the malady must have owed its diffusion to endemic influence, and not to contagion. It is well known that in the equipment of these vessels special provisions were made not only for ensuring a free circulation of air below decks, but also as far as possible for purifying it or of depriving it of noxious matters. There is, however, good reason to believe, from the fatal progress of the disease, that these had no influence in counteracting the effects of the endemic poison. We learn from Dr. M'William's account, that some circumstances were actually favourable to the propagation of fever by contagion:—the upper deck was much lumbered, in a degree to prevent the free circulation of the air; and the same cause prevented it from being thoroughly cleaned. In the decks below,

* The total number of deaths up to the present time (Oct. 8), out of a crew of 146, is 66, including three persons who have died during the present month.—*Report.*

† The delay in adopting measures of isolation was, we understand, occasioned by the absence from town of the chief Quarantine Officer, at the time the intelligence was received. It is to be regretted that there is not a medical officer at all our great naval stations empowered to act *immediately* in such emergencies.

many men were necessarily crowded together in sleeping, under a very high temperature; for the thermometer was seldom below 84°. The steam apparatus created an unavoidable source of heat, which was constantly being diffused throughout the vessel by the active conducting powers of the metal (iron) of which she was composed. It might be supposed that this would rather lead to the cooling of the vessel by its immersion in water; but the water of the river was seldom below 83°. Under these circumstances, we think it pretty evident that had the fever been contagious, some proofs of its possessing this character would have been most probably obtained. There can, however, be no doubt that the great mortality which attended the disease was in great part to be ascribed to the vital energies of the men becoming reduced by these depressing influences.

In the absence of any medical history of the progress of the malady on board the recently arrived vessel, it is out of our power to form a conjecture, whether the deaths on the homeward voyage, and those which have taken place off Portsmouth, were due to the African fever or its sequelæ. If to the former, the disease may, like the worst form of typhus fever, have acquired a contagious character from confinement, want of ventilation, or proper medical or hygienic treatment, an evil which was only likely to be increased by the plan pursued under the quarantine laws, at the first arrival of the ship. The remedy would have been to have isolated the affected, and placed them at once under medical treatment, whereby all danger of the diffusion of the disease would have been prevented*. It does not appear probable, however, that the genuine African fever would

have lain so long latent; the facts observed in the Niger Expedition shew that the period of latency is about from 16 to 21 days; and it may turn out, therefore, that instead of fresh cases of the fever occurring on board this ill-fated ship during the latter part of the voyage, they may have been merely sequences of the malady aggravated in their effects by the unhealthy state of the vessel.

It has been long known that those who recover from this disease are liable to suffer from lesions of the mucous membranes of the bowels, which are caused by the fever. Hæmorrhage, hæmatemesis, and dysentery, have supervened long after the fever has passed away, and have destroyed life. Within a short period, all these matters will have been cleared up to the satisfaction of the public and profession; since Sir William Pym, Superintendent-General of Quarantine, and Mr. Arnott, of the Middlesex Hospital, have been appointed to investigate the matter; and their report, which we hope to present to our readers, is, we understand, more favourable than the intelligence already received would have led us to anticipate.

This does not, however, remove the objections to our quarantine regulations, which loudly call for some modification. We are not prepared to say, after the sad experience of the pestilential cholera, that fearful maladies derived from endemic causes in one quarter of the globe, may not diffuse themselves by a property strongly analogous to, if not identical with, contagion; but we believe it to be not only a selfish but a dangerous policy to shut up the diseased under such circumstances. The poison is only likely to acquire thereby a more virulent action; and, like the jail-fever at the Black Assizes, cut off all who come within its sphere. Moral causes, it is well known,

* This plan, it appears, was immediately adopted by the Portuguese governor of the island of Buena Vista.

have an important influence in bringing on an attack, so that the locking up the healthy with the affected for the period required by the quarantine laws, is virtually consigning the former to destruction.

We have made these remarks, as the subject is of present interest. The history of the African fever, as given by Dr. M'William, shows it to be a disease most insidious in its attacks, most fatal in its progress, and at present apparently beyond the reach of medical treatment*. The bare possibility of so fearful a malady becoming imported into this country, and spreading itself by contagion, is therefore a subject which deserves the close attention of the medical profession.

The above remarks were made before we had seen the Report to the Admiralty by Sir W. Pym and Mr. Arnott, which is elsewhere printed†. We are glad to find that energetic measures have been taken, and that, on the arrival of the *Eclair* at Standgate Creek, such precautions were adopted as prudence would suggest. Those who had escaped from an attack of the fever (41) were removed to a clean vessel, and the convalescents to another. At present, there are only two men confined to bed with the fever, but no fresh case has occurred since the 29th ultimo. The report, we think, leaves it clear that the fever has, in this instance certainly, spread by contagion. In the report, we have no detailed account of the symptoms; but it

is expressly stated that the disease was marked by the occurrence of "black vomit," the first fatal case being that of a man who was brought on board after having been three days on shore. Soon afterwards, eighteen persons were attacked with fever and black vomit, and thirteen died! The disease may therefore be some severe modification of the coast fever; for Dr. M'William expressly states that "in no case of the river fever was there the slightest appearance of 'black vomit.' Biliary vomiting was common in the early stage of the disease*." We shall take care to report any facts that may further transpire with respect to the disease. In the meantime, there is every reason to believe, as the report states, that its progress is arrested.

Reviews.

Fruits and Farinacea the proper Food of Man. By JOHN SMITH. London: Churchill, 1845. Svo. pp. 422.

THE author of this treatise is a well-meaning man, but we cannot help thinking he labours under an extraordinary fallacy in supposing that a fruit and farinaceous diet "is a food well adapted to all constitutions in all climates fit for the residence of man." He may be in himself a fair example of his own theory, and we admit that he has brought forward many ingenious views in support of it; but still we remain unconvinced, and are sceptical enough to hold to the doctrine, that both by instinctive propensity and anatomical structure, man is destined to live upon a mixed diet. The author not only advocates exclusively a vegetable diet, but he occupies a chapter in attempting to prove, that an animal diet produces positively injurious effects! The facts, however, which he brings forward, are to be regarded as exceptional cases, which might be very speedily balanced by some anti-farinaceous author, who chose to take up the other side of the question. Besides,

* The results of the late Niger expedition were, that out of 145 whites, 130 were attacked with fever, and 40 died: or 1 in 3·25 of the attacked. Only 15 persons escaped the fever; but some of them afterwards suffered from disorders which were probably brought on by the voyage. In a second attempt to ascend the river by one steamer,—out of 8 white persons, 7 were attacked, and 2 died. It is remarkable as an indication of an acclimatizing influence, that out of 153 blacks, only 11 were attacked with fever, and not one died. It seems also that the blacks, or Kroomen, in the case of the *Eclair*, have entirely escaped the fever.

† Page 1043.

* Medical History of the Expedition to the Niger, during the years 1841-2, p. 139.

Mr. Smith proves too much: he goes on to argue, that even the milk from animals, *labouring under disease*, may prove highly injurious! Undoubtedly, and so may decayed or diseased vegetables,—the ergot of rye, for example. We would simply ask why, if nature had not intended man to live at least in part on animal diet, she should have studiously selected one of the purest forms of animal food—milk, for the nutrition and support of the young of all the mammalia. In this liquid we have abundantly those principles which give the essential characters to animal food; and although, theoretically, “vegetables contain all the elements and qualities necessary for the complete nutrition of man,” we think it would be a hard and Malthusian experiment to do away with nature’s supply, and resort to the fruits and farinacea. If, then, as experience shows, this is the best and only proper support for the young, we must, in the absence of any good physiological reason to the contrary, presume that no harm will be done by this kind of diet being at least partially used in after life. The *argumentum ad humanitatem* we regard as entirely misplaced in a discussion of this kind. The author should show that an infant from the birth can thrive as well on fruits and farinacea as upon milk, or he must admit that there is nothing contrary to our nature in occasionally using animal food in childhood and adult age. If the habits of the graminivora appear to favour his argument in this point of view, those of the carnivora are as much against it; and we shall therefore uphold the flesh-eating habits, which we have acquired from our earliest infancy. The author has bestowed considerable pains upon the work, and has contrived to collect from various sources numerous interesting facts. There is much to fix the attention of the reader, but we doubt whether he will make any converts to his opinions among the members of the medical profession.

The Ocean Flower: a Poem. With an Historical and Descriptive Account of the Island of Madeira. By T. M. HUGHES. Small 8vo. pp. 309. London, 1845. Longmans.

It would be out of our province to offer any comments upon the poetry of this little volume, which is evidently the production of a clever man. We can, however,

recommend it as both a useful and interesting guide to those individuals who are compelled to seek a Madeira climate. The first seventy-four pages give a compendious account of the island, including its natural history, climate, &c. On the latter subject the author furnishes a few additional observations, which shew that the most remarkable circumstance about the island, is its equability of temperature. It is undoubtedly this which gives to it an advantage over every other locality, and renders it so beneficial in all cases of pulmonary disease. The winter of 1844 was of unusual severity throughout Europe; and during the months of November and December, and the first four months of 1845, Dr. Ross, a friend of the author’s, kept a daily register of the thermometer from observations made at 1 and 2 p.m. The mean height during this period was 65°; *i. e.* 2° 4’ higher than the mean *summer* temperature of England. The mean annual temperature of Madeira the author gives at 64° 56, *i. e.* more than 14° above the mean annual temperature of England. The mean annual range of the thermometer in the island is not more than 14°. Notwithstanding this equability of temperature, it is considered advisable that invalids should leave Madeira for the north of Europe during the summer months, or at least remove their residence to some distance in the Serra above the sea level*. Here, however, they are exposed, on what are called Leste days, to the hot winds of Africa, during the prevalence of which, according to Gourlay, Fahrenheit’s thermometer has been known to rise as high as 130°! It is a curious ornithological test of the mildness of the climate, that swallows do not migrate from the island.

Although we do not profess to pass any opinion on the author’s merits as a poet, we cannot avoid quoting the following epigram (as it has a professional interest) which he has translated from the Portuguese writer Bocage:—

A land there is where doctors die
Of hunger, they’re so poor;
The reason is, none pay them there
But those they truly cure.†

* The highest level ground in Madeira is the tract of the Paúl, which is 4000 feet above the level of the sea.

† *Humana terra dizem que ha,
Onde a fome acerba e dura
Cabo dos medicos da:
Porque he isto? He porque lá
Pagao somente a quem cura.*

From a passage in the introductory remarks, we regret to find that the author is himself suffering from that hopeless disease which has led so many to visit this island. "The hand which writes this is guided by a firm conviction that a brief period must put an end to its vitality." p. 64. We shall conclude by recommending this little volume as containing, in its introductory remarks, much useful information for invalids.

Cours de Microscopie, complémentaire des Etudes Médicales Anatomie Microscopique et Physiologie des Fluides de l'Economie. Par Albert Donné, M.D. &c. 8vo. p. 550. Paris, 1844.

A Course of Microscopical Investigation in relation to Medicine and the Microscopical and Physiological Anatomy of the Animal Fluids. With Plates. By A. Donné, &c.

THE author of the above work has for several years been engaged in giving public instruction in the use of the microscope chiefly in its applications to medical science; and the volume now before us comprises the substance of these lectures arranged in a systematic form. Many of his views having already appeared from time to time in the form of memoirs read before the Academy of Sciences, we do not meet with much that can be regarded as strikingly new, or with which we have not been long familiar either as well-established facts or disputed theories; yet there is an originality in the arrangement of the subjects, and a dealing with general and comprehensive questions rather than with mere details, which renders the perusal of it peculiarly interesting. The work is divided into sixteen chapters or lectures, the first four of which are devoted to the consideration of the blood, and contain some interesting observations on the principal attributes of this fluid, which we propose to notice rather in detail.

On the subject of *coagulation* our author suggests the application of the fact of the blood coagulating in the body after death, to aid in solving the question respecting the reality of death before the access of putrefaction. Assuming what appears certain, that the exercise of the vital functions requires a fluid condition of the blood,

and that the discharge of these functions after coagulation has taken place is impossible:—that blood once coagulated cannot resume its fluidity; and that to a certain extent the condition of even a small portion of blood is an index of the state of the whole, he infers, that to obtain a certain sign of death, or the "impossibility of a return to life," in a doubtful case, nothing more is requisite than to prove that coagulation has taken place, by opening an artery or vein, and observing the condition of the blood. If, instead of a red homogeneous *coagulable* liquid, we only obtain a reddish-coloured *uncoagulable* serum, from which on rest the red corpuscles speedily subside in the form of a red sediment, we are, in his opinion, justified in inferring that life has ceased,—a conclusion to which we could not safely arrive, if even the smallest coagulum should form in the withdrawn fluid. This ingenious, and, we believe, original application of this coagulating property of the blood, though probably correct, requires some limitation; for it is certain that in some instances of sudden death, as from lightning, blows on the stomach, strong mental impressions, &c., the blood loses its property of coagulating, and remains fluid. Exact data are also wanting to show the earliest and average periods after death at which coagulation takes place in the vessels of the body; a knowledge of which is necessary to render the above test certain in its application.

Our author details the results of some interesting experiments on the action of milk when injected into the veins of reptiles, birds, and mammalia. In all cases the operation was borne without any inconvenience, with the single exception of the horse, in which animal the injection of the smallest possible quantity of this fluid proved rapidly fatal: some of the animals fell down at once as if struck by lightning, although every possible precaution was taken to preclude the introduction of air into the veins. Whilst on this subject, our author is led to an exposition of one of the main theories of his work, namely, that the red particles of blood derive their origin from the minute globules ("*globulins*") of chyle which are being constantly poured into the circulation; that in the process of transformation these minute globules

unite in threes and fours, become enveloped by an albuminous layer or membrane, and in this form constitute the "white corpuscles" of the blood, which by a further process of transformation are converted into true red corpuscles; and that milk globules, when injected into the veins, or received into the circulation as aliment by the ordinary channels, act the same part in the formation of the red corpuscles as do the globules of chyle. He positively affirms that after the injection of milk into the veins, he has repeatedly and minutely observed with the microscope the various stages of this metamorphosis in the blood circulating through the tongue of a frog. He does not, however, regard the change as taking place in the course of the general circulation, but he extends his theory still further, and fixes upon the spleen as the grand laboratory wherein the several steps of this important transformation are effected. It would draw us beyond our limits to comment on the above theory: for a more detailed account we must refer our readers to the original work (page 96 et seq.)

We next have an interesting lecture on the circulation: it comprises chiefly the results of the author's microscopical observations on the tongues of frogs and the embryo of the chick, for the preparation of both of which as microscopical objects he gives clear and ample directions. The amount of our knowledge in regard to the microscopical appearances of the blood and blood-corpuscles in a state of disease is sufficiently meagre, and has received but little addition from the researches of M. Donné, and that little is chiefly of a negative kind: thus we glean that after careful microscopic examination in numerous cases of typhus he has never been enabled to detect in the blood anything abnormal,—not the least alteration in the form or other peculiarities of either the red or white corpuscles. He has been equally unsuccessful in discovering the smallest trace of the existence of pus in the blood even in cases in which its presence therein has been most strongly suspected: he attributes the failure mainly to the great similarity in appearance between the white corpuscles of blood and the corpuscles of pus. In undertaking the microscopic examination of the blood he very justly directs

attention to the necessity of examining this fluid as speedily as possible after withdrawal; for otherwise a very trifling delay is apt to destroy appearances which previously existed, or to give to the corpuscles certain unusual characters which they did not really possess when first removed from the body.

The two succeeding chapters contain a fair general account of the physiology and pathology of the various kinds of mucus and pus; and then follows a brief outline of the microscopic characters of saliva, bile, healthy urine, and the fluid of perspiration. We may observe, on the subject of pus, that so far as our present knowledge extends, there are no distinctive characters, microscopic or otherwise, between the corpuscles of liquid and those of mucus; in fact, they may be regarded as identical; and the view which Donné seems inclined to adopt is the one advocated by Lebert—and in all probability a correct one—that true healthy mucus does not contain any globules, and that when present they denote more or less irritation of the secreting mucous surface, which when it exists in the slightest possible degree is sufficient to produce these corpuscles in abundance. Our author mentions a caution in testing the reaction of saliva—to the non-observance of which many of the discrepancies regarding this reaction may be ascribed—namely, that the analyst should be careful to remove the acid mucus before applying the test paper: it need hardly be observed that saliva in health is most commonly, if not always, distinctly alkaline.

The urine and seminal fluid are dwelt upon at greater length, but with the exception of a few useful hints in the chemical and microscopical examinations of the various urinary deposits, there is nothing strikingly new or deserving of particular notice on either subject. He adopts L'Heritier's method (although without acknowledging it) in classifying the various urinary sediments, according as they take place in an acid or alkaline condition of this fluid.

With the exception of a few unimportant remarks on the chyle, lymph, synovial and some other fluids, the remaining five chapters are devoted to the consideration of milk, into which the author enters very elaborately: it

is the best and most comprehensive article on the subject with which we have met; but as the subject is not strictly treated in its relations to medicine we do not consider it necessary to quote any of his remarks.

In concluding this notice of M. Donn  s labours we cannot honestly say that our knowledge, practical or scientific, has been much advanced by the perusal of this good-ly sized volume, comprising between five and six hundred pages of matter, yet on the whole we have been gratified with its contents, partly from the interest attached to the subject, and partly from the pleasing style in which the author has communicated his views. Accompanying the volume are numerous illustrations in folio, which are said to have been taken by the Daguerreotype microscope. This work will doubtless find readers among those who take an interest in the progress of microscopical anatomy and pathology.

Hospital and Infirmary Reports.

LONDON HOSPITAL.

Case of Partial Aneurism of the left Ventricle of the Heart. By JONATHAN PEREIRA, M.D. F.R.S. Fellow of the Royal College of Physicians, Assistant Physician to the Hospital.

THE following is an interesting and, in some respects, perhaps unique case of aneurism of the left ventricle, which burst into the right side of the heart. I am indebted to my friend and colleague, Mr Luke, under whose care it was, for permission to publish it.

Harriet Coventry, aged 15, a servant of all work, was admitted into the London Hospital, under the care of Mr. Luke, on the evening of Saturday, February 15th, 1845, with a wound in the lower part of the neck.

It appeared that on Friday, February 7th, she had been sent by her mistress for some beer, and that in walking, with the jug in her hand, she stumbled, and in her fall broke the jug, a fragment of which cut her neck. Some dark-coloured blood escaped, and she became faint. She was taken home and kept quiet, and the wound was supposed to be going on favourably till Thursday, April 13th, when, after some exertion, hæmorrhage recurred during the night.

Feb. 15th.—On her admission into the hospital a wound about an inch in length

was discovered in the neck, a little above the sternum, and from which venous blood was oozing. No attempt at reparation had apparently been made, as there was neither adhesion of the edges of the wound, nor purulent secretion. The wound was dressed, and the patient put to bed.

Feb. 16th.—On dressing the wound this morning, a small quantity of venous blood escaped. The attention of the dresser being accidentally directed to the condition of the heart and great vessels, a loud anomalous murmur under the sternum was discovered; and in consequence, Mr. Luke's attention was drawn to the case.

Feb. 17th.—To-day I saw the patient for the first time; and gathered from her the following history of her case. About three years ago, she had suffered a severe attack of rheumatism with fever, which confined her for several weeks to the bed. Up to that time she had always enjoyed good health; but subsequently had not been able to run up stairs or walk quickly without suffering unpleasant sensations, which induced her to stop. On questioning her whether she had ever experienced palpitation and shortness of breath, she replied yes. She had neither fainted, nor suffered with swollen feet; and altogether her symptoms had not been sufficiently severe to induce her to seek medical advice.*

At this time (Feb. 17th), she appeared in excellent health and spirits. She was plump and had florid cheeks; her body was well nourished, and properly supplied with arterial blood. She laughed and seemed much amused at the interest manifested by her medical attendants in the condition of

* After the death of the patient, I obtained from her mother some particulars respecting the previous history of the daughter, which agree in the main with those furnished me by the patient herself. The mother tells me that so good had been her daughter's health, previous to the rheumatic attack, that, to use her own language, a single sixpence had never been expended on the girl for medical advice. During the rheumatism the girl's chest became so much affected, that her mother judged it expedient to call in a medical man (whose name she had forgotten), who listened to her chest and ordered a mustard poultice to be applied to it. The breathing at this time was, to use the mother's language, "very heavy." The girl suffered for a considerable period from the effects of this attack; she was reduced almost to a skeleton, and experienced great pain when she attempted to walk. Gradually, however, she recovered, though she never quite regained her former healthy state. From time to time she complained of pain at her chest, and occasionally suffered with shortness of breathing. Running up stairs greatly fatigued her. At times her legs swelled very much. This latter statement was in opposition to the information furnished me by the girl herself; but the mother persists in its accuracy. No blueness of the lips had been observed. Both father and mother were subject to rheumatism. The mother had been laid up with it for ten weeks, just before the daughter's attack.

her chest. She told me that her mother said there had always been a remarkable noise at her chest; but though I took some pains on this point, I could not elicit any satisfactory explanation of the noise referred to*. The catamenia had not appeared. The resonance of the chest from percussion was normal. The dulness of the præcordial region was not greater than natural, whether considered in reference to its extent or intensity.

The impulse of the heart was perhaps rather above that of health; but not remarkably so.

But the most remarkable sign was, a very loud systolic, apparently superficial murmur, under the sternum, and on both sides of it. In character it was between the bellows and saw sounds. The extent of space over which it was audible was considerable; and it was not very easy to determine the locality of its maximum intensity. Indeed, at two spots, about one inch and a half asunder, the sound appeared of nearly equal intensity; and I, therefore, inferred that it consisted of at least two simultaneous murmurs. It was very loud under the sternum towards the left side, and opposite to the space between the cartilages of the third and fourth ribs;† or, as was presumed, over the semilunar valves. It was also very loud under the sternum, rather to its right edge and opposite to the cartilage of the fifth rib. Moreover, between these spots the sound was also strong; but scarcely so intense as at the points just mentioned.

After listening very attentively for some time, I concluded that the maximum intensity was at the first spot named, that is, over the semilunar valves. Mr. Luke, who was with me when I made the examination, was at first doubtful as to the locality of the greatest intensity of the sound; but on re-examination he coincided in opinion with me.‡

* When I subsequently questioned the mother respecting this noise, she replied, that her daughter had experienced a kind of rattling noise at her chest, when she had a cold, especially when she was sleeping!

† The above statements as to the seat of the sounds have reference to the horizontal position of the patient, who was examined as she lay on her back in bed.

‡ Subsequently to the death of the patient, I have been favoured with notes of the case taken by Mr. Cumming, one of the house-surgeons, as well those taken by Mr. Tripe, a former pupil of the hospital, now in practice in the Commercial Road. Their notes of the seat of the greatest intensity of sound neither agree with each other nor with mine. Mr. Cumming states that he thought that the murmur was loudest "just at the right border of the sternum, at its centre;" while Mr. Tripe considered the murmur to be loudest under the sternum, "opposite the junction of the fifth rib, and to the right side." It is but proper, however, to observe that our notes of the case were not made on the same day. Mine were made on the 17th, when the girl was in

The murmur was very loud over the whole of the right side of the heart. On the right side of the chest, between the cartilages of the third and fourth ribs, near to the sternum, or, as was presumed, over the right auricle, it was very audible. Higher up the chest it was less loud. It was very distinct over the *arteria innominata*, and was perceptible in the carotid arteries. On the left side of the chest there was not any distinct murmur above the second rib. Posteriorly, the murmur was heard, though feebly, on the third dorsal vertebra, and also somewhat below this.

Another very marked symptom was a strong purring tremor, most perceptible on the right side, in the space between the cartilages of the third and fourth ribs near to the sternum, or, as was presumed, over the right auricle.

Especial attention was paid to the condition of the venous system. But no evidence of venous congestion was observed. There was neither a purple or livid tint of countenance, nor fullness or pulsation of the jugular veins: on the contrary, the patient's colour was florid, and that of a person well supplied with properly arterialized blood.

The pulse was slightly quickened, regular, soft, and rather full, and not jerking. No difference could be detected between the pulse of the two wrists. The tongue was moist and clean.

Feb. 19th.—Since my last visit hæmorrhage from the wound had occurred twice; once to the extent of a few drops only, but this morning to the amount of several ounces. The girl is suffering with a slight attack of fever; her pulse is somewhat quickened, her tongue furred; and she appears weaker than when I saw her last. The murmur remains the same; but the purring tremor is scarcely so strong.

Feb. 20th.—Febrile symptoms augmented; face flushed, but of a bright vermilion hue; tongue coated; skin hot; pulse 98, soft, rather full. She had vomited repeatedly, was very thirsty, and had lost her appetite. Effervescent salines and a purgative were administered, but without much relief. In the evening a slight attack of shivering occurred.

Feb. 21st to the 28th.—The symptoms continued much of the same kind for several days, but the girl was obviously getting weaker. On the 21th the vomiting ceased. On the 26th, she complained of pain in the epigastrium. On the 27th, she lay in a half-sleepy or soporose condition, moaning continually. On the 28th respiration was hurried; pulse 130. She lay with her eyes closed, without taking the least notice of

apparent health; while Mr. Tripe's were made on the 20th, that is, after symptoms of fever had come on. Those of Mr. Cumming are not dated.

surrounding objects. A slight purulent discharge was observed coming from the right eye, and the cornea was somewhat opalescent.

March 1st. — Complete insensibility ; pulse 145.

She died on March 2d.

The treatment consisted in the use of mild purgatives, effervescing salines, hydrocyanic acid to check the sickness, calomel given so as to affect the mouth slightly ; leeches to the epigastrium, and afterwards to the eyelids.

Post-mortem appearances.—I was unable to be present at the examination of the body, and, therefore, with the exception of the description of the heart, which I subsequently drew up, the following notes of the appearances were made by others, principally by Mr. Cumming.

The wound in the neck was about half an inch above the sternum ; its length was one inch, its breadth about three quarters of an inch. It extended through the anterior layer of the deep cervical fascia, to a sinus communicating between the anterior jugular and thyroid veins. From this sinus (into which the wound had penetrated), a large vein passed directly into the left vena innominata. Two or three drachms of pus were observed in the wound.

The brain was somewhat congested, and presented a large number of bleeding points. The lungs were healthy. Nothing remarkable was observed in the liver. The spleen was much congested and very soft. Several purulent deposits were observed in it ; the tissue around being much congested. In both kidneys, numerous abscesses varying in size from a pin's head to a pea, were discovered. Within the sac of the peritoneum there were about two ounces of a turbid fluid, containing a small quantity of pus. The cornea of the right eye was opalescent ; and small portions of pus were observed floating in the aqueous humour of the anterior and posterior chambers.

The venæ cavæ, innominatæ, and iliacæ, did not present any marks of inflammation.

Heart.—The pericardium presented evidences of having formerly suffered from inflammation ; patches of firm adherent lymph being observed in various places. That portion of the pericardium which invested the right auricle was studded over with numerous small granular deposits.

The muscular tissue of the heart was quite healthy. Especial attention was paid to it with reference to the existence of fatty degeneration ; but I was unable to detect the least traces of this change.

The right ventricle and auricle were of the natural size and thickness : neither dilatation nor hypertrophy having taken place. The pulmonary artery and its semilunar valves were healthy : perhaps the corpora Arantii

were somewhat smaller than natural. The foramen ovale was patescent ; but the aperture was oblique and valvular, and probably did not give any inconvenience.

The left ventricle and auricle appeared to be of the natural size and thickness ; though by some persons the walls of the ventricle were thought to be slightly thicker than natural.

An aneurismal communication existed between the left and right sides of the heart. The mouth of the aneurism was situated immediately beneath the right aortic valve and the angle between this and the posterior one. It was bounded above by the right aortic valve and by the junction of this and the posterior valve ; and below by the wall of the left ventricle. It was large enough to admit the tip of the little finger. It was crescent-shaped ; the convexity of the crescent being downwards and towards the posterior valve, the concavity upwards and away from this valve. The aperture was bounded at its lower part by the muscular structure of the septum, covered by a firm membrane, on which were some old deposits of lymph which rendered it rough. The sac or cavity of the aneurism was about the size of a small hazel-nut ; it was lined by a thin smooth membrane continuous with the internal membrane of the ventricle. At the bottom of it were four pouches (one of which had burst) protruding into the right cavities of the heart. One of these pouches projected into that portion of the right ventricle from which the pulmonary artery springs, and to which some anatomists apply the name of infundibulum or infundibuliform cavity. The pouch was connected with the anterior or larger fold of the tricuspid valve ; being adherent to the surface of the fold which faces the pulmonary artery. A second pouch formed a very slight bulging into the right auriculo-ventricular opening at the tendinous margin or ring. The third pouch was situated a little below the second one, and involved the base of the anterior or larger fold of the tricuspid valve. The fourth pouch, that which had burst, had made its way through this fold, and will be described presently.

Of the three divisions or folds of the tricuspid valve, two (viz. the right or posterior fold or "curtain" and the left or internal fold or "fixed curtain") were quite healthy. The anterior and larger fold or "curtain," that which prevents the escape of blood into the pulmonary artery during the diastole of the ventricle, was, however, in a morbid state. Nearly the whole of its auricular surface was covered with firm lymph, and a portion of the fold, about the size of a sixpence, was pouched or dilated, and protruded like a truncated cone. In the centre of the pouch or truncated portion was the aneurismal aperture, the diameter of which

was about equal to that of a large quill. Part of the fold (*viz.* the portion immediately around the pouch, as well as a portion of the free or floating margin) was adherent to the wall of the ventricle; so that a part only of the fold could act as a valve during the systole of the ventricle.

If I have rendered intelligible the position of the terminal aperture of the aneurism, it will be obvious that, during the diastole of the ventricles, when, be it remembered, no blood would be passing through the aneurismal sac from the left ventricle to the right side of the heart, the aperture would be in the right ventricle; and, it is also clear that, had the valve contracted no adhesion to the wall of the right ventricle, the aperture of the aneurism would, during the systole of the heart (at which period blood would be passing through the aneurismal sac from the left to the right side of the heart) have been in the floor of the right auricle,—that is, in the auricular surface of the valve, which, at that period of the heart's action, would constitute a portion of the floor of the auricle. But, owing to partial adhesion, this fold of the valve could not be entirely or completely raised during the ventricular contraction. It appeared, however, to myself and others who carefully examined the preparation in its recent state, that the blood which would escape from left ventricle of the heart, through the aneurism, would be projected into the right auricle, owing partly to the direction of the terminal aperture during the systole of the heart, partly to the projection from the surface of the valve of the pouch in which the aperture was placed, and partly to the reflux current of blood which, owing to the imperfect closure of the auriculo-ventricular orifice, would sweep over the aneurismal aperture in passing from the right ventricle to the right auricle at this period.

The aortic valves were not healthy. On all three of them were slight deposits of lymph. The right valve was larger than the others, and, towards its upper or free edge, was partially cribriform or reticulated, having eight or nine small meshes in it. The pocket of the valve hung down and partially covered the mouth of the aneurismal sac. The corpus Arantii of this valve was larger than natural.

On the upper part of the ventricular or aortic face of the right (or superior and anterior) lamina of the mitral valve was a large oval patch of firm lymph. Its position was such that during the diastole of the heart, when this lamina would be guarding the mouth of the aorta, the patch would be directly opposed to the mouth of the aneurismal sac. The size of the patch corresponded to that of the aneurismal mouth.

Small patches of lymph were observed at the commencement of the aorta.

REMARKS.—1. The cause of death was undoubtedly purulent infection of the blood. The symptoms during life and the appearances after death proved this. Phlebitis is not stated to have been detected on the post-mortem examination, nor is it necessary to assume the existence of this disease to account for the presence of pus in the blood; inasmuch as this secretion may have been derived from the wound, and have entered the circulation by the cut orifice in the vein, into which it was probably drawn during inspiration.

2. That the communication between the two sides of the heart was not congenital, but the result of disease, I entertain no doubt. In the first place, it appears from the reports of both the patient and her mother that up to the period of the rheumatic attack the girl was in perfect health. Secondly, it is tolerably clear that during this attack she suffered with both endocarditis and pericarditis. This is inferred from the symptoms referred to the chest, from the mode of examination and local treatment adopted by the medical attendant, and more particularly from the post-mortem appearances. In the third place, this attack seemed to have produced some permanent cardiac lesion, as the patient never completely recovered from it, but subsequently suffered from time to time with pain at the chest, palpitation, short breathing, and swollen feet. Fourthly, dissection showed the aneurismal nature of the disease. A pouched sac lined by a membrane continuous with the endocardium was found in the interventricular septum: the mouth of the sac being in the left side of the heart, while the pouches projected into the right side, showing that the force by which the sac was distended was derived from the left side: one of the pouches was ruptured, the parts surrounding the orifice being covered with lymph.

I should scarcely have considered it necessary to have recapitulated these facts but for a remark made by Dr. Thurnam* in reference to a preparation in the Museum of the Royal College of Surgeons, that he had discarded the idea which he had “at first entertained, that the opening in the septum of the ventricles, in this case, was not a congenital malformation.” Now, as that case closely agrees in many respects with the one just related, I am anxious that no doubt should be hereafter raised as to the precise nature of the present case.

3. The seat of the aneurism was that part of the septum which is not supplied with muscular fibres. “It is well known to anatomists,” says Dr. Thurnam,† “that the highest part of the septum, which occu-

* On Aneurisms of the Heart, in the 21st vol. of the *Medico-Chirurgical Transactions*, p. 254, 255. 1838.

† *Ibid.*, p. 222.

pies the angle between the posterior and right aortic valves, and which, in some instances of congenital malformation, is deficient, is in the human subject formed not of muscular fibres, but simply of the endocardium of the right and left ventricles almost in apposition, and strengthened only by the interposition of a little fibrous tissue continuous with that of the aorta. In many ruminant animals this point is well secured by an osseous plate; but in man, as a comparatively weak spot, it is perhaps probable that occasionally it may become the seat of aneurismal dilatation. I am not, however, in possession of any fact which proves this to have occurred; unless a case, the preparation of which is in the Museum of the Royal College of Surgeons, and which I shall describe when speaking of aneurismal dilatation of the valves of the heart, is to be considered of this nature."

The present case proves, in a very remarkable manner, the correctness of Dr. Thurnam's opinion; for the situation of the aneurism is precisely that which he thought might occasionally be the seat of the disease.

4. I have denominated the disease *partial aneurism of the left ventricle bursting into the right side of the heart*. I have preferred this name to that of *spontaneous varicose aneurism of the heart*, proposed for these cases by Dr. Thurnam. A *varix* is a vein whose calibre is enlarged, and whose contents are venous blood; and the term *varicose*, it appears to me, is only applicable when a vein, or, to speak more generally, some portion of the venous system, is dilated outwardly. In the present case, there was no external or outward dilatation of the right cavities, and, therefore, I apprehend in strictness the aneurism should not be called a varicose one. The aneurismal pouches which projected into the right cavities had no analogy with varices: they encroached on, not augmented, the diameter of the venous canal, and they contained arterial, not venous, blood.

Careful examination showed that the membrane lining the aneurismal sac was continuous with the endocardium. The aneurism, therefore, was of the *true* species, which, according to Dr. Thurnam, constitutes by far the greater proportion of cases of aneurism of the heart.

5. The rupture of an unequivocal aneurism of the left ventricle into the right cavities of the heart, is, if not unique, at least exceedingly rare. In the first place partial aneurism of the heart does not frequently proceed to rupture; for, of fifty-eight cases of aneurism of the left ventricle cited by Dr. Thurnam, only nine are stated by him to have burst. In the next place, aneurism of the interventricular septum is somewhat rare; and I have not been able to

find notices of more than seven instances of it, and several of these were not originally described as aneurismal. Three of the cases are included by Dr. Thurnam in the fifty-eight above alluded to. A fourth is that of the preparation in the Museum of the College of Surgeons to which I have before had occasion to refer, and which Dr. Thurnam has described as aneurismal dilatation of the valves of the heart. A fifth has been noticed by Dr. Bond*; a sixth is quoted by Bouillaud† from Thibert; and the seventh has been described by Dr. Craigie‡.

Of these seven cases three only took place in the base of the septum, namely, the fourth, fifth, and seventh in the above list. But the fourth and fifth are not unequivocal instances of aneurism; and the seventh did not proceed to rupture. So that as a case of unequivocal aneurism of the base of the interventricular septum which proceeded to rupture, the present is, as far as I can learn, an unique case.

6. The right cavities of the heart were neither dilated nor hypertrophied. This is a fact deserving of attention, since it serves to correct Bouillaud's hypothesis that the passage of arterial blood into the right cavities of the heart modifies their nutrition and occasions hypertrophy. "I would not," he observes, "attach too much importance to this theory; but it appears to me well worthy of remark, that in almost all the cases of communication between the right and left cavities, it is the former which become hypertrophied."§ In the case of the ventricle this author observes, that the hypertrophy is ordinarily concentric (as if the augmentation of nutrition was principally effected in the fleshy fasciculi on which the exciting cause more directly acted), while in that of the auricle it is always accompanied with dilatation.

7. The absence of all symptoms of venous congestion, such as cyanosis, jugular pulsation, &c. deserves to be especially signalized.

Notwithstanding that, during the systole of the heart, blood was projected by both the ventricles into the right auricle, this cavity was neither dilated nor hypertrophied.

It was suspected during the lifetime of the patient that the right as well as the left side of the heart was diseased, and, therefore, especial attention was paid to the condition of the venous system; but, as I have before stated, no symptoms of congestion of it were discovered. On the contrary, every one

* Johnson's Medico-Chirurgical Review, 1838.

† Traité Clinique des Maladies du Cœur, 2me éd. t. i. p. 594. 1841.

‡ Edinburgh Medical and Surgical Journal, April 1843.

§ Traité, t. 2nde, p. 694.

noticed the remarkably florid or vermilion tint of the patient.

It may perhaps be said that this was to be expected, inasmuch as the blood which was abnormally conveyed into the right side of the heart was vermilion-coloured. But Dr. Hope has observed, that if the arterial blood replace venous blood in the right cavities, a diminished quantity of venous blood will be transmitted to the lungs for arterialization, and thus the total mass in the system will be darkened.

In the present instance, I ascribe the absence of cyanosis and of all other symptoms of venous plethora, to the non-existence of contraction of any of the heart's orifices, and to the healthy condition of the pulmonary artery and lungs, and the consequent facility with which the blood of the right side of the heart traversed the pulmonary vessels.

8. Another point, to which I am anxious to draw attention, is the cribriform condition of a portion of the right aortic valve.

In the 20th volume of the *Medico-Chirurgical Transactions*, Dr. Kingston has described this lesion in an interesting paper, on atrophy of the heart's valves. He ascribes it to "progressive absorption," and regards it as a species of atrophy produced by an undue force of the blood's impulse, combined with debility of the valves' nutritive powers from previous disease. In three out of five cases referred to by Dr. Kingston the patients were rheumatic or gouty.

In the present case there was no evidence of any sufficient "undue force of the blood's impulse," to have caused this result. In the opinion of my colleague, Mr. Adams, the lecturer on Anatomy in the London Hospital Medical School, there was no hypertrophy of the left ventricle.

Instead of being atrophied, the valve was decidedly larger than natural; and even after the preparation had been immersed in rectified spirit for more than six months, and the parts had consequently become much shrivelled and corrugated, the valve measured somewhat more than seven-eighths of an inch in length.

The thickness of the valve, though variable in different places, was for the most part greater than natural. In one small spot immediately beneath the cribriform portion, however, it was decidedly attenuated and somewhat pouched. Was this the first step in the formation of another perforation or mesh?

9. It has been already remarked that there was a large patch of firm lymph on the right lamina of the mitral valve, in such a position that, during the diastole of the heart, when this lamina would be guarding the aortic orifice, the patch would be directly opposed to the mouth of the aneurismal sac.

Was the position of this patch accidental? or had it relation to the seat of the aneurism? We know that in pleuritis, the surface opposed to the inflamed portion of the pleura frequently becomes inflamed, apparently in a secondary manner. Does the same hold good with regard to inflammation of the endocardium? In other words, was the inflammation of that portion of the endocardium which subsequently became the seat of the aneurism, the cause of the deposit on the opposed surface of the mitral valve?

10. The age of the patient was remarkable. In thirty-five cases of aneurism, cited by Dr. Thurnam, there is only one case occurring in a patient under twenty-one years; the youngest patient was eighteen, the oldest, eighty-one years old.

Corvisart (quoted by Bouillaud)*, mentions the case of a boy, aged twelve and a half years, who had, during five months, organic disease of the heart. He died of suffocation, and on examination of the body there was found perforation of the interventricular septum; but there was no aneurismal cyst.

Dr. Thurnam has, I think, assigned the true reason of the greater frequency of cardiac than of arterial aneurism in early life; namely, that the former is frequently referable, (as in the present case), to rheumatic endocarditis, a disease of frequent occurrence in young persons.

11. The last topic on which I propose to remark, relates to the murmur and purring tremor.

The murmur was chiefly remarkable for its very great loudness, and for its seat. It was systolic; that is, it occurred at the time of the ventricular contraction, and arose chiefly, if not entirely, from the passage of blood into and out of the aneurismal sac. In fact, it may be regarded as a compound murmur, made up of two or three murmurs of simultaneous occurrence; but which were scarcely to be separately distinguished. The loudest sound (murmur) appeared to both myself and Mr. Luke to exist at the aortic orifice, and was supposed to have been produced at, or close to the sigmoid valves. This must have been produced by the entrance of the blood into the sac. There was also a very loud murmur over the right auriculo-ventricular orifice, and which was probably produced principally by the escape of blood from the aneurismal sac. But as there must have been regurgitation from the right ventricle into the right auricle, and as the regurgitating blood would pass over the roughened portion of the tricuspid valve, it is probable that a murmur would in this way also be produced, and contribute to the loud sound heard at this

* *Traité*, t. i. p. 591.

spot. The dilatation and distension of the aneurismal sac may also perhaps have yielded a murmur.

There is one point connected with this subject deserving attention, as serving to distinguish the murmur heard in this case from ordinary obstructive murmur of the aortic valves; I refer now to the very loud murmur over the commencement of the aorta, and the very slight or scarcely audible murmur in the carotids.

There was no diastolic murmur; at least, after a most careful examination, I could not detect any. Gendrin* states, that in four cases of aneurism of the walls of the heart, he recognised a second or diastolic murmur, which he ascribes to the return of the blood by a narrow orifice, from the cavity of the aneurismal sac into the cavity of the ventricle, when the latter is beginning to relax. But in the present case there was probably little or no blood returned from the sac into the left ventricle, on account of the position of the terminal aperture of the aneurism, and the obliquity of the aneurismal sac. Moreover, during the diastole of the ventricle the mouth of the aneurismal sac would be closed by the right lamina of the mitral valve.

In consequence of the cribriform condition of a portion of the right aortic valve, aortic regurgitation might be expected. If this really took place there was not any perceptible murmur produced by it. But from the perforated portion being of small extent, and near the free edge of valve, while the valve itself was unusually large, I am not satisfied that regurgitation from this condition actually occurred, at least to any great extent.

Loud purring tremor over the right auricle was in the present case a very marked symptom. It occurred at the moment of the systole of the ventricles, that is, at the time when the blood was being propelled into the right auricle from both the ventricles. It was probably caused by the interference of the two currents of blood, proceeding from the ventricles, with each other, as well as with the blood returning into the auricle from the vena cava.

Finsbury Square, September 29th, 1845.

A HINT TO MICROSCOPISTS.

WHEN in difficulty about procuring good specimens of uric acid crystals for the purpose of demonstrating their microscopic characters to his class, M. Donné indulges in a plentiful imbibition of strong coffee, and the luxury of half a bottle of champagne, which together have the effect of producing an abundant formation of the desired crystals in his own urine.—*Cours de Microscopie*.

* *Leçons sur les Maladies du Cœur*, t. 1, p. 109. 1841-2.

Proceedings of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, Oct. 6, 1845.

MR. PILCHER IN THE CHAIR.

Moist Warm Air in Disease.

Dr. WIGAN alluded to the discussion at the last meeting, and detailed some particulars of a very severe case of hæmoptysis which occurred in the practice of the late Dr. Babington, and which was cured by the following simple plan, after every other means had been tried in vain. The season was winter; the patient was kept in a room at a temperature of 70°, and by means of a pipe communicating with the air externally, respired air at a temperature of 28° or 30°.

Mr. CRISP remarked, that Dr. M. Hall was in the habit of keeping up a moist warm atmosphere in a room by placing a jug of boiling water on the foot of the bed, and keeping the patient enveloped in a gauze covering.

Placenta Prævia.

Mr. CRISP inquired the experience and opinions of members in respect to the new practice in placental presentations, as advocated and practised by Drs. Radford, Simpson, and others. He thought the evidence and statistics adduced on this point went to show the superiority of this over the old routine practice. In all the cases detailed, the hæmorrhage ceased immediately after the removal of the placenta. He observed he should follow the practice recommended in the next case that came under his care.

Mr. HADLAND considered the practice in question as a dangerous innovation. The established practice was the safest and best to follow. In placental presentation, turning the child was by no means difficult, nor was the proceeding of passing the hand by the side of, or through the centre of the placenta, according to circumstances, a frequently fatal proceeding. It was not prudent, in these cases, to wait for the unassisted efforts of nature for the expulsion of the child, as recommended by Drs. Radford and Simpson, after the entire removal of the placenta, as the uterus, of course, could not contract, under these circumstances, on the mouths of the open vessels.

Dr. CHOWNE said, that although the practice had been strongly advocated by persons whose opinions were of great weight in the profession, and although cases apparently calculated to prove the propriety of it had been cited, he had not been induced to change his own mode of proceeding in such cases, nor did he expect that the plan of treatment under discussion would supersede that which had for many years had the sanc-

tion of the profession. He considered it necessary to recollect that, under the one and same designation (placental presentation) ought to be included cases combining different sets of circumstances, each suggesting a different treatment: as, for example, the medical man might find the placenta detached and in the vagina, in which case he would at once promote the entire removal of it; or, he might find the placenta so placed that part of it extends over the os uteri detached, the other part adhering; the labour pains may be vigorous and frequent, giving the assurance that the delivery would proceed favourably, and that the child, in its progress, would, by pressure, arrest the hæmorrhage. Such cases not unfrequently occur, and the whole process of parturition proceeds as in ordinary cases, and ends well. In other cases, the placenta may be similarly placed, and hæmorrhage be going on, but without pains. Such is a case in which the question of whether to adopt the plan of detaching and removing the placenta first, or whether to turn, would arise. He still considered that in such a case it would be proper to adopt the latter mode. It was true that many cases were detailed in which separating the placenta, and bringing it away, had been followed by the cessation of hæmorrhage, and the safe delivery of the patient; but he did not think that the practice must be considered essentially proper and safe merely because the dangers to which it was liable had not occurred. He considered that the greatest degree of safety would be given to the mother by adopting that practice which would afford to the uterus the earliest possible opportunity of contracting with the least possible disturbance of that portion of the placenta which remained undetached. Cautiously introducing the hand, and turning, he regarded as most likely to accomplish these objects. Of the success of that practice his own experience had afforded him entirely satisfactory proof, and he felt assured, that such practice, if not too long deferred would in the aggregate be followed by the happiest results. He did not consider that in pursuing the opposite plan we could calculate upon there being any thing in the mere separation of the placenta from the uterine surface, that would arrest the hæmorrhage; that arrest must depend on the contraction of the uterus; and over the process of contraction we have, comparatively, no control. It is true, that labour having once commenced, it generally proceeds, and the desired contractions taking place, the vessels which had bled ceased to bleed, and all ends well. And, moreover, in many instances, a moderate degree of contraction will be enough to close the bleeding vessels. The cases that had been adduced in favour of separating

the placenta were, in most part, such as these, but it was not enough to inquire, whether a practice is correct with regard to any *one* of a series of events, without considering also what may be the some *other* or *others* of the series; removing the placenta, for instance, might have a successful issue, where labour in all other respects but that of the malposition of the placenta is healthy and prosperous, and may therefore seem to be the proper proceeding, but it is necessary to inquire, whether the same result would have followed had there been not one difficulty only, but two or more difficulties; as, for instance, a relaxed habit, deficiency of power, and absence of pains, when, after the removal of the placenta, the uterus does not act favourably, but is dilating and inactive? Under these circumstances, the removal of the placenta will have laid bare the orifices of more bleeding vessels, while the retention of the child in utero, and the absence of pains, would conspire to prevent that contraction on which the patient's safety depends. However true it may be that in ordinary cases of hæmorrhage after the birth of the child, when the placenta remains and is adherent, cessation of hæmorrhage generally follows separation and removal of the placenta, yet there are many exceptions to this rule. On the whole, Dr. Chowne, considering that to be the best practice which constituted the best safeguard in the event of unfavourable after-events, continued at present to prefer, as a general rule, when hæmorrhage was proceeding, in cases such as those to which the discussion referred, the removal of the child from the uterus, leaving that organ free to contract, and to reduce itself to the utmost possible extent, with the least possible loss of time.

Mr. DENDY agreed in the main with the observations of Dr. Chowne, and thought the practice recommended by Drs. Simpson and Radford should not be followed. Turning was easy in cases of placental presentation after the hand had been introduced on one side of or through the placenta. He related a case, however, in which, after passing his hand through the placenta, the head immediately descended, hæmorrhage ceased, and delivery was easily effected.

Dr. G. BIRD said, that the question of practice rested on two points. It appeared that after turning, according to the old plan, a very small per centage, indeed, of children, were born alive, and that in the new plan, as soon as the placenta was removed, hæmorrhage ceased. If these facts were admitted, the new practice would be the best. He knew two very experienced accoucheurs who were in favour of the new mode of proceeding.

After a few words from other members the Society adjourned.

Correspondence.

ANCIENT TEETH.

SIR,—Julius Cæsar and Mr. Ernest P. Wilkins are a little at variance with each other in their individual testimony. Mr. Wilkins says, that the teeth of the aboriginal Britons were worn down “by being rubbed or ground, no doubt from these people being accustomed to masticate hard substances;” whereas the victorious Invader, in writing of these “barbarians,” states, “*Interiores plerique frumenta non serunt, sed lacte et carne vivunt.*” (Commentariorum, à libro v.)

There is another objection, also, to this attrition theory, which is even more conclusive than the foregoing, namely, that in the majority of instances, the teeth stand too prominently (as I stated in my original paper, and elucidated by a diagram) from the jaws, to warrant the conclusion that the whole of the crowns had been worn away. So we must still look for a more satisfactory explanation.—Your obedient servant,

R. H. ALLNATT.

Parliament-Street.

Medical Intelligence.

REPORT ON THE STATE OF THE ECLAIR.—
THE AFRICAN FEVER.

To C. C. F. Greville, Esq.

October 3d, 1845.

SIR,—Agreeably to instructions from the Lords of Her Majesty's Council, we proceeded to the quarantine station at the Motherbank early on the morning of the 30th, to inquire into the particulars connected with the mortality and the prevalence of a malignant fever on board Her Majesty's steamer Eclair, which arrived on the evening of the 28th ult. from the coast of Africa. Having gone alongside, and interrogated the Commander Harston and Surgeon Bernard, the following is the result of our inquiries. L'Eclair sailed from Devonport in November last, having a crew of 146 officers and men, for the coast of Africa, on which station she remained until the 23d of July last, up to which period she had lost nine men from the common coast fever. Four days after sailing from Sierra Leone, one man died with fever and black vomit, the first case of the kind which had taken place; this man had been brought on board on the morning of the 23d, having been the three previous days on shore. During her voyage to Gambia and Goree Buena Vista, where she arrived on the 21st of August, eighteen were attacked with the same fever, with black vomit, of which number thirteen died. At Buena Vista, the disease continued to pread rapidly amongst the crew, when per-

mission having been obtained from the Portuguese Governor, it was determined to land the crew, sick and well, and purify the vessel. A fort was appropriated for the accommodation of the seamen and sick, and the officers obtained lodgings in the town. Every measure was taken to purify the ship by washing and whitewashing, fumigation, &c., all the Kroomen remaining on board with the exception of six employed in attendance upon the sick. The disease, however, continued to prevail amongst the officers and men on shore, thirty-one men having died between the 21st of August and the 13th of September.

Under these circumstances a consultation was held by three naval surgeons, and upon their report and recommendation it was determined that the steamer and crew should proceed to England. The ship's company were in consequence re-embarked, and sailed on the 13th of September. Captain Es-court, having been taken ill the day before leaving Buena Vista, died on the 16th. At Buena Vista, the assistant-surgeon Harte, of the Eclair, died, when Mr. Maclure, a naval surgeon, passenger in the Growler, and Mr. Coffy, assistant-surgeon of the Growler, volunteered their services on board; here also seven seamen volunteered from the Growler. Mr. Maclure died on the voyage to Madeira, and one of the volunteer seamen was taken ill of the fever and recovered.

Upon the arrival of the steamer at Madeira, the authorities refused permission to communicate with the shore, as had been previously done by the French at Goree; but at this island Mr. Bernard, a naval surgeon, volunteered his services, and was received on board, with two seamen. From the day of her sailing from Madeira, the 21st of September, up to this date, the 30th, seven deaths have taken place from the fever, and eight new cases have occurred, viz. :—

Deaths.		Fresh cases.	
2	on the 21st of Sept.	1	on the 22d of Sept.
1	— 25th	1	— 23d —
1	— 26th	2	— 25th —
1	— 28th	3	— 26th —
1	— 29th	1	— 29th —
1	— 30th		

7

The fever still prevailing on board, the first measure deemed necessary was that the ship should be kept in strict quarantine.

2. That the healthy should be separated from the sick. The steamer was therefore ordered to the Four Bill Quarantine Station at Standgate-creek; and an arrangement having been made with the Lords of the Admiralty by which two ships in ordinary, with a proper supply of bedding, &c., were

ordered to be placed at the disposal of the Superintendent of Quarantine at Standgate, with the view of personally superintending the arrangements, we proceeded to Standgate-creek, and having ascertained the number of officers and men who had hitherto escaped an attack of the fever—viz., forty-one, they were directed to be immediately transferred to the *Revenge*, having first undergone the operation of ablution, and afterwards supplied with clean clothing and bedding. All those who had recovered from the fever, together with such number of convalescents as were in a state to be moved, were directed to be transferred to the *Benbow*, leaving only on board the steamer the sick, and such number of officers and men as the commander might think necessary; the Kroomen also to remain on board (not one of whom had been attacked with fever), excepting such number as might be thought necessary to assist on board the *Revenge* or *Benbow*.

Since the 30th ult., three seamen have died, but we are happy to state that no fresh case of fever has occurred since the 29th ult., and that at present there are only two men confined to bed with the fever, and eleven convalescents, under the care of the two medical officers, a surgeon and assistant-surgeon, who have been on board ever since the *Eclair* sailed from Madeira; and we have a confident hope, from the present state of the crew and the measures adopted, that the progress of the disease is arrested.

We have the honour to be, Sir,

Your obedient servants,

W. PYM, Superintendent-
General of Quarantine.

JAMES M. ARNOTT.

THE POTATO DISEASE.

MR. ERASMUS WILSON writes to the editor of the *Times* to announce that the real cause of the destructive changes at present taking place, appears to be the unripeness of the tuber, and the consequent imperfection in the elaboration of its juices. When examined with the microscope, the substance of the potato is found to be not more than one half filled with starch-cells, many of which are incomplete, the remaining portion of the cell being occupied by water. Hence the actual condition of the potato may be stated as follows:—First, deficiency of starch; second, imperfection in the tissue of the cell-walls; and, third, excess of water, to which may possibly be added, imperfectly elaborated starch. As a consequence of the imperfection of the tissue of the cell-walls, and its state of maceration in a superabundance of water, it falls speedily into decay, the change beginning at the surface and proceeding inwards, and being indicated by a brown discolouration of the cells. The starch-cells, which are at first unaffected, are soon en-

closed in the decayed cellular tissue, and becoming involved in the decay, are thereby destroyed.

Mr. Herapath has recommended that the potato should be reduced to pulp, and the starch extracted by the usual process of washing. We agree with Mr. Wilson in thinking that, according to this plan, *le jeu ne vaut pas la chandelle*. The process which he himself recommends for the preservation of the nutritious matter is simple and practical; it is, to dry the potatoes in an oven or kiln at a moderate temperature, and thus drive off the excess of water which they contain, the water being a chief agent in the decomposing process. This method of drying the pulp of the potato, so as to render it fit for food in all climates and capable of preservation, was some years since the subject of a patent in this country. The dried pulp is a hard translucent substance of a yellowish colour and inodorous, until placed in warm water, when it swells up and acquires the usual smell and other properties of the potato. If the dried pulp be just covered with boiling water this is entirely absorbed, and in a few minutes the vegetable is rendered fit for food. We can answer from personal experience that the potato pulp thus treated, is almost as palatable, and quite as well adapted for domestic use, as the recent tuber. We believe that a large quantity of this dried pulp of the potato was used in the late unfortunate Niger expedition: and to those going long sea-voyages, it is invaluable.

From what we have heard we are inclined to believe that the extent to which the destruction of the potato prevails, has been exaggerated. It has been attributed to the excessive use of guano and other animal manures, but this theory has originated with those who are anxious to find an immediate cause for every unusual occurrence. We have been credibly informed that the destruction has equally gone on in crops where no guano or other stimulating animal manures had been used. Indeed, the prevalence of the "blight," as it is termed in Germany, Belgium, England, and it is now said in Ireland, points to some very general cause; *i. e.* the long absence of sunshine, with a very low temperature and abundance of humidity during the greater part of the summer. In a communication to a late number of the *Pharmaceutical Journal*, Dr. A. Ure states that, in his opinion, the disease may be ascribed to some electrical influence; for he found the roots of a portion of one row sound, while those of a contiguous one, in the same circumstances, were diseased. According to this gentleman, 100 parts of the damaged potatoes lose 77 to 78 per cent. (water) by being dried in a gentle steam heat;—whereas 100 parts of sound potatoes lose only 75 parts

upon an average, yielding 25 per cent. of solid matter, the greater part of which is starch. Dr. Ure states that the damaged potatoes after being boiled in an abundance of water, and well drained, have been found to fatten pigs very well, and to cause no indisposition in these animals.

NEW MEDICAL BOOKS, ENGLISH AND FOREIGN,—For August.

The Nature and Treatment of Gout. By W. H. Robertson, M.D. 8vo. 10s. 6d.—Prisons and Prisoners. By Joseph Adshead. With Illustrations. 8vo. 7s. 6d.—An Essay on the Use of Narcotics, and other Remedial Agents calculated to produce Sleep, in the Treatment of Insanity. By Joseph Williams, M.D. Post 8vo. 4s.—Mermie's Experiences. By Spencer T. Hall. Post 8vo. 2s. 6d.—Elements of Chemical Analysis. By E. A. Parnell.—On Therapeutical Inquiry. By Dr. Arnott.—On Diseases of the Liver. By Geo. Budd, M.D. 8vo. 14s. cloth.—Elements of Materia Medica and Therapeutics. By E. Ballard, M.D. and A. B. Garrod, M.D. 8vo. 12s. cloth.—First Steps to Anatomy. By J. L. Drummond, M.D. Fcp. 8vo. 5s. cloth.

Arnold (Fr.), Handbuch der Anatomie des Menschen. Vol. 1, 8vo. Freiburg, 11s.—Berg (F. H. A.), Beiträge zur Behandlung der nervösen Schwerhörigkeit mittelst eines neuer Apparates. 8vo. Berlin, 1s.—Böhm (L.), das Schielen und der Schnenschnitt. 8vo. Berlin, 10s.—Eitner (J. F. W.), Enchiridium medico-chirurgicum. 8vo. Breslaw, 5s. 6d.—Frank (M.), Antertum zur Kenntniss und Behandlung der Ohrenkrankheiten. 8vo. Erlanger, 9s. 6d.—Friedberg (E.), Diagnostik der Kinderkrankheiten. 8vo. Berlin, 5s.—Günther (A. F.), Lehrbuch der Physiologie des Menschen. Vol. 1, 8vo. Leipzig, 14s.—Haeser (H.), Lehrbuch der Geschichte der Medizin und d. Volkskrankheiten. 8vo. Jena, 20s.—Heidenrich (F. W.), der Kropf. Chirurgische Monographie. 8vo. Ansbach, 6s.—Heidler (C. J.), die Nervenkrankheit im Sinne der Wissenschaft. Braunschweig, 8s.—Ingarden (E. N.), Syphilidologie, nach geläuterten haemopathologischen Ansichten und Erfahrungen. 8vo. Vienna, 9s. 6d.—Journal für Kinderkrankheiten, herausgeg. von Behrend und Hildebrandt. Vol. 5, 8vo. Berlin, 10s.—Leisnig (A. F.), über Trepanation. 8vo. Würzburg, 2s.—Meissner (F. L.), die Frauenzinnerkrankheiten. Vol. 2, 8vo. Leipzig, 18s.—Mendelssohn (A.), der Mechanismus der Respiration und Circulation. 8vo. Berlin, 8s.—Mühlbauer (F. X.), Lehre von den Blutcrasen. 8vo. Erlangen, 1s. 6d.—Zehetmayer (F.), Percussion und Auscultation. 2d Edit. 8vo. Wien, 7s.—Zeitschrift, schweizerische, f. Medizin, Chirurgie und Geburtshülfe. Jahrgg 1845. 8vo. 9s. 6d.—Zeitschrift für Psychiatrie, herausgeg. aont Damerous, Fleming und Rotter. Vol. 2. 8vo. Berlin, 16s.

BOOKS RECEIVED FOR REVIEW.

Parnell's Chemical Analysis.—The Ocean Flower, by T. M. Hughes, Esq.—Dr. Arnott on Therapeutical Inquiry.—Hahnenmann and Homoeopathy.—American Journal and Library of Dental Surgery.—Williamson on Procuring Sleep in Insanity.—Report of the Lancashire Lunatic Asylum.—Buff's Grundzüge der experimental Physik. Heidelberg, 1845.—St. Louis Medical and Surgical Journal, Sept. 1845.—Veterinary Record, October, 1845.—Veterinarian, Oct. 1845.—Traité de Toxicologie medico-légale, par M. C. P. Galtier. Paris, 1845.—Chelius's System of Surgery, by South. Part 7.—The Power of the Soul over the Body. 2d edit. By G. Moore, M.D.—On the Period of Puberty in Hindu Women. By John Robertson, Esq.—Address of the Associated Fellows and Members of the Royal College of Surgeons.—Dr. Epps's Rejected Cases.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Sept. 27.

BIRTHS.	DEATHS.	Aver. of 5 yrs.
Males.... 670	Males.... 453	Males.... 491
Females. 604	Females. 405	Females. 472
1274	858	963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	111
NORTH—St. Marylebone; St. Pancras; Islington; Hackney (Pop. 366,303)	146
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London (Pop. 374,759)	153
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar (Pop. 393,247)	199
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich (Pop. 479,469)	249
Total	858

CAUSES OF DEATH in the Week ending Sept. 27.

Col. A. Weekly Averages of 5 Summers; Col. B. of 5 Years.

	A.	B.
ALL CAUSES	858	904 963
SPECIFIED CAUSES	853	897 954
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	222	198 184
Sporadic Diseases, viz.—		
2. Dropsy, Cancer, &c. of uncertain seat	89	101 106
3. Brain, Spinal Marrow, Nerves, and Senses	130	158 159
4. Lungs, and other Organs of Respiration	206	229 292
5. Heart and Blood-vessels	34	21 24
6. Stomach, Liver, and other Organs of Digestion	79	88 71
7. Diseases of the Kidneys, &c.	5	6 6
8. Childbirth, Diseases of the Uterus, &c.	14	9 10
9. Rheumatism, Diseases of the Bones, Joints, &c.	3	6 6
10. Skin, Cellular Tissue, &c.	2	1 1
11. Old Age	32	55 70
12. Violence. Privation, Cold, and Intemperance	37	25 26

The following is a selection of the number of Deaths from the important special causes:—

Small-pox	4	Convulsions	31
Measles	65	Delirium Tremens ..	4
Scarlatina	21		
Whooping-cough ..	36	Bronchitis	21
Croup	6	Pneumonia	44
Thrush	3	Phthisis	17
Diarrhoea	47	Dis. of Lungs, &c. ..	9
Dysentery	4		
Typhus	29	Teething	5
		Gastritis	1
Hæmorrhage	4	Enteritis	8
Dropsy	10	Peritonitis	1
Debility	21	Tabes Mesenterica ..	20
Sudden deaths ..	10	Dis. Stomach, &c. ..	9
		Dis. of Liver, &c. ..	15
Hydrocephalus ..	32		
Apoplexy	20	Childbirth	8
Paralysis	12	Dis. of Uterus, &c. ..	4

REMARKS.—The total number of deaths was 46 below the summer and 103 below the annual average. The deaths from Zymotic diseases are considerably above the averages. The mortality from Measles still continues unabated (deaths 68). The deaths from Hooping-cough have increased. In all the South districts, the mortality is above the Summer average. In all the others, it is below both averages.

ROYAL OBSERVATORY, GREENWICH.

METEOROLOGICAL SUMMARY

For the week ending Saturday, Sept. 27.

	Max.	Min.	Mean.
Height of Barometers	30 [•]	29 [•] 62	29 [•] 48
" " Thermometer ..	60 [•] 1	35 [•] 3	50 [•] a
Self-registering do.	87 [•] 2 ^b	22 [•] 5	
" in the Thames water	57 [•] 2	54 [•]	

^a From 12 observations daily. ^b Sun.

RAIN, in inches, 0[•]81: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 0[•]4° below that of the climate of London for the year, and 12[•]6° below the mean summer temperature. The extreme hebdomadal and diurnal range in the self-registering thermometer was 58[•]9°, and occurred on the same day, Wednesday, the 24th instant. This is the first week in which the temperature has fallen below the annual mean.

ROYAL COLLEGE OF SURGEONS.

Gentlemen admitted Members.

FRIDAY, Oct. 3.—T. O. Walker.—W. H. Day.
—L. Vaughan.—F. F. Kingdon.—S. Monckton.—J. L. Bailey.—R. Faulkner.—A. C. Copeman.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

THURSDAY, Oct. 2.—Alfred Haviland, Bridgewater.—Jabez Henry Elliott, Devizes.—William Thomas Black, Manchester.

NOTICES TO CORRESPONDENTS.

We are obliged to W. F. B., Oxford, for the extract. It shall be inserted.

Mr. T. Crondace, Chester-le-Street. The stamped edition is published weekly. Address to the Publishers, 39, Paternoster Row.

We regret that we have been obliged, for want of space, to postpone the communications of Dr. Mayo, Mr. Stafford, Mr. Newnham, and some other correspondents, until our next.

Mr. Erichsen's paper will have early insertion. We shall be glad to receive the rest of the series.

Dr. Ritchie. An answer will be sent.

Mr. Wilde's letter is referred to the Publishers.

Received.—Dr. J. R. Wardell.—Dr. J. M. Winn, Truro.—Dr. Hake.—Mr. Erichsen.—Mr. J. Robertson.—Dr. Nevins.

SOUTH LONDON MEDICAL SOCIETY.

—The First Meeting for Discussion will take place at the Society's Rooms, Southwark Literary Institution, Borough Road, Southwark, on Thursday, Oct. 16th, at 8 o'clock in the Evening,

EDWARD COCK, Esq. President, in the Chair, when Dr. Barlow will communicate "Some Observations on the Diagnosis of Cardiac Disease."

CHARLES TAYLOR } Hon.
HARVEY K. OWEN } Secs.

Oct. 8, 1845.

SCHOOL of PHYSIC in IRELAND.

The Professors will commence their Lectures and Hospital Attendance on Monday, November 3.

At Twelve o'clock Sir Patrick Dun's Hospital will be visited by the Clinical Lecturers, Dr. Osborne and Dr. Barker, who will deliver Clinical Lectures twice in each Week.

LECTURES WILL BE DELIVERED

At 10 o'clock by Dr. Law, on the Institutes of Medicine.

At 11 o'clock by Dr. Osborne, on Materia Medica and Pharmacy.

At 1 o'clock by Dr. Harrison, on Anatomy and Surgery.

At 2 o'clock by Dr. Barker, on Chemistry.

At 3 o'clock by Dr. Greene, on the Practice of Medicine.

At 4 o'clock by Dr. Montgomery, on Midwifery and the Diseases of Women and Children.

At 3 o'clock by Dr. Brady, on Medical Jurisprudence, on Fridays and Saturdays.

Dr. George Allman's Lectures on Botany, with Demonstrations, will commence on the last week, or last but one, of April, and end before the middle of July.

In compliance with a regulation of the Board of Trinity College, the Clinical Lectures at Sir Patrick Dun's Hospital will be continued during the months of May, June, and July, by the Clinical Lecturers for the year.

Demonstrations at the Anatomical Theatre are delivered by Drs. Hatchell and Charles Croker King.

Demonstrations on Practical Chemistry, at the Chemical Laboratory, by the Professor and Dr. William Barker.

The Medical Library at Sir Patrick Dun's Hospital is open on Tuesdays and Fridays, at 3 o'clock, for the delivery of books to students, conformably with the regulations of the College of Physicians.

The Lectures on Anatomy, Chemistry, and Botany, are delivered in the Medical Lecture Rooms of Trinity College.

The Lectures on Materia Medica, Institutes of Medicine, Practice of Medicine, Midwifery, and Medical Jurisprudence, as also the Clinical Lectures, are delivered at Sir P. Dun's Hospital.

N.B. By order of the Board of Trinity College, and the College of Physicians, no Student will be permitted, after the 25th of November, to enter for any of the Winter Courses of Lectures.

JONATHAN LABATT, M.D. Registrar,
King and Queen's College of Phys. in Ireland.
October 1845.

NEW WORKS, by ERASMUS WILSON, F.R.S.

A PRACTICAL TREATISE on HEALTHY SKIN: with Rules for the Medical and Domestic Treatment of Cutaneous Diseases. Illustrated with 63 Figures on Steel, by Bagg. Post 8vo. pp. 356.

THE HISTORY of the MIDDLESEX HOSPITAL during the first Century of its existence. 8vo. pp. 296.

John Churchill, Princes Street, Soho.

NOTICE.

THE LONDON MEDICAL DIRECTORY for 1846.

The Editors respectfully request the immediate return of the Circular issued to every known Qualified Practitioner resident in London and its immediate vicinity. New Practitioners, those who have changed their Residence, or any Gentleman omitted in the Volume for 1845, may obtain a form to fill up by applying to the Editors, care of Mr. Churchill, Princes Street, Soho.

LONDON MEDICAL GAZETTE.

Lectures.

INTRODUCTORY LECTURE,

FOR THE SESSION 1845-6,

*Delivered at Guy's Hospital, Wednesday,
October 1st,*

By JOHN HILTON, Esq. F.R.S.

Assistant-Surgeon to the Hospital;
Fellow of the Royal College of Surgeons, and
Lecturer on Anatomy; &c. &c.

GENTLEMEN,—In addressing you on this our first meeting of the present session, I cannot but feel alive to the difficulties of the task which I have undertaken; nor can I readily convey to you the anxiety, with which I have anticipated my present responsible position. Such feelings, however, belong to the quiet of one's own reflections, and I at once, therefore, proceed to my allotted duty, in confident reliance on that favourable and courteous consideration, which, after many years' experience, I am proud to say, I have never found wanting.

There are periods in the lives of men, to which they ever refer with feelings of peculiar interest,—turning points as it were in their existence, which influence, if they do not control, their future destinies. Such, gentlemen, is the present moment to some of you; and having myself passed through the same ordeal, I can well understand your present views, and believe me, truly sympathise in all your hopes and expectations. I could not, therefore, present myself before you this morning, for the purpose of giving the introductory lecture, without being deeply impressed with a sense of the importance which attaches to it on your account, as a first introduction to the sphere of your future occupation, the filling up of which will determine the success of your professional career.

Gentlemen, whilst I have felt that, with my present position, must necessarily be associated the duty of representing my colleagues, I have also felt certain I should receive from them the kindest indulgence; and conscious of my own good intentions towards you, I shall build my hopes upon an extension of that generous and confiding spirit, which ought to embrace in one common bond, those who, emulous of truth, are solicitous to learn, and those who, actuated by pure integrity of purpose, undertake the teaching of others. Although twenty years have now passed since I first became a student at this hospital, I still retain a clear remembrance of the doubt which I then experienced, as to how I could best proceed for furtherance of the object I had in view. Neither time or circumstance can efface

from my memory, the many interesting associations of that period, the many good resolves made, (but not completely carried out), the depicting to my own thoughts, the zeal and energy which expectation placed before me—when youth, activity, and the hope of acquiring knowledge, were my propitious aids and advocates; when the consciousness of misspent time, not to be reclaimed, forced on my conviction the necessity of not allowing to pass unheeded, the next, the only opportunity; nor can I forget the determination with which I then resolved to embrace it. Such, no doubt, are the feelings and sentiments pervading the minds and hearts of those whom I now address. These were my own hopes and fears, in commencing my professional studies under the direction of some whom I have long had the honour of terming my colleagues; and it is with pleasure I avow, that my reliance on my then instructors was not misplaced; and I bear testimony to the influence of their willing and good advice, as to how to learn, as well as of their sincere endeavours to assist me in acquiring information.

My colleagues and myself have all passed through the same portal into which you are now entering; and can therefore appreciate the difficulties which must present themselves to you in your progress. We are all of us students. As yet we are something in advance of yourselves, with the heavy imposition, of undertaking to see you carried with security to the highest degree of acquirement to which it may be in our power to conduct you. I speak the sentiments of those upon whom you must now look as your preceptors, when I say we wish you to regard us as your friends—sincere in the hope, that you will not hesitate to avail yourselves of this expression, to test the reality of that welcome, which any application on your part may call forth. There is a right and a wrong in every thing, no matter how trifling or how urgent. You must use us to discover the right, and so avoid the wrong. You ought to know that the profession you have chosen as the means to carry out your portion of usefulness in this world is the most comprehensive, and perhaps the most important, both in its immediate effects and its issue on this side the grave, to which the mind of man can be directed.

It must be admitted, that it is an important epoch when a new step is to be taken, and new associations formed, which are to affect the whole life of a man; then it is, that the uninitiated require all the forethought and all the advantages which their predecessors in the same path can afford them. Such is the responsibility which every man must attach to himself, and to

his position in society ; it is indeed the prerogative of his existence, and such happily is his natural tendency.

As human beings, we discover ourselves capable of reasoning beyond the actual and the present, and competent to give evidence of our high and distinct character in the animal creation. We have no evidence of any improvement taking place in the faculties of any class of animals excepting man, notwithstanding the long lapse of time since the respective epochs at which they appeared on the surface of the earth. There is a dormant sameness in the capabilities and propensities of the successive generations of the lower animals, which compels the admission of a broad and grand distinction between human progress, and the stationary condition of such animal existence. We cannot for a moment reflect on this subject without allowing the distinction that exists between man and the rest of animated nature : whilst others of God's creatures are formed to be obedient to instinct, imitation, and bodily appetite, man alone is endowed with reason and conscience,—with power to cast his thoughts forward to the future, as well as backwards on the past. While these attributes of mind and reason place man in that lordly position which he holds in the universe, the moral and religious feelings of which his intellectual nature is capable, would seem to inculcate and require a correspondent elevation of his thoughts.

The living body may be termed, and has been rightly considered, the epitome of all the human sciences ; hence, much advantage attaches to a knowledge of the various sciences, whether pure or experimental, as preliminary to the more direct study of the *structure, functions, and diseases of the human frame* ; but these sciences must be pursued as means, not as ends ; for although the principles of the sciences are connected, they are not involved ; they touch each other respectively, but at one point ; it is this point of contact as regards each other, and in relation to the animal organization, and thence with the practice of medicine and surgery, which you must endeavour to ascertain. You must strive to obtain from science all the light you can, to illumine the paths of nature, and to assist you in exploring her vast and wondrous resources. You will not proceed far in your studies of the structure of the human body, without soon discovering the evidence of the most profound science being employed in the adaptation of its parts and in the performance of its various offices and functions ; but as you proceed in your endeavour to prove any point in which life holds a part by the processes of analysis and synthesis, means so conclusive in human science, you

will upon trial fail to elicit any such or similar proof in reference to animal organisation, or animal life. The only conclusion at which you can arrive is, that which points to the fact, that we are not constructed solely according to the principles of human science ; that we are moved and controlled in that state and condition which enables us to display its full illustrations, and at the same time to lay bare, not the limit to human knowledge, but sufficient to expose the conviction that life and final causes are placed beyond our reach.

The materials, then, composing the living body, have attached to them a something which we term life—the wonder and dismay of the sceptic. Of the sciences, Animal Chemistry is that which seems, by its own intrinsic value, and by the erudition of men of splendid talent, to be making the nearest approach to that boundary line which I would indicate, but cannot explain. It is in chemistry especially that the analytical and synthetical methods are employed and relied on as the means of obtaining a knowledge of its own laws ; but chemistry utterly fails to produce organisation by synthesis. Organic chemistry is not the chemistry of organisation, nor is chemical affinity the affinity of vital chemistry ; indeed, there exists between them a perpetual contest ; there is, as it were, an incessant striving of pure chemical affinity for the ascendancy ; but it is only when the life of a part has ceased that the laws of chemistry prevail.

With the loss of molecular life commences the process of putrefaction, which is, indeed, the manifestation of the triumph of chemical affinity.

Although it is true the object of your studies will present all the varied and complicated calculations appertaining to science, invested with life, which limit inquiry, and envelope the secret of organisation, you ought not to be dismayed, but consider it as a stimulus to thought and action ; as an encouragement to employ the high and generic attribute of reason, to aid in exploring nature, and be content to acquire so much as Providence may permit you to accomplish : the amount of which, you may feel assured, as a means to your own happiness, will be to that extent which seems best to the benign omniscience of the Creator.

We may employ the latest discoveries of science to assist in explaining the laws and mysteries of organisation, and we may make ourselves acquainted with these, but yet know nothing of creation or organisation itself. Newton, who discovered the law of gravitation, could not discover the principle of gravity itself.

It is beyond the power of any human being to limit human science, or to say—

thus far shalt thou go, and no further; and vain would be the attempt to annihilate the aspirations of young and fruitful intelligence, or endeavour to enslave the rising generation within the fetters of knowledge now acquired.

Such, happily, is not the spirit of this or other similar Institutions in the present day. We shall delight in the accumulation of your knowledge, and although, it is true, we must be ultimately left in the rear, no act will indicate, nor any thought exist, in the hearts of any of us, uncongenial to your onward and successful career.

Ours is the important office to direct you to those channels through which the fertilising streams of ample resources can be most usefully conveyed to irrigate the varied field of inquiry now opened to your view. In order to prepare yourselves for the reception of those materials which our experience suggests as the most serviceable in this inquiry, you must approach them, not only divested of preconceived notions, but with implicit confidence in your instructors for veracity as to facts, and with credit for an honest enunciation of what they believe to be true. With an ultimate reliance on your own understanding, you will dispel from your apprehensions, the deep shadow, almost of despair, which the oppressing dicta of adventitious and unqualified authority cast upon the praiseworthy ambition of youth.

Gentlemen, a course of good and well-arranged lectures is but an outlined map, which although it may be constructed on the soundest principles, can only express certain great features and particular localities; it may give you a general impression of the subject you are investigating, but the more minute survey must depend on your own personal inspection. We may delineate before you the phenomena of disease, trace their wide extent, and describe their bearings; still, it is in the wards of the hospital alone, amongst the sick and the dying, that you can thoroughly or safely learn the practice of your profession. We can describe and furnish the seeds from which the elements of your knowledge must spring—you must sow them; we can direct you to the soil in which they may be best nourished—you yourselves must cultivate them; the fruits they are capable of bearing will be placed before you, but you must be prepared to gather them; we can point out and distinguish to you that which is good and profitable, and that which on the contrary may be useless or noxious, yet you must choose and select for yourselves; the issue is in your own hands, and so must it ever be. There is no royal road to useful medical knowledge.

Were your views limited to the short-sighted intention of merely passing your

public examinations, you might by the systematic application of your time elsewhere secure the means of attaining that particular object; but remember the avowed object of such information applies only to that special purpose. It will not be capable of conducting you in safety; it will not be available in guiding you through the rugged and uneven path of practice. The haven of its promises lies at the completion of your public examination; and let it ever be in your minds, that it is subsequent to the period of your examination the real difficulty of your position will develop itself; you will then begin properly to estimate your own powers, and to put only the due and legitimate value on the materials in your possession; you will then discover the worthlessness of the information so superficially acquired; that your supposed facts are empty hypotheses, or, if true, so detached from their association with the bed-side of the patient, that they are not capable of being moulded to the exigencies of practice. You will then be yourselves painfully sensible, of what you will scarcely conceal from others, the want of that ability which would enable you to deal with disease; it would be to deprive yourselves of the self-confidence and satisfaction which belong only to those who have laid up a store of serviceable information; it would be to subject yourselves to a long series of mortifying and degrading disappointments; for, even if your judgment be correct, yourselves would doubt it, and your life become a succession of shifts and vain expedients to avert the overwhelming risk of ultimate exposure.

There is not any occupation to which the mind of man can be devoted, wherein true experience forms so essential an ingredient, for sound judgment and discrimination, as in the practice of medicine and surgery; but do not let me be supposed, in speaking of experience, to refer to the outward show of it by the number of years devoted to its accomplishment, nor even to the extent of opportunity:—Experience does not consist in seeing much, but in seeing well: it may be regarded as the formation of legitimate inferences and fair deductions from well-observed facts.

Gentlemen, the hospital you have selected for the formation of your experience is the largest in this metropolis; it is a noble and splendid monument of private charity—noble in its purpose, splendid in its detail: here, charity is dispensed with a free and generous hand, unrestrained by deficient means, or despoiled of half of its beneficence by the necessity for continued appeals to the public. Here, disease and poverty secure relief and consolation, (and all the professional aid which individual wealth could command) free from the interposition of

personal favour, or the bias of private consideration. Disease furnishes the only requisite passport to our wards; this is greatly to your advantage, since it secures to you the opportunity of witnessing the whole of its forms and features, some of which, under other less liberal arrangements, might never meet the eye of the student.

Opportunity, time, and persevering industry, are the great requisites for the acquisition of medical knowledge. *Industry* is the price of knowledge, of whatever kind, or in whatever sphere it may be displayed; it is as necessary for the development of the faculties of the mind as for those of the body; both are increased and go on improving by cultivation. I may here observe, that after considerable experience in marking the course of our medical students, I do not think I could point to any one of the industrious of this hospital, without at the same time adding, that he has become a successful practitioner; and I think I may venture to assert, that he who adopts perseverance as his watchword, will prove successful in after life. Happily, genius is no requisite for the successful prosecution of the medical profession; as I have already said, time, opportunity, and persevering industry, will effect all that can be accomplished. Our talents, however great, will not avail us much, unless they are cultivated with assiduity and diligence; for, although great natural powers may make men brilliant, without industry they will never render them profound. Doubtless, individuals differ in their mental as in their physical powers; nor can it be denied, that some enter life, blest with endowments very far surpassing those which are possessed by others; we mistake, however, if to this cause alone we ascribe the great pre-eminence to which some men have attained, or fancy that, if others do not reach an equal elevation, it is simply attributable to their inferiority; nay, could we but thoroughly investigate this matter, by taking a correct estimate of the natural endowments of men, and view them, with reference to all their doings, we should perhaps be surprised to find how few comparatively of those who have occupied the first ranks in the various professions to which they have devoted themselves have been invested with extraordinary or brilliant talents. It is not my intention to deny that an aptitude to any pursuit is highly calculated to promote success; it may, however, be safely affirmed that this alone will not secure it; and amongst those who have earned the highest honours in our profession will assuredly be found the most zealous advocates and examples of untiring perseverance. You ought, too, to remember, that this most valuable quality is within the reach of every one; and, although we cannot

command great talents, it is our bounden duty to improve to the utmost those which we possess.

Various controlling circumstances must necessarily limit your attendance here; *time*, the most exacting element of your existence, admits of no delay for error or misuse; and, although it may appear to be blind to your faults, and careless of its misappropriation, the day of reckoning must arrive, when it will show how strict an account has been registered against those by whom it has been thoughtlessly abused.

Time may be said to pass on from age to age, and through successive generations, scattering golden opportunities to all, but never pausing to see if they be gathered or improved; and, let me here remind you, that these once lost are lost to you for ever; the more we consider this, the more shall we learn to estimate the value of time: whether we regard its constant and rapid flight, its great uncertainty, or the impossibility of its extension, the more highly shall we learn to prize it.

The opportunities afforded by this institution for medical instruction are not unrivalled, but I do not hesitate to say that they are not surpassed. The systematic arrangements of the hospital leave scarcely anything to be desired; the exact adaptation of means to ends is so clear and well-defined, that nothing disturbs its order, although it is constantly administering to the alleviation of the sufferings of thousands.

Munificent and comprehensive as were the intentions of its founder, Thomas Guy, it is scarcely possible he could have anticipated the extent of good to which he was contributing; he could not have imagined that the time would arrive, when, with the limited means appropriated to it, 65,000 to 70,000 patients would annually receive advice and medicine gratuitously within this establishment. Such is the result of a calculation recently made on the extent of relief afforded. Who can justly contemplate what might have been the feelings of the founder, could he have entertained the hope that the benign influence of this Charity would be within a comparatively short period after his decease extended to every part of the habitable globe, by having added to it the appliances and means for an efficient medical school? This last acquisition is the accomplishment of little more than half a century, and, as a separate and independent school, of a much shorter period.

Within the last twenty years 3267 students in medicine and surgery have received their education at this hospital; and in reflecting upon this fact, it will be difficult indeed to compute the extent of good which

has been thus disseminated. It may now therefore be truly said, that the sun never sets upon the benefits thus constantly and freely flowing from this establishment.

It is your good fortune, gentlemen, to come within these walls at a period when no hindrance is permitted to intercept your course, when every care is taken to aid the forward struggle of intellect, by placing at its disposal all necessary means for its advancement. The authorities of the hospital have recently put forth for your benefit the liberal arrangements which have now thrown open to industry and talent alone, those channels to professional improvement which have hitherto been approachable only by pecuniary means.

If it were necessary to prove that this institution is well adapted for imparting medical instruction, I might remind you of its numerous patients, of its museum, and of its records. The hospital is provided with 600 beds, 500 of which are always occupied by patients; you will readily conceive that amongst this large number of patients there may be found medical and surgical cases of interest in every department of the profession. In truth, you cannot be an attentive observer in the wards, even during a single session, without having the opportunity of seeing examples of almost every important form of disease. A remarkable and very extraordinary case is not, however, that which ought to occupy much of your time; at least, do not allow such cases to abstract your more earnest attention from the diseases of every-day practice. The morbid affections of the eye receive distinct attention in an independent Ophthalmic Infirmary, on a scale quite equal to all that can be required as a part of a general medical education. Nearly 2000 ophthalmic diseases present themselves during the year. Bearing in mind the delicate structures of the organ of sight, and the importance of its function, you will know how to estimate the knowledge you may now obtain, to guide you in the treatment of its diseases.

It is especially in the department of midwifery that young practitioners experience the largest extent of doubt and perplexity. Pray remember, and act upon the recollection, that it is only when you are here at the threshold of your personal responsibility that you can have the facilities of learning the art of assisting nature's processes. The active duties of the accoucheur are of a most responsible kind. I do not believe that a heavier and more intense responsibility can attach to any medical man, than to him who has promptly to decide what to do in cases of uterine hæmorrhage, or to determine how long labour may be protracted with safety to the mother, or at what period he is justified in sacrificing the child. To prepare

you for these, and many other, perhaps greater perplexities, a lying-in-charity is appended, into the duties of which you will be initiated. Nearly 7000 women have been delivered at their own residences by the obstetric students, and others of this hospital, during the last seven years. Hence, there can be no want of opportunity to acquire practical information in this department.

The museum, which results chiefly from the labour of the last twenty years, contains nearly 12000 specimens. Its models of healthy and diseased structure are, I believe, admitted to be unrivalled in this country, and certainly unsurpassed any where for the fidelity of their execution. In no other collection of wax models will you find the same scrupulous attention to anatomical and pathological accuracy. Vienna and Florence possess more in number, but fewer in usefulness to the medical student, for whose service and benefit these have been formed within this hospital.

And let me here state to you, that these models are not designed for the mere purpose of relieving you from some part of the labour of the dissecting-room; for undoubtedly, you must never hope to be good anatomists without first being diligent dissectors; but many of them are correct representations of very elaborate dissections, which want of time alone would preclude most of you from the possibility of displaying by personal manipulation; while others portray, with remarkable fidelity, such structures and organs as can never be shewn with equal advantage in any other way. To their strict accuracy I can bear testimony, and of their great practical utility you will ere long be sufficiently convinced.

The pathological specimens, with the drawings illustrative of diseased structures, present great resources for reflection. This part of the collection registers nearly 6000 facts, each one deserving of your attentive consideration, as being the result of diseased action, and having associated with it the history of its symptoms during life. It is an enormous category of the ills of human nature, and an index to the diseases of millions; in short, there is scarcely any of the usual forms of disease, the morbid anatomy of which you will not be able to discover within this collection. It is only in large hospitals that you can successfully prosecute the study of morbid anatomy; the exact association of which with previous symptoms has led, of late years, to such vast improvements in the treatment of disease.

About 200 inspections of the dead take place here annually, with the advantage of completeness which can never be attained in private practice. Thus, then, with ordinary assiduity, during the three allotted years of

attendance, you may observe the progressive results of disease in 600 bodies—a source of information, the value of which it is impossible to appreciate too highly. At the dead-house you will learn to recognise the causes of symptoms, and to adopt a right interpretation of what you may have observed during life, and by correcting your diagnosis improve your plans of treatment in future cases. Judging from the expressions and the writings of some medical men, you might think them infallible; let such be tried by public practice, and the ordeal of the dead-house; let those who think themselves *always right* in discovering and treating disease, devote themselves unbiassed to its honest exposition, but for a very short time, and I do not doubt they will then candidly admit the existence of numerous imperfections in reference to the practice of medicine. At the dead-house you may learn a becoming mistrust in your own opinions; you will there discover the folly of expecting that reading at home, or solitary reflection, will enable you to convey the benefits of our profession to those who may confide in you.

By dissecting and minutely examining the dead with reference to previous symptoms, you will learn to put only a low and proper estimate on the unphilosophical labours of the purely theoretical nosologist, who, not deigning to detect the diseases themselves, is satisfied to name and classify them by their symptoms alone. It is the province of the systematic nosologist, to make circumstances more or less accidental in reference to diseases, instead of such as are essential to them, *like their seat and nature*, a ground of distinction and arrangement. Clear and definite terms are conducive to clear and definite conceptions; but you must not allow the etymology and classical derivation of the present nomenclature of diseases to be your guide to their real nature; for many of them have entirely lost their pedigree since the study of pathological anatomy has been prosecuted with so much rigour and with so much advantage, in elucidating the real nature of disease.

I have only to add, in reference to the archives of this hospital, that during many years, notes of cases observed during life, and the minutes of post-mortem examinations, have been diligently recorded by the officers and students; that these records number more than 20,000, and when properly examined, studied, and analyzed, will elucidate many valuable conclusions.

I must now beg to remind you that you have identified yourself with a class of society in which strict integrity, and the highest sense of honourable feeling, are absolutely necessary to success. You must feel the importance, as well as the necessity, of continually observing that self-respect

which will prevent you from acting dishonourably towards your professional brethren. You must scrutinize and regulate your conduct by the test of self-examination, and the example of such persons as command the good opinion of honest and upright men. You must not hesitate to condemn in yourselves what you would acknowledge to be wrong in others. A charitable construction of the motives of other men will lead you to hesitate before you doubt the purpose and intention of those who happen to differ from you in opinion.

Gentlemen, it has been my earnest desire so to employ my allotted time as to render it profitable to you, and to meet the anxious wishes of those around me, for the benefit and welfare of their pupils. I might have alluded to many additional sources of information in this hospital, had time permitted. As it is, I have only been able to refer to those which are of most prominent interest. I have endeavoured to convince you that industry, time, and opportunity, are the chief requisites for acquiring medical knowledge, and I have been anxious to remind you of the necessity for exercising the moral feelings—those attributes of reason and conscience which truly render man the lord of the creation.

With a proper sense of his own position, let any one, however learned, examine himself; let him picture to his imagination the highest pinnacle of perfection to which man, in his earthly career, may attain; let him then contrast this picture with the present state of the world and society, and he will feel assured that, notwithstanding the immense progress which man has already made, knowledge is still in its infancy. Even in reflecting upon the rapid strides derived from the achievements of those whose giant minds have diffused among their fellow-beings intelligence and truth, he will still be disposed to say, how distant is the human mind from that perfection to which it may attain—from the perfection for which it appears to have been created! and he will acknowledge with humility how incapable we are of grasping the whole future destiny of our race. He will, at the same time, be impressed with the sublime contemplations to which he can thus address himself, and appreciate the possession of that grand and incomprehensible attribute—*reason*, which permits him, while recording his own progressive advancement, to recognize the existence, and to acknowledge the omnipotence and the mercy, of the Creator.

And here, gentlemen, it was my intention to have closed the present lecture; but feeling that my duty has not yet been completely discharged, I must still, for a few moments, trespass on your forbearance.

Some of you are now, for the first time

removed from all guidance and restraint of others. You are now, as it were, to commence an independent, a self-responsible existence. You have quitted that roof which protected your helpless infancy; you have left those who fostered you in early life; and even now, perhaps, the sound of parental solicitude has scarce died on your ears. Forgive me, gentlemen, if, for a moment, I venture to urge on you,—less forcibly, it is true, but with scarcely less of earnestness,—the vast importance of attending to your present position: you are now launched upon the broad ocean of life, and will find its surface sparkling, as it were, with fascinations, which, *ignis fatuus*-like, would lure you to destruction. You are, it is true, removed from the observation of others; but this, I trust, will only induce you to exercise a more determined mastery over yourselves. Your future pursuits will be such as to furnish ample scope for the full exercise of your best energies; and a high-toned principle of rectitude will be your only and a sufficient security. You have embarked in a noble profession, but it is, too, one of high acquirements; and believe me, gentlemen, the responsibilities to which you now aspire are neither mean nor trivial: low, indeed, must be the view of that man who can regard it merely as the pathway to affluence or comfort.

You are not only to have the care of the lives of men, but you are to be entrusted with that which they value more than life. The profession you have selected not only admits the exercise of the greatest literary and scientific attainments, but also enforces the highest moral rectitude; not only does it call for unflinching courage, and constant self-possession, but it demands not less peremptorily uncompromising integrity, and unsullied honour. It can bind more closely every social tie, or, when mis-used, can sever all domestic bonds.

It stands second only to one; and although truly there comes a time when our art can no longer avail,—a time when we must give place to the higher and nobler calling, which, by presenting hopes of a better and a brighter future, can soothe the dying pillow, and bring repose in death,—yet, gentlemen, even when the anxious and inquiring eye turns to us in vain for that hope which we can no longer offer; amidst the agitation and anxiety of scenes like these—bringing with them the severance of all earthly ties—what is so calculated to produce the necessary calm in the mind of the sufferer as the firm yet tender demeanour of the medical attendant?

It is yours to usher into existence the helpless offspring; yours to avert the perils that beset its early path; yours to guard its maturer growth; and yours to comfort and alleviate its declining years.

Such, gentlemen, are the duties attached to the noble profession which you have chosen; its influences pervade all classes of society; they stretch from infancy to age; it owns no sect or party; belongs not to civilization or refinement; is uninfluenced alike by nation or by colour;—**MAN IS ITS OBJECT, AND THE WORLD ITS SPHERE.**

TAPPING THE CHEST IN ACUTE PLEURISY.

M. TROUSSEAU thinks that paracentesis is warrantable in cases of acute pleurisy, with excessive and rapid effusion, threatening suffocation. It is of great importance to keep the air out of the pleura, in order to prevent putrefaction of the pus; this he effects by wrapping round the pavilion of the canula a strip of very thin skin, which the fluid raises easily in passing out, but which, falling on the orifice during deep inspirations, effectually closes it.* He causes an assistant to compress the abdomen, so as to push up the diaphragm, as also the parietes of the chest. There is some art likewise requisite in making the incision: the external opening should be a little beneath the place where the intercostal muscle is perforated, so that when the canula is withdrawn, the integuments regaining their original relation, may cause the internal puncture, and thus prevent the ingress of air. M. Trousseau says, that, besides the benefit obtained through the subtraction of fluid, there is further advantage gained, that the lung regaining its volume, tears up the adhesions which had previously tied it down.—*Retrospect of Therapeutics, Dublin Hospital Gazette, May 1845.*

M. Trousseau communicated to the Academy of Medicine, March 25th, the results of three operations of paracentesis of thorax successfully performed in effusion from acute pleuritis. The first of these cases differs from those previously published by M. T., in that the dyspnœa was not considerable. M. Trousseau made some reflections on the value of this symptom, as its absence might be deemed a contraindication of the operation. Dyspnœa and orthopnœa, according to M. Trousseau, do not constitute any measure of the degree or seriousness of effusion, as they may not exist when the effusion is considerable, especially if it has formed slowly. According to M. Trousseau, the signs that constantly indicate the gravity and imminent danger of effusion, and which constantly call for the operation, are, the displacement of the heart, whence result syncope, displacement of the mediastinum, depression of the spleen and of the liver, acceleration and feebleness of the pulse, and an anxious countenance.—*Dublin Medical Press.*

* Dr. Fletcher has lately recommended a very similar apparatus.—*Ed. Gaz.*

Original Communications.

CONTRIBUTIONS TO THE PHYSIOLOGY OF THE HUMAN OVARY.

Second Series.

By CHARLES RITCHIE, M.D.

One of the Physicians to the Royal Infirmary, Glasgow.

[Concluded from page 987.]

XII. *General Conclusions.*

1. THE ovary is the primary sexual organ in the unimpregnated human female, as the uterus is in the gravid, and the mamma in the lactating, and exercises a remarkable controlling power both on its own functions as a gland, regulating them according to existing circumstances, and also on the character of the development of the other organs; properties recognised at least tacitly by the ancients, in their designation of the ovaries as the female testes.

2. The vesicles of the ovary were known to anatomists long anterior to the work of De Graaf; but were supposed to be dilated continuations of the seminal blood-vessels, in which, as in so many subsidiary chambers, the conversion of the blood into semen was completed.

3. The term ova, as applied to the germs of the mammalia, was employed from the time of Hippocrates, but they were supposed to be exclusively of uterine formation, and the result of fecundation, at least in their normal form, till the period when Kerckring, De Graaf, and others, attracted to the subject seemingly by Harvey's *Exercitationes*, demonstrated their origin to be in the ovaries, and antecedent to impregnation.

4. The fact of the discharge of sterile ova by virgin birds, and by fishes and insects, was familiar to Aristotle and others, but Kerckring, who wrote about a year before De Graaf, made the additional statement, that such ova are evacuated from the ovaries of quadrupeds, and also unconsciously by the unimpregnated human female, 'instante purgatione menstrua, aut stimulant libidine;' and the physiologists who commented on his treatise indulged in analogical generalization on the oviparous origin of the whole

animal series, and on the spontaneous emission of germs from the ovaries, and their fecundation in the uterus, precisely as has been done in the present day.

5. There is reason to believe that what Kerckring supposed to be ova were merely portions of fibrin, but it is probable that the demonstration of the truth of the first and second of the views now referred to, of his commentators, which has been accomplished in our own time by MM. Bischoff and Raciborski, was prevented being reached, when they were first propounded, by the course of investigation having been turned by De Graaf and succeeding inquirers from the condition of the ovaries in the virgin, to their state in animals which had received the male.

6. The ovarian vesicles formerly mistaken for amphoric enlargements of the seminal vessels, were, after Kerckring and De Graaf, mistaken for ova, although by Morgagni in particular, and also, but on erroneous premises, by Malpighi, and even after a confused manner by De Graaf, the discovery made recently by Von Baer of these vessels as being alveoli only in which the ova are retained, was distinctly anticipated.

7. The statements made by Baron Haller, and repeated by his followers, that ova are formed from the fluid of the ovarian vessels changed by impregnation, and afterwards discharged into the tubes, in which it assumes the ovoid form by coagulation; and that the number of follicles in the ovaries is limited absolutely to from twenty to thirty in each female, are equally erroneous; ova at least, and generally their containing cells, being formed and secreted in indefinite numbers from the ovaries by the inherent organism and power of the latter as glands, throughout every period of female life.

8. The opinion held by Galen, and resuscitated after a long interval of renewed belief in their cæcity, by Fallopius, of the perviousness of the uterine tubes, and that of their systolic and diastolic action, and of their conducting power from within at the ovaries, outward to the uterus, are correct.

9. The antrum tubi of Ræderer is a hernial extrusion of the mucous and peritoneal coats of the tube, arising

from the separation of the muscular fibrils, most probably by some mechanical cause, as the pressure of the fluid of the tube during the orgasm of the latter.

10. The incurvated distal extremities of the tubes are true receptacula ovarum, in which ova discharged from the ovaries may be retained for a short but indefinite time.

11. The tubes are at once oviducts and vasa ejaculatoria.

12. In early infancy, extreme old age, and long-continued organic disease, the ova are minute, transparent, and structureless cells; and in advanced childhood, soon after the critical age, and during pregnancy and lactation, they are more or less organised, larger, and in the latter state are often so well matured, that about one-third of the renewed pregnancies of married women take place while they nurse.

13. In the children and others in the circumstances now mentioned, the exercise of organic power which occasions the secretion and extrusion of ova, is attended also by that of an opaque mucous fluid in the tubes and uterus; but on the attainment by the female of maturity, and onward to the period of critical life, [when the animal powers become again diminished, and the calibre of the arteries reduced,] the ovarian orgasm, like many other vital actions, undergoes periodical augmentations of power, during which, unless when prevented by the disturbing influence of other functional processes or by disease, it extends to the nervous and vascular tissues of the uterus, and gives rise to the formation within this viscus of decidual vessels, which exude lymph and red globules, the latter being evacuated, mixed with watery fluid, mucous matter, and some of the salts of the blood, in the form of menstruation.

14. Every sanguineous uterine discharge, even when of moderate quantity and proceeding from a healthy uterus, is not necessarily of the normal menstrual kind here described, that is, the product of an ovarian orgasm, or natural function, acting through the medium of arterial villi shot out from the inner surface of the uterus, the blood in some such cases having been seen after death, proceeding from the open mouths of the uterine veins; and there being reason

to believe that such a hæmorrhage may be excited by whatever either temporarily or more permanently obstructs the venous circulation of the uterus, as the action of sudden fear, or of disease in the lungs or left heart, on the circulation of the right side of the heart; of tight lacing or other causes on that of the abdominal cava; and that of extensive ovarian enlargement on the corresponding veins of the uterus; but that to confound such discharges, which are generally coagulable, and met with in abnormal circumstances, with the catamenia, is to mistake a pathological phenomenon for the result of a vital and healthy function.

The frequent intermixture again of both arterial and venous blood with the ordinary menstrual secretions, which may be asserted to happen in women with profuse menstruation, is explicable on the principle, in the one case, of the operation of an unnatural intensity of the proper catamenial orgasm, and in the other, of that of an augmented irritability of the muscular fibres of the uterus, retarding by their spasmodic contraction the flow of blood in its veins.

15. The fact that the ovaries do undergo a periodical increase of size before and at the usual menstrual terms, is capable of diversified proof in various forms of disease of these glands, and has also been demonstrated in their healthy condition, as in the case of their hernial protrusion.

16. That this congestion is not caused by the presence or bursting of ripe vesicles is plain from the consideration that the ovaries are often crowded with such, some of which also occasionally give way, and empty themselves by capillary-sized openings in the surface of the glands in women who have never menstruated; and in others who have ceased to menstruate, one and two large and fully-developed vesicles are frequently seen.

17. The catamenia are never regularly secreted without the Graafian vesicles attaining a state of high organization, and being, in general, ruptured before they reach a larger bulk than that of a dried, or at most of a recent pea, the breach in their walls being facilitated by a considerable absorption of their peritoneal covering; while, when follicles of great

natural strength exist in the ovaries independently of menstruation, as often occurs before its establishment and at its cessation, they are perforated with difficulty, remain long intact, often acquire an abnormal size, and their discharge, when it happens, is by a minute opening in the peritoneum, which corresponds with the size of that in their own walls.

18. The elimination of ova, and the process of menstruation, are correlative effects of the vital powers of the ovaries (just as the secretion of mucus, and of gastric juice, and the chymification of the blood, are of those of the stomach), and to suppose the rupture of the Graafian vesicles to be the cause of the menses, is to mistake a frequent association, and, to some extent, effect, for a uniform cause.

19. The principal use of menstruation is, in regard to the ovary, to provide an accessory by which the maturation of its vesicles, and the absorption of their peritoneal and tenacious proper coats, and their extrusion generally, may be promoted throughout the child-bearing period of life; and, in reference to the uterus, to furnish a nidus within its walls by which the ovary may be entangled, retained, and nourished.

20. Despite the discovery, in three or four instances, of zoospermes on the ovaries of some quadrupeds, *post coitum*, the amount, variety, and character of the proof against the ovarian theory of generation in the human subject, appears to be insurmountable; and, in addition, the positive evidence in favour of the uterus being, at least in man, the normal seat of conception, and its occurrence in the tubes or ovaries exceptional only, seems conclusive; the cases of the latter which take place depending probably on the escape of spermatozoa along the tubes during menstruation, or on some accidental and rare arrangement of the mucus in the uterine ends of these, by which it becomes a conducting medium for the passage of the seminal corpuscles towards the ovaria.

21. Although menstruation may return for several successive periods without being attended by the formation of any of the organized bodies called corpora lutea—and that, simply because every menstruation is not necessarily preceded or accompanied by the rupture of a vesicle—the bodies so

named are yet never found in the human female unless in association with that function, and in vesicles which have been ruptured in immediate connexion with one of its returns; the vascular orgasm of the ovaries, which is the essential element of menstruation, being, also, the cause of corpora lutea.

22. A more correct descriptive generic term for these bodies, therefore, would be that of corpora menstrualia, or, in reference to the lower animals, corpora periodica; the different species being arranged according to their physical peculiarities, as corpora cephaloidea, and corpora albida, after the manner described in the first series of these Contributions.

23. Of these organized forms of corpora menstrualia, some, as the white and intra-mural cerebriform species, are *primary*, being formed exclusively under the influence of the congestive menstrual nixus; and others, as the red, and extra-mural cerebriform varieties, are *secondary*, being transformations respectively of the two primitive species, and are produced by the reflex action on the still patent vessels of the recently ruptured vesicles, of the excited and congested gravid uterus.

24. The thickened, moveable, œdematous, and yellowish state of the inner membrane of the unruptured Graafian vesicles, described by MM. Baer and Wagner, as the consequence of impregnation, and the initiative of the corpus luteum, and which M. Bischoff observed in a dog which had not received the male, is often seen in the unbroken follicles of the human ovary, and is totally unconnected with pregnancy.

25. This swollen, puffy, or congested condition of the lining membrane, is best observed, in woman, in the larger vesicles, in which it projects as a vascular corrugated pulp, apparently produced by the effusion beneath the inner layer at points where this does not adhere organically, but merely by juxtaposition with the external, of a transparent fluid; the adhering portions of the two laminae often remaining opaque or slightly yellowish, and communicating, from their arrangement in the form of decussating lines, a reticulated or chess-board aspect to the whole.

26. There is reason to believe that those changes are caused by the congestive orgasm of menstruation, and constitute the first stage in the growth of both species of primitive corpora menstrualia, the effusion in the one, or that of the white bodies, being limited to the cellulated structure of the ruptured membranes, which speedily becomes opaque, thickened, and inorganic; while in the other, or cerebriform bodies, the effusion is more copious, is granular, well organized, and deposited in the shape of convolutions between the layers of the vesicular parietes precisely in those spaces where the surfaces of the latter are free, the form of the convolutions being contingent on the situation of the adhesions or septa.

27. Immediately on the establishment of pregnancy, a reflex vascular influence arises towards the ovaries from the engorged and excited uterus, which, in the event of the existence in these glands of either of the above primitive menstrual bodies, terminates, in the case of the last described species, on the vessels of its membranes and granular matter, increasing the size of the former, and the tenacity, bulk, and succulency of the latter, till, in the last months of pregnancy, its yellow tissue assumes a rose colour, and the body is transformed into the variety called corpus rubrum; while in those other cases, in which the primitive body has been of the species termed a corpus albidum, the uterine nismus, in consequence of the obliteration of the vessels ramifying immediately on the vesicle, does not extend further than the still patent vessels which connected the exterior of the follicle to the stroma of the ovary, in which situation a granular deposit takes place, as a secondary formation, arranged in an annular form around the thickened vesicle; and sometimes, in consequence of the continued plethora of the parts, this structure, which constitutes the extramural cerebriform variety of corpora menstrualia, may be found in the last months of pregnancy undergoing a third transformation, and exhibiting a reddish hue.

28. The perfection of development in a corpus menstruale, whether primary or secondary, will be proportioned to the number, size, and vital activity of the vessels of the ruptured vesicle

at the periods respectively of menstruation and impregnation; and as such properties in the vessels of the follicle must alter speedily, and also progressively, on the evacuation of the latter, it is reasonable to conclude that the changes wrought on its coats, either by menstruation or gravidity, will be much modified by the length of the period which intervenes between its rupture and their accession—a fact which explains, not only the differences of degree in which such bodies are developed, but which also indicates the possibility of both menstruation and impregnation taking place in some abnormal instances without being succeeded by the formation of their characteristic sequelæ in the ovaries.

29. Should two or more Graafian vesicles have been recently and simultaneously ruptured before fecundation, the series of changes which make up the concrete of what is called a true corpus luteum of the species described in this paper as cephaloid, in its two forms of extra and intra parietal, and, although not yet verified by the writer, also, he believes, in the only remaining form,—that of the corpora rubra, will take place indifferently in them all; while, should there have been only one Graafian vesicle ruptured, which has yet happened to contain two ova, both of which have been impregnated, or two vesicles ruptured, the vessels of one of which only remained permeable to the transudation of granular matter at the commencement of the pregnancy, there will, should both ova be impregnated, be two fœtuses in the uterus, and no more than one secondary menstrual body in the ovaria.

30. Taking into view the extra-ovarian and reflected nature of the cause which converts the primitive corpora menstrualia of the unimpregnated female into their secondary varieties during utero-gestation, connectedly with the previously ascertained facts of the subject, there does not appear to be anything impossible in the supposition, that, in the event of a morbid orgasm of the uterus, such as might accompany several of its diseases of structure, being set up immediately on the formation of a corpus menstruale, that the irritation and plethora of the uterus might become extended to such body, and control its development, somewhat in the manner of pregnancy.

31. Yellow or black, unorganised deposits (the corpora flarida and nigra of the former series) enclosed either in unruptured or broken vesicles, having their coats stained, but of natural consistence, are seen in the ovaries in every stage of life; but they are, so far as the writer has ascertained, nothing more than mere blood marks,—the colour of the vesicles being the product of mechanical and not of vital changes.

32. In regard to the bearings of the subject as they involve questions of jurisprudence, the facts are, summarily, that pregnancy may exist without the presence of any other structures within the ovaries than that, 1st, of one or more ruptured, but otherwise unchanged vesicles. 2d. Of one or more discharged follicles, stained yellow or black with blood. 3d. Of one or more broken vesicles partially converted into white or into brain-like bodies. 4th. Of one or more fully developed white bodies. 5th. Of one or more similar intra-mural cerebriform bodies. 6th. Of a single or of plural more or less perfect extra-mural cerebriform bodies. 7th. Of a single or of plural more or less developed corpora rubra, of either the intra or extra-parietal kind. 8th. Of any of the appearances now enumerated, associated with either of the others; and that these phenomena are to be regarded as having an essential connexion with the state of pregnancy with a measure of probability which, as refers to the first four, is at present strictly hypothetical, but which, with the succeeding three, augments directly in the order in which they are arranged; while, on the other hand, it is proper to state that there is an abstract or hypothetical possibility that the appearances which are indubitably the usual adjuncts and indications of pregnancy, may yet in certain presumable combinations of circumstances (never, however, hitherto proven) present themselves independently of conception.

33. The inherent faculty of the ovaries, owing to which they vary their functional action according to their relative condition, is illustrated by their secretion of structureless cells in childhood, so that these can then be discharged irrespective of the aid of any special orgasm of the parts; and, again, in pregnancy,—by which the occurrence of superfetation, otherwise

a probable event, is rendered rare; and, again, during lactation,—to the avoidance of the early renewal of impregnation; and, lastly, in the amenorrhœa of disease and age, when,—the evolution of the vesicles not being any longer aided by menstruation, is anew facilitated, as in childhood, pregnancy, and early lactation, by the extreme tenuity of their coats. It is, again, illustrated in the formation of well-organised tenacious vesicles in the child-bearing period of life,—so well adapted equally to the specific functions of that period, and, also, to prevent their wasteful rupture on the frequent occasions of excitement to which adult life is exposed; and receives, again, another proof in the superinduction of the menses at this time, without which the normal rupture of the follicles, for the purposes of re-production, could not, on account of their increased organisation, have been secured. The same accommodating quality of the ovaries is seen in cases where the menses have been suddenly arrested while the ovaries contained a number of the ripe vesicles always associated with that function; by such vesicles, no longer able, from the absence of menstruation, to penetrate the peritoneum, being translated, still covered by the peritoneum, to some part of the adjacent organs, where, separated from their nutrient vessels, they pass into the condition of inorganised bodies. The same principle comes into operation when, from any cause,—such as the chronic peritonitis of children, the peritonitis which often follows abortion and pregnancy, and that inflammation of the fimbria and tubes which so frequently takes place in prostitutes, the tubes have become impervious, by the prevention, or speedy arrest, in such circumstances, of menstruation, and the consequent hindrance of the secretion of any other than such fragile, structureless, and small-sized vesicles, as can be easily and safely discharged without the aid of the tubes;—a species of amenorrhœa, therefore, which, should this view of its nature prove correct, ought to be regarded as inevitable, salutary, and not suited for treatment.

34. From De Graaf to Drs. Lee and Paterson, on the one hand, and from Malpighi to Negrier, on the other, physiologists have hitherto universally regarded the extrusion of ova from the

ovaries as being effected by the agency of corpora lutea, only that, by the former series, these yellow bodies were supposed to be an effect of impregnation,—a bastard modification of them being produced by sexual excitement and menstruation; while, by the other line, the same structures were believed to be formed by the coalition of several Graafian vesicles, the central bodies included within many of them. and which are nothing else than the contracted cadavers of the ruptured vesicles, being represented by most writers of both classes as the genuine ova.

35. In a like way as Kerckring's announcement of ova being formed within the testes of mammals, was followed by speculations on their spontaneous excretion by the whole animal series, which would probably have terminated in a correct exposition of the physiology of the ovary but for the false principles introduced into the inquiry by De Graaf and Malpighi; so the demonstration by Von Baer of ova within the vesicles of the ovary, (although involved theoretically in the opinions previously held of the rupture of these by venereal orgasm, and in animals at the season of rut, and very tardily appreciated by those who treated the subject afterwards,) is probably to be regarded as the true point of departure of the opinions now entertained of the spontaneous elimination of ova from the ovaries of all classes of animated beings, and is equalled in importance only by the discovery made more recently by MM. Raciboski and Bischoff, of the same bodies,—escaped from the ovarian vesicles without the aid of the males, within the tubes of the virgin mammal.

RESULTS OF HYDROPATHY.

AFTER having undergone a course of the hydropathic system of treatment, M. Albert observes, that the patients, especially the uncured ones, present a condition closely allied to that of scurvy. The pulse is small, feeble, and rapid; there is great sense of lassitude, together with an unusual state of restlessness and irritability. The appetite is lost; the urine is pale, and speedily becomes fetid; aphthous spots, and even small ulcers, form in the cavity of the mouth, and in the pharynx; the gums show a frequent tendency to bleed,—leech-bites bleed profusely, and the hæmorrhage is with difficulty arrested. — *Schmidt's Jahrbücher*, No. 2, 1845.

RECORD OF CASES.

By THOMAS MAYO, M.D.F.R.S.

Physician to the Infirmary of St. Marylebone.

[Continued from p. 384.]

THE following two cases are offered as illustrative of previous contributions made by the author:—*Rubeolous eruption with desquamation, appearing after Rubeola.* (See p. 226, vol. xxxiv.)

May 2d. 1845. — Thomas Morrice, aged 6 months, was admitted into the Infirmary out of the nursery with pertussis. In appearance he was of sound constitution; the paroxysms of cough, not unusually severe, were mitigated by Mist. Antimonial. ʒij. 8vis horis. But the nurse of the ward reported that he had two fits on the first day, and a third on the 4th of May. From that time none recurred. On the 9th measles supervened, and ran a mild course with the ordinary symptoms, but no desquamation. On the 19th there came out another eruption, of a more confluent character than the first, but bearing the character of measles where it was discrete, and of an unusually vivid colour for measles. But the great peculiarity about this eruption was, that it soon took on a process of desquamation, and continued this with great severity, so as to make deep rhagades in the child's person, and to distress it extremely. This procedure lasted to nearly the end of June, when the skin gradually became healthy. At present (July 8th), the child has no other remains of indisposition, than an occasional hoop.

In regard to pulmonary disturbance during this affection, I have only observed, that on the 13th of May, when the first measles were at their height, there was hurried breathing and deficient vesicularity. In regard to treatment, on coming in, the infant's bowels being then freely open, Mist. Tragacanth. ʒij.; Træ. Lyttæ, mij.; Vin. Ipecac. mij. were given 8vis horis. This was suspended the next day. Then Pulv. Hyd. Chlorid. c Antim. gr. ij.* bis quotid. for some days, the antimonial mixture being used occasionally. This course was pursued through the attack of genuine rubeola, with one Emplast. Cantharidis inter-

* Hyd. Chlorid. Pulv. Glycyrrhiz, aa. part. iv.; Antimon. Potass. tart. pars i. p. m.

scapulas. The pertussis continuing severe, the *Mist. Tragacanth* with *Acid. Hydrocyanici dilut. m.j.* for a few days, then with *Træ. Lyttæ, m.j.*, was resumed. But the pseudo-rubeolous eruption instantly supervening on its use, this latter medicine (the *Tinct. Lyttæ*) was again given up. The *Acid. Hydroc. Dilut. m.j.*; *Træ. Hyosey. m.j.*; *Mist. Tragacanth. ʒij.*, now given 6tis horis, much mitigated both cough and restlessness. Afterwards *Quinæ Disulphat. gr. 1/3*, 8vis horis, and finally, in place of this, from June the 16th to the end of the month, *Liquor Potassæ Arsenitis, m.j.*; *Aquæ Menthæ, ʒij.* bis velter quotidie. Meanwhile, June 19th, I had directed the external use of *Sodæ Carbonat. ʒiss.*; *Lactis, Oj.* extensively as a lotion; and this last was of very great relief and advantage to the little patient, whose state of extreme excitement and distress from the joint influence of cough and eruption, form my excuse for this tentative use of medicines not usually given to so young a subject. His bowels were carefully regulated throughout the illness; once his gums were lanced, and he had the advantage of a very good breast of milk.

In the above case the occurrence of an eruption resembling measles, with an excessive and long enduring desquamation, rubeola itself having previously run its course without desquamation, deserves notice. The fact also is noticeable, though being solitary it may have little weight, that this secondary eruption in the latter illness, and in the first illness some convulsive attacks, took place immediately after the exhibition of some doses of *Tinctura Lyttæ**.

Albuminous urine; Ascites; Paracentesis Abdominis.

I have recorded, Vol. i. p. 541†, a case of fatal peritonitis ensuing on paracentesis, without pyrexia, or any other evidence of inflammation during life. The following case offers some features of contrast to the above.

On the 25th of June, 1845, Evelina Murphy, aged 45, a person of spare habit and cachectic appearance, was tapped without any untoward symptom, and is now, July 20th, perfectly

recovered from the effects of the operation, and in a state of improved health. Two years ago, this person, a hard-working laundress, with a family, had one profuse menstrual period, having previously menstruated freely all her life. After this the catamenia never returned. Since that time she has had œdematous legs, feverishness, rheumatic pains, and loss of strength. She entered the Infirmary in July 1844, then labouring under chronic bronchitis, which subsided. But ascites gradually supervened on œdema. The urine became scanty, and being examined by heat and nitric acid, turned out to be slightly albuminous, and of the specific gravity of 10. She lost power; and orthopnœa was commencing, when the operation was performed by Dr. Boyd. Now, in spite of the predisposition to inflammatory deposits on serous membranes, which the granular kidney implies, the operation has in this case been successful. In the case which I contrast with it, ending in fatal peritonitis, the kidneys were healthy; the only disease disclosed post-mortem was the hob-nailed liver. Now, two circumstances connected with the operation in Evelina Murphy deserve to be recorded. How far they promoted or impaired its success may be a matter of question. It was performed with a small exploratory needle; and so far the peritoneum was spared. On the other hand the patient was under salivation from doses of *Pil. Scilla c. Hydrarg.* at the very time of its performance. The opinions expressed on high authority against the use of mercury under presumed granular disease deserve to be reconsidered. The inflammatory process often attendant on this state is such as mercury influences curatively in other instances: the question, no doubt, must be decided by experience, but the burthen of proof rests rather with those who impugn the expediency of mercurials, than with those who assert it, as far as analogy is concerned. The other circumstance which I have mentioned, the use of a needle instead of trocar by the operator, if effectual in giving exit to the fluid, needs no proof of its expediency. The treatment of this case was limited, as far as diuretics were concerned, to the *Haust. Juniperi, Co. ʒiss.*; *Potassæ Acetat. ʒss.*; *Træ. Scillæ, mxxv.*; and *Pil. Scillæ c.*

* In reference to this remedy, see Dr. Watts on Chin Cough.

† New Series.

Hydrarg., which had salivated her, without otherwise incommoding her. After the operation, the urine, which had continued scanty to that time, sensibly increased. From the period of the operation to the present day, September 15th, she has taken the Haust. Juniperi Co. ζ ss.; Træ. Scillæ. $\mathfrak{m}\mathfrak{x}$ v. with the addition from July 12th of Ferri Citrat. gr. iv. 8vis horis. The ascites gradually returned for some weeks, but latterly her size has not increased. Her breathing is undisturbed, and her general health and appearance are much improved: but the urine continued as albuminous as before, on the application of heat. It is slightly acid, of a pale straw colour. There has never been any cerebral oppression.

Granular Kidneys—Hypertrophy of Liver.

In the following case, the points which claimed attention, as viewed in relation to each other, are the marked temporary benefit obtained from certain remedies; the ultimate accession of fatal symptoms, and the appearances on dissection.

Charlotte Keefe, aged 5 years, was admitted into the Infirmary, October 22d, 1844: of a leucophlegmatic appearance and complexion, with a very large abdomen, extensively tympanitic, except about three inches below the edge of the right ribs; a strumous cicatrix under the left jaw; the tongue moist and clean; the skin cool; urine albuminous; sp. gr. 7; some œdema. She had undergone scarlatina six months before. At first I applied a large Emplast. Ammoniaci c. Hydrarg. to the right hypochondriac region, and gave Acidi Nitrici, $\mathfrak{m}\mathfrak{j}$.; Aquæ Pura, ζ ss. ter, which was exchanged for doses of Mist. Antimonialis on the 25th, as some bronchitic symptoms supervened. A blister was also applied.

On the 29th, the respiration being entirely relieved, I ordered Ferri Citrat. gr. iij.; Vin. Ipecac. $\mathfrak{m}\mathfrak{v}$.; Aquæ, ζ v.; Syrup, ζ ss. 6tis horis. On this plan, assisted by friction of the abdomen by a stimulating liniment, viz. Liniment. Sapon. Co. ζ iv.; Træ. Lyttæ, ζ ij; the patient improved much. The abdomen became far less tumid, the complexion less anæmious, the eyes brightened. It was continued to the 12th of December, when cough again supervened, and was again subdued by a blister,

with Pulv. Hydrarg. c. Chloridi Antim. gr. iij.; Scillæ Bulb. gr. j. 8vis horis.

December 19th.—The Citrate of Iron was resumed, and continued to Jan. 21st, 1845, with marked advantage, the abdomen resuming its tendency to become less tumid, the strength and vivacity of the child increasing without pyrexia. She then seemed to become stationary. I exchanged the plan for Liquor Iodinii Co. $\mathfrak{m}\mathfrak{x}$.; Aquæ Menthæ, ζ ss.; at first 8vis, afterwards 6tis horis. This was continued, with occasional remissions, to the child's manifest improvement, and without any drawback during four months. On the 6th of May inunction with the Unguent. Iodinii was also prescribed, and continued for a fortnight.

The child was now playing about the ward, still with a full abdomen and pallid complexion, and albuminous urine, but at a much higher point of health and strength; her appetite and spirits good. My attention was called to her on the 1st of July by the nurse. She had been for a day or two languid and sleepy, and indifferent to food. The weather was then oppressive. She complained of no pain. Œdema had increased about her face, thighs, and legs. The urine was plentiful, having never been deficient; the skin dry, but cool; the respiration quiet; the pulse oppressed.

I am unable to give an exact account of this last stage of the case. It ran the ordinary course of granular disease of kidney, embarrassing the cerebral circulation, and terminated fatally, without any material reaction, on the 12th of August. The depletory treatment ordinary under such symptoms was adopted, but without the least relief, except that after the free action of one blister the anasarca diminished. On its failure, and under collapse of the patient, a short trial of the Citrate of Iron, gr. iij. 8vis horis, was made, as having formerly agreed so well. But this was suspended, as nausea and cerebral oppression increased under its use.

The child at no time complained of or admitted the presence of pain; but on the 8th of August, it was observed, that she resented pressure on the abdomen; and from that time to her death small doses of Calomel and the Potassio Tartrate of Antimony were given octavis horis. The diet throughout her ill-

ness had been nutritious, but unstimulating.

Appearances on autopsy, as afforded me by Mr. Allen :—

General anasarca ; granular and nodulated kidneys, each weighing $3\frac{1}{2}$ oz. (rather above the average weight) ; ulceration of colon and Peyerian glands ; lower lobe of right lung congested ; liver large, with an effusion of lymph on its surface ; brain large and pale. No mesenteric disorder was observable.

The total absence of pyrexia, the anæmious complexion of this case, the indications of a strumous habit, led me to consider the renal degeneration as anæmious in its character, when it came under my care. I could make out no recent inflammatory accession which should lead me to suspect a chronic state of *that* kind. I therefore adopted at first a line of treatment such as the low state of constitution warranted. An inflammatory accession, however, arrived, and proved fatal. But it must be observed, that this did not supervene upon that part of the treatment which might be called stimulant, but upon a long-continued course of the Liquor Iodini Co. How far the deposit of lymph on the surface of the liver was an adynamic process, analogous to that above referred to in a case of peritonitis*, may deserve a question. In the present case, there was ulceration of Peyer's glands, which might equally with that symptom explain the presence of local tenderness. With respect to the influence of the moderate doses of iodine given, certainly under their exhibition the child had every evidence of improvement, except that neither this nor any part of the treatment had the smallest effect upon the albuminous deposit or density of the urine.

[To be continued.]

ON PTYALISM PRODUCED BY COLCHICUM.

I HAVE seen three cases in which profuse ptyalism resulted from the use of half a drachm of tincture of the seeds of colchicum three times a day during some time. In one of these cases at least, mercury had never been taken, nor had he ever been salivated. They were all cases of ophthalmia.

This observation is of interest in connecting the action of colchicum with mercury and iodide of potassium.—*Dublin Hospital Gazette.*

* P. 541, Vol. i. N. S.

SOME REMARKS ON THE INEFFICACY OF RE-VACCINATION.

By W. NEWNHAM, Esq.*
Farnham.

THE existence of small-pox as an epidemic in many parts of the kingdom during the last twelvemonth, cannot fail to present peculiar claims to the attention of the medical man and the philanthropist. That such a scourge should still stalk abroad through the length and breadth of our land, and still find unprotected victims upon whom to waste its unmitigated fury after fifty years' enjoyment of one of Heaven's best gifts—the discovery of Jenner, is a fact which must afford materials for grave reflection to any right-thinking person, and to ourselves especially must prompt the question, have *we* exerted our very best efforts to mitigate this pestilence?

My thoughts have been naturally directed in this train by the circumstance of my immediate neighbourhood having suffered from this malady for at least five months. Not having had any thing to do with the medical care of the poor during the last year, I am unable to furnish those statistical details which would have been valuable, and which will, I trust, be forthcoming from the respectable practitioner who has had the immediate supervision of this fearful disease. I do not, therefore, propose entering into the question at large, but merely calling your attention to some phenomena which have presented themselves to my especial notice.

I find that the first registry of death occurred on the 22d December, 1844, and the last on the 26th of May, 1845 ; so that the malady has extended its visitation over fully five months ; nor, perhaps, can we yet be said to be wholly free from its incursions. It seems doubtful whether this attack has ever existed as a real epidemic, or atmospheric visitation, since it was introduced into our town by a patient from Alton, and conveyed by some of the members of his family to the Infant School ; it next made its appearance only in the children of that school, and

* Read at the Annual Meeting of the Southern Branch of the Provincial Medical and Surgical Association, held at Reading, June 26, 1845.

was subsequently propagated to the families and connexions, and attendant nurses of those patients; so that in almost every instance the infection could be clearly traced to direct or indirect communication with diseased individuals.

During this period twenty deaths have been registered as having occurred from small-pox, eighteen of which were of individuals wholly unprotected; and of the remaining two it was stated that one had been vaccinated, and that the other was *doubtful*. Again, of the other who died, having been vaccinated, it is doubtful whether he died from small-pox, or from organic disease, which was assuredly carrying him to his grave, and the termination of which was only hastened by the shock given to the system, when it was ill able to bear the aggravation of its woes. Admitting, however, that there were two deaths from small-pox after *efficient* vaccination, which is far more than I shall be disposed to allow, in the present unsettled state of opinion as to what is a perfect vaccination, still there remain eighteen unnecessary deaths; and this fearful waste of human life ought to be prevented.

I have no means of informing you as to the total number of cases of small-pox in the unprotected, or of the proportion which these bear to the cases of small-pox after vaccination. In my own practice the cases of the former were few, and of the latter *very many*; but from the fact of their occurrence not among the very poor, they would be found, for the most part, among vaccinated individuals:—hence they would form no criterion to the truth—they would, in fact, only lead to erroneous conclusions.

The first case which came under my notice occurred in a young lady of the neighbourhood in December 1844, and in this instance it was clearly traceable to her having gone to the house in which the individual first affected in Farnham resided. Though occurring in a very large household, no other individual suffered. This, however, was not always the case; for in another family rendered small by accidental separation, three cases occurred out of seven individuals; and in general it may be reported that there were many instances of modified small-pox.

Among these, the uniform character

of the malady was that of smart eruptive fever for two or three days; then the characteristic eruption appeared, and the patient was much relieved. On the fifth day the pustules began to turn off, and by the eighth or ninth, desiccation was complete; the process of maturation and secondary fever being altogether, and in every instance, superseded. So uniform was this process, that one felt justified in predicting to the patient what would be the course of his malady, and the result invariably vindicated the prediction. So marked was this modification, that our clergyman assured me that he had never been wrong when he had distinguished between ordinary small-pox and of small-pox after vaccination; and the modifying influence of the latter over the former was more than abundantly marked. And if there have been cases which would seem not to justify this report, may they not fairly be attributed to vaccination performed by perfectly ignorant persons—to frequent carelessness about this process—particularly in the fact of the arms not being presented for inspection—and to the unsettled state of medical opinions as to the characteristics of a genuine vaccine arm, as well as on some other points connected with the subject?

It is certainly a remarkable fact in the history of medical opinion, that such discrepancies should exist after more than fifty years of investigation, observation, and experience, on a point of science which does not legitimately admit of theory, and which requires only attention, accurate observation, and a faithful record of demonstrable facts presented to the eye. Under such circumstances, are we to attribute the unsettled state of the question to the worthlessness of human testimony, or to the real difference presented in the course of the same specific malady in different localities, or to the want of just habits of sound discrimination? I shall not attempt to settle these great psychological questions, but shall limit the remainder of my paper to some observations on the much mooted point of re-vaccination.

It is nearly three years since I stated at York the entire uselessness of re-vaccination, except as a test of the efficacy of a former vaccination; and I grounded that statement on the complete defiance to all philosophy, and to

all experience of nature's agencies, with regard to true specific disorders of the human frame, involved by a contrary hypothesis, and also upon the result of some hundred cases of re-vaccination. Since that time, many subsequent re-vaccinations have confirmed the views then promulgated, and in one instance only have I seen a vaccine arm follow such re-vaccination,—this being an exception to the general rule, and being easily accounted for by the absolute failure of the first, or by the fact of the individual being one of those extraordinary subjects in whom a first attack does not supersede after-susceptibility.

And I find it gravely propounded, during the last year, that re-vaccination should be performed every seventh or tenth year. I should really like to know upon what ground, scientific or practical. As a scientific question, vaccination is, or is not, a remedy possessing such power over the human frame as, in a great majority of cases, to render it completely insusceptible to an attack of variola; and in other cases, though the susceptibility be not destroyed, the influence is such, nevertheless, as to modify the attack of small-pox, so as to deprive it of its malignity, and to alter its course and symptoms. It is said, and upon very feasible and philosophical grounds, to be itself a form of small-pox: and if so, it must partake the essential character of small-pox, which is that of a specific malady, occurring but once during life. Or suppose it not to be small-pox itself, but to possess the prophylactic power above described; and if so, it must possess certain qualities by which it may prove an antidote to small-pox, and must claim for itself so much resemblance in its nature as to be a specific malady, and employed for a specified object, in the same way as true inoculated small-pox was employed to diminish the fatality of natural variola. But it is not the nature of specific maladies to exert their modifying power over the human constitution for a small series of years; on the contrary, measles, scarlatina, hooping-cough, small-pox, and all other specific maladies (with, in every instance, a certain number of exceptional cases), exert their power for the whole duration of life: and there is no reason, on scientific grounds, for be-

lieving the contrary with regard to vaccination. The proposition admits that the modifying power continues for seven or ten years: and if so, by what law, or upon what principle, does its modifying power then cease? We must deny its remedial agency altogether; we must deny its identity with small-pox; we must deny altogether its specific character, or we must give up this most unphilosophical tenet of the influence wearing out.

As a question of practice it is yet more unfortunate; for again, I deny the possibility of producing a vaccine arm a second time in the same constitution, but in the exceptional cases before mentioned. Now it is not denied that a *sore* arm may be produced; on the contrary, it may, and it will—and it may be produced, not only once in ten years, or in seven years, but every year, and even every month, if persons could be found absurd enough to try the experiment. I may be told, that in many instances the arms will not take; and what then? Why simply they have not taken, not from any insusceptibility on the part of the system, but generally from carelessness in the process of vaccination; and they will take the next week if more carefully vaccinated; the not taking is no evidence of the security of a former vaccination. The only evidence on this subject arising from re-vaccination is, that the arm should take—that it should become more or less sore, in some instances very much so, and far more than from ordinary vaccination, but that its whole course is anomalous—that it is the result of an animal poison introduced into the cellular tissue, no longer capable of exerting its first specific, medicinal, or prophylactic agency, and now only occasioning a greater or less degree of local and constitutional disturbance, the effect of which is unmixed evil. Again, I would repeat that its course is wholly anomalous from its beginning to its close, and the result is invariably such an arm as no well-informed surgeon could pass as a satisfactory first vaccination. But if this be admitted, and it cannot be denied, there is no possibility of a renewal of vaccination, and the question is settled; and then re-vaccination is reduced to its proper position, as a test of the efficacy of a former vaccination; and in this way, and in this way

only, it may be useful where there is any doubt about the perfection of a fresh process; in all other instances it is utterly worthless.

As an exemplification of this position, I will relate the following facts. On the same day of May, I vaccinated, with the same lymph, the infant of a lady in my own neighbourhood, and re-vaccinated a young lady and gentleman, of the respective ages of 18 and 22. The arms were inspected by myself also on the same day, the fifth from vaccination. The first was a beautiful specimen of fifth-day vesicles, of a defined circular form, raised above the surrounding skin, which was unaltered in its appearance, and containing a perfectly transparent fluid; the re-vaccinated arms on the contrary presented no similar appearances, but ill-defined and irregular pustules, containing a small quantity of opaque fluid, their margin depressed instead of elevated—the surrounding skin being raised, thickened, hardened, and inflamed to a considerable extent: nor is this unusual; it has been the case in my own practice in hundreds of instances. The effect of re-vaccination is produced earlier than that of a first vaccination; its course is not exact and defined, but perfectly irregular; the vesicle is always misshapen; the surrounding skin is always inflamed from the beginning; and happy he who escapes the intense suffering often occasioned by the absorption of the poison into the surrounding cellular membrane, and the irritation of the neighbouring glands, and such an amount of constitutional irritation as is perfectly unknown in ordinary vaccination.

But again, this process is not only forbidden by science and observation, but it is useless in effecting a renewal of vaccination: this will be shown by the following case.

At his own earnest request, Mr. James Baker, æt. 24, was re-vaccinated in January, 1845, by my partner Mr. Sloman; the effect upon the arm was very decided, and though not very severe, was just such as is usual in the great majority of re-vaccinated cases. He was perfectly satisfied with (as he considered), this renewal of the prophylactic influence; but was seized with symptoms of small-pox, on the 23d of March. The case ran the usual

course of modified small-pox; but not only was it unmarked by any peculiar mitigation of symptoms, but the eruptive fever was considerable; there was a great degree of irritability of stomach, and some delirium for two nights; the crop of pustules was large, and altogether it was one of the severest cases of small-pox after vaccination which was brought under my own notice. Nevertheless the modifying power of vaccination was exhibited even here, in all its essential particulars. But the question soon comes, what did the patient gain by re-vaccination? Absolutely nothing, for it was one of the severest cases of modified variola. Admitting that he was one of those individuals who could not have been placed in shelter from small-pox, still there was the distinct influence of vaccination, but that influence was not greater or so great as in those who had not been re-vaccinated! What then was gained? Surely, with such facts and such reasonings, we must abandon re-vaccination except as a test of the efficacy of a former vaccination. The only mode of evading the force of the above argumentation is by assuming that the patient thus ill after re-vaccination, would have been much more ill but for this renewed protective influence, and reasoning that therefore the process was useful. It would be useless to waste time upon a serious refutation of such reasoning; and of the reasoner we can only piously drop the votive words, "*naviget ad Anticyram.*"

I should also mention one other fact which has been repeatedly brought before me during the recent epidemic, viz. that small-pox after vaccination has occurred at every period of interval from that process, between one month and 35 years; and that I have been unable to discover any thing like a degree of severity commensurate with this interval; on the contrary, the severity has always borne a proportion to the character of the constitution, and the peculiar temperament, and the way in which it has been previously affected, by some other of the specific diseases of the skin.

With regard to the fever, said to be the only true criterion of a first successful vaccination, as it appears on the seventh and eighth day, I must be permitted to say, that it will be looked

for in vain; an accurate observer will always distinguish a genuine from an unsatisfactory vesicle, and if its progress throughout be perfectly regular he may be satisfied. In conducting his observations, nurses will tell him that the child has been rendered ill from vaccination on the second or any other impossible day; but if he rely upon his own observations, he will sometimes find febrile movement difficult of detection, and confined to one twenty-four hours, these forming generally a portion of the ninth and tenth days.

There are many other points of great interest with regard to vaccination, on which I see the most absurd notions put forward, and supported by great names, but careless observers—notions alike unsupported by reason or fact; but my intention in the present paper was to confine myself to re-vaccination, and I have already trespassed too long upon your attention.

W. NEWNHAM.

Farnham, June 19th, 1845.

MODE OF PROTECTING WORKMEN FROM THE EFFECTS OF LEAD. BY M. MEILLET.

A TINNED iron mask is fitted to the face, and a cylindrical tube is attached to it opposite to the nose and mouth: in the interior of the tube there is a metallic net-work, above which is a fine sponge saturated with a very dilute solution of hydrosulphate of soda. The sponge is so placed as entirely to fill the cylinder, it is fixed by means of a cover also furnished with a metallic net-work; the air being thus compelled to traverse a body saturated with a liquid, which decomposes the salts of lead. All the lead vapours remain behind in the state of sulphuret. This salt is slowly and uniformly decomposed by the carbonic acid, which is always abundantly present in these manufactories. The workmen thus respire throughout the day an extremely small quantity of sulphuretted hydrogen, which of all substances neutralises the effects of lead most effectually. M. Meillet also recommends that the hands should be well rubbed with an ointment, containing thirty grammes of hydrosulphate of soda to a pound of lead; the hands then wiped. These means have been tried by the advice of M. Meillet in many shot manufactories, and the results have been most satisfactory.—*Gazette Médicale*; and *Bulletin de la Société de Médecine de Poitiers*.

MICROSCOPICAL OBSERVATIONS ON THE NERVES.

BY PROFESSOR PURKINJE.

Translated from Müller's Archiv. für Anatomie, Physiologie. und Medicin, 1845.

BY WILLIAM W. GULL, M.B. L.M.

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IN the summer of the year 1838, whilst making a more extended trial of the value of acetic acid, first introduced by the younger Burdach, for the purpose of rendering very delicate nervous fibres visible, I instituted a set of observations upon the proportion of such elementary fibres in the different tissues. These observations, at the request of several of the Professors of the University of Cracow, were sent to the Annual Report of the Faculty of Medicine, in which they were printed in the year 1839. It seemed to me, however, that the remarks there contained had not received the publicity which they deserved. A part of them appeared in a small pamphlet by Dr. Benedict Schultz, "On the Physiology of the Spinal Cord in relation to its Pathological conditions." Vienna, 1842. The remainder received but a slight notice. I have therefore thought it might not be superfluous if I again communicated from the Cracow Report these observations to the philosophical world at large. If I have here and there introduced known facts, or negative results, it must be borne in mind, that, in giving an historical sketch of the value of acetic acid in microscopical investigations, I was obliged to mention when its employment was, or was not, successful.

Contributions to the Microscopical Anatomy of the Nerves.

One of the most recent and valuable discoveries for the microscopical anatomy of the nerves, is the more extended introduction of dilute acetic acid by the younger Burdach. This acid has the property of making the cellular and fibrous tissue very transparent. Accordingly, fat, the different secreting cells of glands, elastic tissue, arterial capillaries, and, above all, the finest nerve fibres, if surrounded by cellular tissue, become remarkably distinct by its use. Burdach first used it

to make the cutaneous nerves of frogs visible; this induced me to employ it for tracing the cutaneous nerves in man. As it did not, however, answer my expectations, I directed my attention to other membranous tissues, and amongst these, to the pia mater of the spinal cord of the ox. If, from a portion of fresh spinal cord, we carefully dissect off the fibres of the arachnoid, taking care not to injure the dentate ligament, and tear or cut away the nerves from their roots, lay open the pia mater longitudinally, and turn out the cord carefully with the handle of a scalpel, we may obtain the whole fold of the pia mater, and spread it upon a plate of glass; if now a small quantity of dilute acetic acid be poured upon it the membrane becomes transparent, and a most beautiful network of the finest nerves presents itself to the naked eye.

If the membrane be examined microscopically, the fibres appear in part to be bundles of extremely fine elementary filaments. In the larger branches from thirty to fifty such filaments may be counted in one fibre; in general, however, their number is not more than from two to three. The filaments of a compound fibre pass out, form loops, and return back, or join an adjacent fibre; sometimes, though rarely, a filament seems to be lost in the tissue of the membrane itself. The largest fibres run near to the anterior spinal artery, which they in part surround; from this plexus filaments pass into that fold of the pia mater which dips into the anterior fissure of the cord, and there spread out, forming loops. Near to the dentate processes, also, large fibres may be seen, which, upon the whole, run longitudinally, except where these processes pass out to be attached to the dura mater; here the nerves take an outward course, quickly, however, to return again, and assume the longitudinal direction. At the points of origin of the anterior and posterior spinal nerves where the pia mater is very thin, the fibres are smaller and fewer in number.

Compound fibres exist upon the posterior part of the membrane, but, upon the whole, this surface is not so well supplied with nerves as the anterior, nor are the fibres so large. In relation to the longitudinal direction of the

cord (in the lower animals), the largest number of nerves are found at the anterior part, and where the cord is long, the most numerous compound fibres have an oblique direction; at the posterior part their number is less, and their direction more longitudinal. It is difficult to determine the origin of these fibres, which belong to the vegetative system. A part of them are connected with the delicate coverings of the spinal cord by the anterior, and others by the lateral spinal arteries, which pass in pairs through the spinal foramina. In both cases they appear to arise from the sympathetic system. This nervous plexus of the pia mater of the cord is associated with a similar one, which, in connection with the small arteries, passes to the pons varolii, forming plexuses around the vessels, the free surface of the pons varolii, and the surface of the cerebellum.

I have not succeeded in finding a connexion between the nerves of this kind and the roots of the cerebral or spinal nerves, which, if they existed, would be easily discovered, as the filaments of the plexus above described are not more than one-half, or one-third, as large as those comprising the fibres of the cerebro-spinal system.

One cannot suppose that these nerves do not as much belong to the pia mater of the cord as to the arteries of this membrane which they accompany, for had they no such relation they ought to be constantly found in the immediate vicinity of the vessels, and to increase in proportion to the diameter of the arteries. This distribution obtains, however, only so long as the arteries do not come in contact with the cord; for in their further course the nervous fibres pass off from the vessels, and distribute themselves independently in longitudinal plexuses upon the outer surface of the spinal membranes. This distribution is remarkable in the dentate processes, in which there are but few vessels, and where nevertheless the nervous filaments are numerous. With regard to the independence of these nerves, may be adduced the fact, that although they pass into the canal only few in number, in their course they increase, and become much more numerous in proportion to the vessels, which may be well seen in the arteries of the brain, where

the original fibres which surround the vessels are distributed with them to their minutest ramifications.

In order to assign the proper position to the nerves of the pia mater of the cord, it seems to me necessary to premise several classes of nerves.

1. Cerebral and spinal nerves, with coarse elementary filaments.

2. Cerebral nerves, with fine filaments (ophthalmic and acoustic).

3. Ganglionic nerves, with fine filaments, without granular tissue.

4. Ganglionic nerves, with fine filaments, with granular tissue.

These different nerves may be found either separate or mixed. The system we have been describing in the pia mater of the cord belongs to the third of the above divisions. We may hereafter be able accurately to determine their connexion with the sympathetic. With regard to their composition, therefore, we say they belong to the class of nerves with fine fibres unmixed with granules. If, by a continued application of acetic acid, granules become visible, they belong either to the neighbouring pia mater, or they are artificially produced by a partial contraction of the sheaths of the nerves. Similar fibres, without granules, but mixed with granular fibres, are found under the serous covering of the heart.

The function of this nervous plexus appears to me to be allied to sensation. It may be a guard for the preservation of the normal conditions within the spinal canal. From the connection of the processes of the ligamentum dentatum to the dura mater, the cord participates in the motion of this latter and of the vertebræ. Whether it has any reference to the nutrition of the cord, or to the tension of the spinal fluid, remains yet unknown. Does it serve for the preservation of the necessary degree of temperature in the parts surrounding the spine, the diminution of which produces chilly sensations? Does a vital metamorphosis of the blood for the nutrition of the cord depend upon it? Does there occur, between this system of nerves and the fibres of the cord, a dynamical interchange, such as is admitted to exist between the portio dura and the fifth pair? Or are all these conditions united for a unity of function?

It seems we are yet far from a solution of this question, and not only so,

but perhaps in none of these queries is the question proposed, which remains to be answered by further observations. On extending my investigations from the nerves of the pia mater of the cord to the cerebellum and brain, I found that the cerebellum was provided with similar nerves, though fewer in number, and unconnected with the arteries. Over the pons varolii they seem to belong exclusively to the arteries; this last arrangement also exists in the brain. In the vascular plexuses of the lateral ventricle there are no traces of such nerves. I have often observed, shining directly through the epithelium on the corpus striatum and the thalamus opticus of the human brain, white fibres, which I have regarded as delicate nervous cords, but as yet I have not determined accurately whether they are so. There is one part of the brain where such fine nervous filaments may be constantly seen; it is in the whole circumference of the vena magna Galeni. At that point where it is formed by the two lateral veins of the plexus, it becomes richly surrounded by a tissue of these nerves, which passes into the fibrous structure of the tentorium cerebelli, and seems to belong more to this than to the venous vascular system. It would be worth the trouble to determine whether other venous trunks which empty themselves into the sinuses are similarly surrounded: that the dura mater is supplied with nerves, the older anatomists, Valsava, Winslow, Paccioni, Petit and others, and more recently Arnold and Bidder, have endeavoured to show. According to Arnold the nerve of the tentorium comes from the first branch of the nervus trigeminus,—this statement was also maintained by Schlemm; according to the more recent investigations of Arnold, one of the nerves of the dura mater comes from the fourth cerebral nerve: this last opinion is confirmed by Varrentrapp and Bidder, who in return contradict the other statements of Arnold. The most probable opinion, as it seems to me, and one to which Bidder, I think, inclines, is, that all the nerves of the dura mater take their origin from the sympathetic system, and that the connexion they have with the cerebral nerves must not be considered as their peculiar points of origin. According to my own observa-

tions, the largest compound fibres are constantly found at those points where the trunks of the arteries enter the dura mater; they run for the most part indeed with the arteries, yet they occasionally pass off from them, and spread out alone in the membrane, whereby the assertions of the earlier anatomists find their confirmation; but I would guard myself from expressing anything decided upon this matter. I examined the dura mater of the sheep, calf, and ox, and of the adult and of the infant human brain. I must here remark, that these fibrous membranes in young subjects do not become so transparent by the use of the acetic acid as in full-grown individuals. Doubtless, these tissues have a different relation to water, which in part is free in them, and in part exists as a hydrate. It is also of the utmost importance that the parts examined be fresh; the least commencement of decomposition makes them less transparent under the use of the acid: spirit of wine, and solutions of common salt, also diminish the transparency. If the part has been preserved in salt and water, it must be carefully washed previous to applying the acid; it may, however, be preserved with least detriment in water to which has been added a small quantity of vegetable acid. As the dura mater is every where thicker and more dense than the pia mater of the cord, (which otherwise in its tendinous appearance is very like it), it is necessary to employ a concentrated solution of the acetic acid to make it translucent, but at some places where it is thinner the acid employed must be diluted, otherwise the fine nervous filaments will be so much changed by contraction as to be invisible.

My observations shew that especially the oblique sinus and in the base of the tentorium to the base of the skull, a very rich network of nerves is spread out, which, when viewed with acetic acid, becomes very visible to the naked eye or by the aid of a magnifying power. If points of this manner all the way to the conclusion, we must come to the conclusion that the largest collections of the nerves are to be found close to the arteries, and in the pia mater, and they enter this very difficult

to trace them running with the arteries back to their origin in the sympathetic system. In the dura mater of the spine I have not found a trace of nerves. By means of the acid, I have, however, succeeded in finding a system of organic nerves in parts where previously they had not been conjectured to exist, and whose physiological and pathological importance will be at once recognised.

[To be continued.]

APPARENT ABSENCE OF CONSTITUTIONAL DISTURBANCE IN CERTAIN CASES OF CANCER UTERI.

WHATEVER may be the origin and causes of cancerous degeneration of the womb, the first symptoms of the disease generally escape the attention of the physician, who is very rarely consulted until extensive disorder already exists. Moreover, the derangements which women experience at the beginning are so slight, that they themselves, pay no attention to them, and it may happen also that the disease shall attain a very advanced stage without any precursory symptom to cause its presence to be suspected. There are, in fact, young, fresh, and brilliant women, appearing to have all the attributes of perfect health, in whom cancer has taken deep root, and in whom the uterus is reduced to the state of a putrid slough, presenting a mere foetid cloaca. We have seen cases of this kind, and several modern authors—among others, MM. Lisfranc, Récamier, Paulty, Técalier, &c.—have published examples of them.—*Meigs' Translation of Colombat on Diseases of Females.*

MITIGATION OF THE SYMPTOMS IN FATAL CASES OF TETANUS.

WHEN cases of common tetanus are to become fatal, we do not find the paroxysms grow less frequent, but they become apparently milder, and, on the contrary, when the patient is recovering, the intervals between the paroxysms are lengthened, but the violence of the last paroxysm that man may have may be as great as that of any of the preceding ones. Sometimes on visiting a patient he tells you he is better—he is now able to put two fingers between his teeth, whereas a little while ago he was only able to put one; he feels himself better, his jaw can be opened more, and his limbs are more flexible; his friends meet you with a smiling countenance, and every thing is congratulation—now, what are you to expect? Why, that the next paroxysm the patient gets will carry him off, the very next paroxysm will certainly be the fatal one.—*Professor Colles' Lectures.*

ON THE DIGESTION OF VEGETABLE ALBUMEN, FAT, AND STARCH.

By ROBERT D. THOMSON, M.D.

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University of Glasgow.*

[Concluded from p. 975.]

PART II.

BEING thus foiled in corroborating the deduction of Blondlot, that phosphoric is the free acid of the stomach, it was requisite to look out for another source of the acidity of the gastric fluid. It was therefore necessary to test the muriatic or hydrochloric acid theory, as propounded by the sagacity of Dr. Prout.†

The contents of the stomach of a pig which had been fed on porridge two hours before being killed, were mixed with cold distilled water and filtered. Six fluid ounces of this fluid, which was quite clear and limpid, were introduced into a retort and distilled in a water-bath. The distillation occupied several hours; three ounces of fluid were distilled over, which possessed the peculiar smell of such fluids, and reddened infusion of litmus slightly. The three ounces of fluid remaining in the retort had a strongly acid reaction, and gave no appearance of acetic acid on the addition of chloride of iron. From twelve ounces of another portion of the same gastric fluid, four ounces of fluid were distilled over by the heat of the water-bath, which presented the same characters as those of the distilled fluid just described; but in neither instance could a trace of hydrochloric acid be detected by nitrate of silver.

With the liquor remaining in the retort, three experiments were made to determine the possible amount of free hydrochloric acid, on the supposition that the preceding experiment did not serve as evidence to prove the impossibility of its presence. Three equal portions of the fluid were measured out, to the extent of two fluid ounces in each portion.

1. To the first portion, a solution of nitrate of silver was added until a pre-

cipitate ceased to fall; pure nitric acid was then mixed with the liquid, and the temperature raised to the boiling-point. The precipitate was filtered, washed, and weighed.

2. The second portion was evaporated to dryness and ignited; the residue was dissolved in water and precipitated by nitrate of silver, the solution being acidulated with nitric acid and brought to the boiling point.

3. The third portion was exactly neutralized with caustic potash, evaporated and ignited; the residue dissolved in water, and the solution precipitated by nitrate of silver.

The results of these experiments are indicated in the following table in grains:—

Experiments.	Weight of Chloride of Silver.	Weight of Chlorine.	Weight of Hydrochloric Acid.
1st.	7.81	1.95	2.00
2d.	7.17	1.79	1.84
3d.	7.97	1.99	2.04

The atomic weights here employed are Dr. Thomson's:—

Oxygen . . .	=1.
Hydrogen . . .	=.125
Chlorine . . .	=4½
Silver . . .	=13½

The correspondence between the first and third experiments shows that in the first no organic substance had been in union with the silver, which was precipitated by chlorine alone, and that there is no evidence from these results of free muriatic acid being present. The conclusion is the reverse, since if any free muriatic acid had been neutralized by the potash the third experiment ought to have given an inferior quantity of chloride of silver, because the sal-ammoniac ought to have been sublimed. The potash which was added, I conceive, in the third experiment, united with an organic acid; the salt formed was decomposed by incineration, and the potash united with the chlorine previously in union with ammonia; for that sal-ammoniac volatile muriate was present proved by the second result.

It is well known that similar experiments demonstrate that free hydrochloric acid was present in the stomach. The distinguished chemist, who has described the first experiment, has made it out. Indeed, he could not have made it out successfully under the circumstances.

* From the London, Edinburgh, and Dublin Philosophical Magazine, and Journal of Science, for May 1845.

† See Phil. Mag. S. 2, vol. iv. p. 3 and 120.

in which he operated, because the gastric juice in his experiments was not exposed to a heat that could coagulate and separate the albuminous matters, which would then have combined with the oxide of silver and have complicated the result. In the gastric juices employed in the preceding researches, however, nothing was present but soluble starch or dextrin and sugar, which formed obviously no compounds with silver, insoluble in boiling nitric acid. It is possible, therefore, in the experiments of Dr. Prout, who determined the total amount of chlorine in the gastric fluid by supersaturating with potash, igniting and precipitating with nitrate of silver, that he had formed cyanide of potassium, which would precipitate cyanide of silver along with the chloride, unless the precaution were taken not merely to add nitric acid, but to boil the solution after the addition of the acid, since cyanide of silver is insoluble, or, at least, not wholly decomposed by cold nitric acid. I offer this explanation, originally proposed by Leuret and Lassaigne, because from my knowledge of Dr. Prout, I am quite certain his experiments were most accurately made. Indeed, the testimony of all succeeding experimenters who have obtained the same results is sufficient to establish his accuracy without the addition of any confirmation on my part. It is even possible that, in cases where the food is different, the acid may be of the nature described by Dr. Prout.

The experiments which have been detailed seem to demonstrate that no free hydrochloric acid existed in the

stomach of the animal, under the circumstances described, since no acid could be distilled over at a temperature greatly above that at which this acid boils when sufficiently concentrated, while the fluid in the retort became more intensely acid in proportion as the distillation proceeded. A portion of the liquid from the retort was evaporated to dryness and heated to a temperature exceeding 300° without giving out acid fumes; the residue was digested in water, and still retained an acid reaction. The solution of the residue was easily saturated by carbonate of lime, and was not precipitated by chloride of calcium, indicating the absence of biphosphate of lime (contrary to the views of Blondlot), and likewise of free sulphuric acid.

In another experiment the gastric juice was evaporated to dryness in the water-bath, and treated with alcohol and oxide of zinc with the necessary precautions: prismatic crystals were obtained corresponding with lactate of zinc, but in too minute quantity to admit of analysis, the only demonstrative argument. The preceding experiments appear to show, however, that the free acid of the stomach, in the digestion of vegetable matter at least, of all the known acids, alone corresponds with the lactic. To determine the nature of the volatile acid, which, however, appears to be present always in minute quantity, a portion of gastric fluid was distilled, and the product was obtained in three distinct receivers. Their characters, as determined by infusion of litmus, were as follows:—

1st product of distillation amounted to	1 oz.
2d " " "	1½ oz.
3d " " "	1 oz.

Infusion of litmus.

1. bright red colour.

2. paler than preceding.

3. slight red colour.

From these observations, it would appear that the greatest amount of volatile acid was carried over at the distillation, and that as the distillation proceeded, and that as the distillation gradually diminished, indicating that the acidity waned, indicating that the action of lactic due to the decomposition of starch, but its eduction by the acetic acid. to the presence of however trifling quantity present was product of a lactic the distilled fluid could never. amount of gastric of effervescence. acted in a state bonate of soda. dition of car-

Dextrin and Soluble Starch found in the Stomach in the Digestion of Starch.

—I have already stated in a previous part of this paper that I was unable to detect any traces of starch in the serum of the blood. It was therefore necessary to return to the stomach, and to observe the chemical changes to which the starch was subjected in that viscous. When an animal is fed on porridge, if water be added to the contents of the stomach, the mixture well stirred, and then allowed to stand at rest, the supernatant liquor produces a blue colour with tincture of iodine; but if the

the barytes solution. Yeast being mixed with the serum, the connexion between the flasks is established, and the whole apparatus placed in a warm atmosphere (700). Fermentation speedily begins if sugar is present, and the carbonic acid as it passes over precipitates the barytes in the form of carbonate. In twelve hours the action will be at an end; the flask containing the serum is then to be heated to carry over any CO_2 which may remain in its atmosphere by means of vapour. I prefer this method to using a safety-tube in the second phial, because it is difficult to wash off the carbonate of barytes which is apt to adhere to the ends of the tubes.

	520.27	grains of serum gave
	.68	" carbonate of barytes.
equivalent to	9.01	" per pound,
"	4.19	" sugar

and estimating the quantity of blood in the human body at 24 pounds, by the first experiment we should have 61.68 grains in the sanguineous circulation, and by the second 100.56 grains. A pound of urine in diabetes I have found to contain 14.361 grains of sugar. Whether the sugar is burned in the lungs and capillaries, or is previously converted into fat by the agency of the casein of the blood, it remains of course to determine; but the experiments of Pelouze have shown us how this may be effected; and the present determinations seem to form a collecting link between starch and fat, which render the views of Liebig, in reference to the supply of animal fat being derived from starch, still more plausible than was at one time suspected.

The experiments detailed in this paper appear to lead to the following conclusions:—

1. That vegetable albuminous matter and fat when digested can be detected in the blood.

2. That if any free hydrochloric acid exist in the stomach of animals during the digestion of starch, the quantity must be so minute as to be scarcely appreciable.

3. That an acid exists in the stomach of animals fed on starch, which corresponds more nearly with lactic acid than with any other known acid.

4. That dextrin and soluble starch exist in the stomachs of animals which

The carbonate of barytes is then to be thrown on a small filter covered with a plate of glass, washed, ignited, and weighed. Every 49 grains of it are equivalent to 22.5 of sugar existing in the blood.*

By means of this process, I found that the serum of a pig, which had been starved for at least twelve hours, then fed on porridge and killed three hours afterwards, afforded by the fermentation of 1000 grains .80 carbonate of barytes, = 5.6 grains per pound, or to 2.57 grains of sugar.

In another experiment the serum of the pig was employed from whose stomach the soluble starch was extracted.

have been fed on farinaceous diet during and for some time after digestion.

5. That sugar exists in the blood of animals which have been fed on starch. And

Lastly. It is hoped they have in some measure contributed to throw a ray of light upon the important function which starch fulfils in the animal economy.

SALT-MINE, CARDONA, SPAIN.

THIS celebrated mine lies below the town. It is an absolute mountain of salt, emerging in a jagged outline, nearly 500 feet high. The salt deposit differs from that of Minglanilla in being on the surface. The salt pinnacles shoot forth from a brownish earth, like a quarry of marble dislocated by gunpowder. They are inexhaustible, and are admirably adapted to the indolent owners, as requiring no other labour beyond taking what Providence has prepared for them. The colours of these saline glaciers vary extremely, and are brilliant in proportion as the weather is clear. When the sun shines, they look like stalactites turned upside down, and are quite prismatic, with rainbow tints of a red and blue colour.—*Murray's Spain*.

* The results contained in this paper were communicated to Professor Liebig in September 1844. He then suggested the mode of detecting sugar by means of bile and sulphuric acid. I found this test to be ambiguous, as sulphuric acid alone produced a red colour in diabetic urine and in other animal fluids.

MEDICAL GAZETTE.

FRIDAY, OCTOBER 17, 1845.

THE Poor Law Commissioners have lately issued their Eleventh Annual Report, which contains, among other matters of professional interest, some remarks on the scale of remuneration adopted for the salaries of the medical officers of Poor Law Unions, and on the inexpediency of increasing these beyond their present amount. Certain transactions which have come to light respecting the conduct of a medical officer of the South Dublin Union, have indeed been made use of by the Commissioners, as an argument for shewing that the present rate of remuneration is too high, and that the salaries may admit of reduction!

It appears from the Report, that the great difficulties experienced in enforcing the general Medical Order of March 1842, have principally arisen from one of the three following subjects—1. The qualifications of the medical officers; 2. The maximum amount of the area and population of medical districts; 3. The rates of payments for medical officers in certain surgical and midwifery cases. In several unions it is admitted the rates of the surgical and midwifery fees have created great dissatisfaction; “but these payments are now generally acquiesced in, since the Boards of Guardians have learnt by experience, that the increase of expenditure, and the various evils which they anticipated from the introduction of the fees in question, have not in fact been produced.” The following is the amount of the expenditure for medical relief in each year since 1838,—a large sum when taken in the aggregate, but easily subdivided, as we know it to be, into a number of small salaries:—

Years ending Lady-day.	Amount of Medical Relief.
1838	£136,775
1839	148,652
1840	151,781
1841	154,054
1842	152,006
1843	160,726
1844	166,257

The amount, it will be seen, has gone on gradually increasing, but probably in no greater ratio than the annual increase of the pauper population.

The Commissioners profess that in regulating the remuneration for medical relief, their object has been to secure to the medical officer such a payment as would enable him to discharge his duty to his pauper patients, and to furnish them with proper medicines. From what we have heard of the salaries paid to certain medical officers in rural districts, we much doubt whether this object has been attained; and if the medical officers have discharged their duties to the pauper patients, and furnished them with proper medicines, they must not only have expended the amount of their salaries, but something more. The truth we believe to be, that conscientious men, long resident in the district, have often been induced to accept these offices at a loss, well knowing that in the event of their declining to act as parochial medical officers for the salary recommended by the Commissioners, and adopted by the Guardians, some young and less scrupulous member of an overstocked profession, would immediately accept the office as a stepping-stone for practice. The experiment has been tried, and in some instances it has been attended with results which might have been anticipated; the pauper patients have been neglected, and they have been allowed to die either through the incompetency of the appointed officer, or from his not feeling himself called upon to give up his private

practice for an ill-remunerated attendance on the poor. In the latter case, we grant that a medical man is not justified in accepting office; but, on the other hand, the Poor-Law authorities are as little justified in fixing the amount of salary so low as to make the acceptance of it, under a proper discharge of the duties attached to it, a loss to the medical officer. The great secret of the nature of these appointments is, however, developed in the following sentence: "In fixing this amount (*i. e.* of medical salary), it is necessary that we should keep in view the value at which the services of a medical man are attainable for this purpose, under the existing circumstances of the profession." It is contended that if the Commissioners were to attempt, by their regulations, to fix the salaries of medical officers at a rate higher than that at which competent medical men are willing (compelled?) to accept the office, and perform its duties, the result would be, that the medical offices of unions would become the subjects of sale, more or less concealed, and the pauper patients would derive no benefit from the excessive (!) payment. We here fall back upon the old argument of taking advantage of the necessities of an over-stocked profession. Under "the existing circumstances of the profession," *i. e.* where many hundreds are provided with diplomas without practice or the remotest expectation of obtaining any, the value at which the services of a medical man are attainable, may be represented by the algebraic quantity — x . We lately heard that there was a fierce struggle among a number of University graduates with their M.D. diplomas, for the office of surgeon in a South-sea whaler; and that one doctor of medicine succeeded in obtaining the appointment, and re-

garded it as a victory over his fellow-candidates! The "existing circumstances of the profession" have in fact within the last few years reached almost the zero of starvation for a large number who are duly licensed. A vacancy in an honorary appointment to the most obscure dispensary, in a third-rate country town, becomes a life-and-death struggle — a perfect *iotromachia*; and for weeks before the election takes place, the public journals are inundated with advertisements and testimonials of qualification, with protestations that the advertisers intend to devote all their energies to the faithful discharge of the duties attached to the high and responsible office, &c. for which they are candidates! If a captain of a ship advertises for a surgeon without salary, the office is at once seized with eagerness as a means of obtaining temporary subsistence, or procuring a passage to a foreign country. A skilful captain, by imitating the example of the Poor Law Commissioners, in taking advantage "of the existing circumstances of the profession," may thus provide his crew with medical advice on the outward and homeward voyages, at a very small outlay; and many have availed themselves of this liberal plan, of thus cheaply obtaining the services of medical men!

We must, however, protest against this method of dealing with the medical profession. The system of tender in the appointment of medical officers to Poor Law Unions, may furnish a very good estimate of the degree to which the medical profession is now overstocked, and at what an easy rate medical advice may be obtained; but it is a pure delusion to suppose that those who accept these salaries are always in a position to discharge their duties to the pauper patients or to furnish them with proper medicines. If

the same system of tender were adopted with respect to an Assistant-Commissionership under the Poor Law, we have not the slightest doubt that many persons would be found willing to discharge the duties of the office for one half of the salary at present attached to it. We even go so far as to believe that *competent* men would be found willing and able to discharge these duties at a lower rate of salary: but in some way or other, the Commissioners appear most unwilling to apply to the remuneration of medical men, the rules which are applied to themselves. In the case of a medical officer, it is alleged, certain abuses might follow by fixing the salary above the market value:—in the case of an Assistant-Commissioner no danger of this kind is to be apprehended! This interested argument is apparently supported by a solitary case of misconduct, to which we shall revert on a future occasion.

WE regret to announce that three deaths have taken place from this formidable disease since our last. Both the medical officers who nobly volunteered their services at Madeira, have been attacked, and one of them, Mr. Sidney Bernard, has died. The other, Mr. Coffey, according to the latest accounts which we have seen, was going on favourably. Lieut. Isaacson and the pilot, Mr. Saunders, who brought the vessel round from Portsmouth, have fallen victims to this fearful malady. The highly contagious character of this fever, so far as Europeans are concerned, is strongly shown in the facts—1. That so many medical men, entering the ship at different places, have been attacked, and four have already died. 2. That the coast-pilot was speedily carried off by an attack. 3. That Dr. Rogers, who volunteered his services at Stangate Creek, was seized on Sunday, but is, we are glad to hear, progressing favourably. The period of in-

cubation for the transmission of this disease by human contagion is therefore very short; and the circumstances clearly show that a complete isolation of the sick is absolutely necessary.

It is reported that the African fever has broken out at Woolwich on board the Growler steamer, recently arrived from the coast of Africa. One man, it is said, was sent to the Hospital with the fever on Monday morning, and died on the evening of the same day. Seven men took the disease yesterday. The Growler has had frequent communications with the Eclair. The two surgeons, Mr. Bernard, who has since died, and Mr. Coffey, left the Growler, at Madeira, to join the Eclair, and take charge of the sick.—*Times*, Oct. 16.

Reviews.

The American Journal of Insanity.

Edited by the Officers of the New York State Lunatic Asylum, Utica. No. 4, Vol. I., and No. 1, Vol. II. April—July, 1845. Utica: Bennett, Backus, and Hawley.

WE used to imagine that no country was so prolific in medical periodicals as our own; but we find that, in respect of numbers, our American contemporaries have completely surpassed us. There are at present published in the United States fifteen journals solely devoted to medical science: the whole of these have sprung up since the year 1828; and several of their number have now attained a high standing and authority. While upon this subject, we cannot avoid observing, that as many of these journals as commonly reach our shores have two qualities which particularly deserve commendation—their contents are strictly medical, and are quite free from party discussions and individual squabbles; and their editorial remarks are uniformly characterised by moderation and courtesy.

The American Journal of Insanity (which appears quarterly) is a new candidate for popularity, its fifth part having appeared in April last. The Editors state, that “the object of this journal is to popularize the study of insanity; to acquaint the general reader with the nature and varieties of this disease, methods of prevention and

cure." They "also hope to make it useful and interesting to members of the medical and legal professions, and to all those engaged in the study of the phenomena of mind." This attempt is certainly a meritorious one, and we cordially wish it the success it deserves. The popular mind has long been too little favourable to those engaged in the treatment of mental disease: the impression of horror long ago created by the plan which formerly treated the unhappy lunatic not as the most afflicted and desolate of human beings, but as a savage and untameable wild beast, whom shackles and blows could alone control, has scarcely yet been dissipated by the benign system of Conolly and Esquirol—a system which must eventually raise its professors to the highest estimation as men of science and philanthropists. The Editors mention, that until within a few years there was no journal exclusively devoted to the subject of Insanity. Now there are three, viz.: one at Paris, the "*Annales Medico-Psychologiques*," another published at Berlin, and their own.

The two numbers of the American Journal of Insanity, now before us, are remarkably well edited; they are amply furnished with original essays and reports, the selections are apposite, and the editorial articles evince sound knowledge and a liberal spirit.

On the Nature, Causes, Prevention, and Treatment of Acute Hydrocephalus, or Water-Brain-Fever. By THOMAS SMITH, A.M., M.D. 8vo. pp. 168. London: Longman and Co.

DR. SMITH addresses his treatise to the public as well as to the profession; and while it contains enough practical and carefully-selected matter to render it worthy of the perusal of medical men, its very judicious and forcible remarks upon the management of children, and the conduct of parents, do great credit to the author's good sense, and should recommend his volume to general perusal. We of course should not give it this praise had we not found that it is free from unprofessional self-laudation, or charlatanism of any kind. It is precisely the sort of work that a well-informed physician is at liberty to place before the public.

The data upon the subjects of cerebral auscultation, and the statistics of

infant life, and the remarks upon the non-hereditary nature of hydrocephalus, are well arranged, and deserve a careful perusal.

The following is a fair specimen of the author's style of instructing his non-professional readers; it is taken from the chapter on "The Means of Prevention." "I would not wish to shock the feelings of any amiable parent, when I state that this pest to infancy (hydrocephalus) may frequently be traced to parental mismanagement. The flabby, serous, half-blooded, morbidly susceptible parents, daily keeping up and increasing their morbid susceptibilities, by late hours and luxury, often procure for themselves all the misery of hydrocephalic offspring. This is so far from being matter of conjecture merely, that it absolutely admits of proof. Parents who have lost two, three, or four children, consecutively, by this disease, have changed their medical man, from a natural hope that they might at length find a doctor more lucky or more skilful. Had they changed their own habits of life, it would have been more to the purpose. Examine the mother; she will be found to have been languid, reduced in constitutional powers, weak in the loins, and half her time drained by "les fleurs blanches;" and for the most part living a life of artificial excitement. Turn to the father; you will probably find him dyspeptic, yet high-feeding. A state of moral and physical calm is unknown to him. Day by day he hurries into business with a head scarcely cleansed by the swilling of two or three half-pints of hot coffee or tea. Anxiety and feverish restlessness mark his diurnal course. At length the evening comes. He dines out, or entertains his friends. Stimulation or preternatural excitement of a forced gaiety of spirits, with the noise and buzz of company, or the cogging and scheming of cards, with all the relaxing and absolutely poisonous effects of hot rooms, and fine and pestilential vapours, with a heavy supper and "something warm before bed," are the means whereby men do their part to prepare for the premature death,—I was going to say murder,—of their offspring, by an infanticide that no power can reach, short of the mighty hand of him who hath pronounced that "order is heaven's first

law."* These parents are not gross enough to get drunk. They escape both the stupor and delirium of Bacchanalian orgies. Still, however, they live with their blood in a perpetual state of heat, and their brains in a perpetual state of feverishness. They soon assume the pale visage which characterises high civilization; the thoughtful brow, the obscure severe gravity, alternating with the occasional grin of politeness, and the mixed expression of the cunning of the fox, not without the speculative ferocity of pursuit said to belong to another more formidable animal. See him" (the father) "plodding with baste through the streets, as if escaped from Gomorrah. This is your modern man of business; or rather, I would say, the man who does not know that it is his first business to see that he makes a good foundation for the future health and happiness of his progeny, by taking care of that most inestimable of earthly blessings in his own proper person."

If disposed to be very strictly critical, we might say that the above remarks are not altogether consistent with the author's observations, in another part of the work, upon the non-hereditary character of hydrocephalus; but we believe that the inconsistency is rather apparent than real. And, although in his style he now and then sacrifices elegance for force, we can well excuse the monitor who considers that these evils are too strong to be dealt with in very courtly phrase.

We read the whole of this boldly-written and sensible chapter with much pleasure; but we can scarcely hope that it will produce all the good impressions which the author intends, upon the class to whom it is addressed. Most readers consider these rough lessons more applicable to their neighbours than to themselves, and very few will be inclined to recognize in their own persons the "flabby, serous, half-blooded" individuals upon whose offspring all these evils are to be entailed; and so the bolt will often fail to reach its mark: but the author is not accountable for this; he cannot be expected to furnish his readers with both argument and understanding.

The following hint deserves attention: "Children whose cranial bones are

not yet closed, should never be weaned, so long as a wet-nurse can be procured; for within the first two or three days after being deprived of the breast, they are often carried off by convulsions."

The Power of the Soul over the Body, considered in relation to Health and Morals. By GEORGE MOORE, M.D. 2d Edit. 8vo. pp. 355. London, 1845.

It is less than four months since we announced the appearance of the first edition of this work, and within this short period a second edition has been called for. Some few additions have been made by the author. The work, however, retains that character which induced us to recommend it on a former occasion to all those who take an interest in the study of psychological phenomena. The reading of such a book cannot fail to benefit the minds of professional men, whether students or practitioners, and to create a healthy tone of feeling.

A Practical Treatise on Medical Electricity. By GEORGE THOMAS FISHER. London, 1845. Sm. 8vo. pp. 73.

OF late years the therapeutical effects of electricity have received much attention from medical men, and where a proper selection of cases has been made, very beneficial results have followed its use. Mr. Fisher enumerates upon the authority of others many cases of common nervous affections, in which electricty, either in the form of friction, sparks, shocks, or a continual current, has been attended with marked benefit. A novel application of this agent has been recently made to excite uterine action during parturition.* Medical electricity has, however, of late, fallen into some disrepute by its having become a medium for quacks to prey upon the credulity of the public. There is, we understand, a professor of the art now practising in the metropolis, who undertakes with a pair of galvanic wires to cure gonorrhœa or chancre, to reduce strangulated hernia—(one case of irreducible hernia he is stated to have effectually cured by a galvanic current)—and, lastly, to dissolve and remove from the bladder all kinds of urinary calculi!

* The quotation is not from Holy Writ.

* See a case by Mr. Cleveland in the present series, page 376.

There is nothing of quackery in this little pamphlet. It gives a short account of the various methods of employing electricity, and of the different kinds of apparatus used. These are now so numerous that a medical practitioner who proposes to employ this agent requires some guide-book, like Mr. Fisher's, to aid him in making a selection.

Hospital and Infirmary Reports.

BIRMINGHAM

QUEEN'S HOSPITAL REPORTS.

Case of Fracture of the Neck of the Radius.

By JOHN MOORE, M.R.C.S.E., late Resident Medical Officer.

EMMA LLOYD, æt. 27, was admitted under Mr. Knowles, into Adelaide Ward 1, on the 11th of January, 1844, in consequence of fracture of the lower jaw; she was discharged cured on the 28th of February following.

A few days before this patient left the hospital, she directed my attention to her left arm, which she stated "had been broken by a fall from a stool whilst working in a factory, about three years previously." The history she gave of the case was to the effect, "that both bones of the forearm protruded through the integument above the wrist;* that the arm was 'put up' in splints by a surgeon, and went on well, but that when the splints were finally removed, a deformity was present below the elbow-joint, which had not existed previously to her accident,† but has since continued to the present time." She cannot explain the position of the forearm at the time of the accident.

The appearances presented by the arm were as follows: just below the elbow-joint, on the radial side of its anterior aspect, the integument was raised into a sharp projection, the position of which was altered by the different movements of the forearm; upon manual examination the protuberance was found to be formed by a long process, which could be traced inwards and slightly upwards for about an inch and a quarter, and terminated in a rounded expansion in the natural situation of the head of the radius. Upon tracing the radius from the

wrist upwards, it was discovered to be united, nearly at a right angle, with the inner portion of the transverse process above described, and by keeping the finger upon the point of junction, and rotating the forearm, both were perceived to move simultaneously. The motions of the forearm could all be readily effected, but perfect flexion and extension of the fore upon the upper arm were both productive of pain.

REMARKS.—The above case, evidently one of fracture through the neck of the radius, is interesting by reason of its rarity, which is so great as to have elicited the following observations from Sir Astley Cooper. "It is an accident which I have never seen, and if instances do occur (which I do not mean to deny), they must be very rare."* Mr. Parker, one of the surgeons to the Queen's Hospital, has, however, related to me a case he had attended, in which the radius was not only broken through its neck, but the head also drawn considerably above the elbow-joint, by contraction of the "biceps" muscle: reduction was accomplished, and the case did well.

In the case of Lloyd, the appearance of the arm alone,† especially when rotated, almost sufficed to demonstrate the nature of the injury, which surgical manipulation could not fail to detect. The fracture appeared to have commenced just inferiorly to the insertion of the biceps tendon, and to have extended upwards and backwards through its neck; this oblique nature of the fracture admitted of a more satisfactory termination than could otherwise have been effected, as of course a smaller space existed between the inferior portion, and the semi-dislocated head of the radius, than would have been present had the bone been severed transversely.

The patient accounted for not having earlier perceived that she had sustained an injury to the elbow, by stating, that, on the occurrence of the accident, she fainted, and continued very faint until after the dressing was completed. As the muscular system would be naturally relaxed by a state of syncope, it is probable that displacement of the head of the radius (by contraction of the "biceps"), and deformity consequent upon it, did not take place to any extent until reaction had been established; and to this circumstance, coupled with the existence of a serious *palpable* lesion to the wrist, may be ascribed the non-discovery by the surgeon of the more unusual injury.

* A cicatrix is visible on the anterior part of the forearm, but on the ulnar side only.

† The surgeon's attention had *only* been directed at the time of the accident to the injury in the neighbourhood of the wrist-joint.

* Treatise on Dislocations and Fractures, &c. Eighth Ed. 4to 1832. p. 345.

† I have by me a plaster cast of the arm, in which the deformity is well shown.

Correspondence.

NOTE FROM DR. MERRIMAN TO DR. LEE.

DEAR DR. LEE,—Whether owing to my own carelessness in transcribing, or to the mistake of the printer, a very important error is committed in the *tabular* statement of placental presentations, the column intended for "Mothers alive," being headed "Mothers dead," and *vice versâ*; thus it appears that in 89 cases of placental presentation 67 mothers lost their lives, and only 22 recovered, instead of the exact contrary.*

In the letter-press the statement is in all respects correct, but the table will perhaps be looked to, and the letter-press not be read.—I remain, dear Sir,

Yours very truly,

S. MERRIMAN.

34, Brook Street, Gros. Sq. Oct. 11th, 1845.

[Our attention had already been called to the serious error referred to by Dr. Merri-man in the above letter, which is of the greater importance, as much of the discussion relative to treatment in placental presentations, turns upon the accuracy of statistical tables. The correct statement of the case, is, that during an obstetric practice of upwards of fifty years, Dr. Merriman has met with *seventy-eight* cases in which turning was sooner or later performed, and out of that number *nineteen* mothers died. This is in the ratio of one death in 4.1 cases, or a mortality of very nearly 24.36 per cent. In the whole number, *i. e.* *eighty-nine* cases of placental presentation, *twenty-two* mothers died. This is in the ratio of one death in 4.045 cases, representing a mortality of 24.72 per cent.—ED. GAZ.]

THE SHAPWICK MURDERS.

SIR,—I am sure you did not intend to give pain to anybody; but the observations in your leading article of last week on the Shapwick murders touched me to the quick. I am the surgeon who was examined at the inquest on the first of those cases. From the evidence adduced, I saw no reason to suspect foul play; the symptoms preceding the death, as described by witnesses, were similar to those which often occur spontaneously, and a verdict was returned accordingly. Eventually it was discovered that arsenic had been administered; and a neighbouring practitioner, Dr. Toogood (to whom it was my misfortune to be a professional rival) seized the opportunity to publish his own view of the case in various newspapers and periodicals, asserting that arsenic "*produces well-known and unmistakable effects*" that, "if the parties whose busi-

ness it was to investigate the cause of death had faithfully performed their duty, the fact of a deadly poison having been taken would have been developed, &c.; and that the "medical testimony" was of such "a vague and negative character as tended rather to mislead." Had all this been true, its publication, I imagine, by a medical brother would have been uncharitable and unprofessional. It was calculated to crush a young man. It shook the confidence of my friends, and probably engendered the feeling displayed in your last GAZETTE.

Dr. Toogood's recent contribution to the Provincial Journal has excited the attention of many experienced men; some of them referred to his former productions, and found his charges grounded on an "*unmistakeable*" fallacy. Gentlemen of high character, personally strangers, have furnished me with cases in point, and assured me that from the evidence quoted by Dr. Toogood himself*, unless it were law that an autopsy be instituted in every case that forms the subject of an inquest, there were no apparent grounds for demanding it in the case for which I am censured; especially as the jury declared themselves perfectly satisfied. One correspondent, after citing several cases, says, "the ordinary symptoms of poisoning by arsenic are those which are frequently exhibited in the course of natural diseases."

This is the point at issue. Is Dr. Toogood correct in his assertion, that the effects of poisoning by arsenic are "well known and unmistakable?" With Christison, and the first authorities, in my favour, I hope to obtain the sympathy of your readers.

I remain, sir,

Your obedient servant,

E. E. PHILLIPS.

Member of the Royal College of Surgeons.

Chilton-super-Polden, Bridgewater,
September 30th, 1845.

[We think our correspondent should have declined giving any opinion without a post-mortem examination. That he had not seen the child alive, and that symptoms of poisoning often resemble those of natural disease, were circumstances which fully justified him in requiring a post-mortem inspection to be made, or in refusing to give any opinion whatever of the cause of death.

* "I found no external marks of violence or abrasions of any kind; the tongue and gums appeared natural, with the exception of the tongue being dry. In the anterior part of the abdomen decomposition appeared to be going on. I gave my opinion to the coroner that I could not discover that any hands of violence had been laid on the child. I did not know that I had ever seen the child alive, and from the evidence of Mrs. Chapple, the next-door neighbour, I supposed the child to have died from natural causes; and I told the coroner that I was quite ready to make a post-mortem examination of the body if he would direct me." See Dr. Toogood's letter, Dorset County Chronicle, May 8th, 1845.

* See page 1021.

Our reference to these cases was not intended to cast censure on Mr. Phillips, but to show how easily, owing to the neglect of post-mortem examinations, cases of poisoning may be overlooked.—ED. GAZ.]

VARIABLE MURMURS IN PHTHISIS. BY
I. M. WINN, M.D. PHYSICIAN TO THE
TRURO DISPENSARY.

NOT long since, I attended a case of phthisis accompanied with a very peculiar murmur. The patient was a middle-aged man, and when I first saw him, he was suffering from cavities in the left, and tubercular disease of the right lung. On the right side of the sternum, between the cartilages of the second and third ribs, there could be heard, on *expiration only*, a *triple bellows* murmur (that is, a murmur occurring three times in quick succession), but in no other part of the body could this murmur be distinguished. Some time after, when the disease of the chest was more advanced, a *double* murmur only could be heard; and when, at a still more subsequent period, cavities were completely formed in the right lung, this interesting phenomenon disappeared entirely.

Several of my medical friends saw the case, and all agreed in considering it perfectly unique.

The singular abnormal murmurs described by Dr. Latham in his Clinical Medicine, may, perhaps, have been of a similar nature. In his cases the patients were phthisical, and the murmurs were confined to one spot, but he does not allude to any triple or double sounds; and the murmurs, in his instances, were heard on the *left* side.

I regret to say that after the patient's death his friends would not consent to an examination of the body. In the absence of a post-mortem inspection, it is hazardous to attempt any explanation of the phenomenon. I cannot, however, refrain from conjecturing that the cause of the sounds was partial compression of a large artery by tubercular deposit during expiration, and that the regular cessation of the murmurs during inspiration may be accounted for by supposing that the inflated lung raised or removed the pressure at the time when its power of conducting sound was impaired by the ingress of air. This view of the case is strengthened by the fact of the murmurs disappearing at an advanced period of the disease, when cavities had taken the place of tubercle.

Should this brief notice of a remarkable case be thought sufficiently interesting for your journal, I shall feel obliged by your inserting it.

Truro, Oct. 4, 1845.

MILTON'S ACCOUNT OF THE APPROACH OF
BLINDNESS.

SIR,—The following account which Milton gives of his blindness is quoted by Dr. Kitto in his interesting book on the Lost Senses, which forms one of Knight's Weekly Volumes. I thought you might be inclined to spare the brief detail (with which those of your readers who have not seen it would, I presume, like to be acquainted) a little space in your journal.

"It is now, I think, about ten years since I first perceived my sight to grow dim, and, at the same time, my spleen and other viscera heavy and flatulent. When I sat down to read, as usual, in the morning, my eyes gave me considerable pain, and refused their office till fortified by moderate exercise of body. If I looked at a candle, it appeared surrounded with an iris. In a little time, a darkness covering the left side of the eye (which was partially clouded some years before the other) intercepted the view of all things in that direction. Objects also in front seemed to dwindle in size whenever I closed my right eye.

"This eye, too, for three years gradually failing, a few months previous to my total blindness, while I was perfectly stationary, everything seemed to swim backward and forward; and now thick vapours appear to settle on my forehead and temples, which weigh down my eyelids with an oppressive sense of drowsiness.

"I ought not, however, to omit mentioning that, before I wholly lost my sight, as soon as I lay down in bed, and turned on either side, brilliant flashes of light used to issue from my closed eyes; and afterwards, on the gradual failure of my powers of vision, colours proportionately dim and faint seemed to rush out with a degree of vehemence and a kind of noise. These have now faded into uniform blackness, such as ensues on the extinction of a candle; or blackness only varied, and intermingled, with dimmish grey. The constant darkness, however, in which I live, day and night inclines more to a whitish than a blackish tinge; and the eye turning round admits as through a narrow chink a very small portion of light. But this, though perhaps it may offer a small glimpse of hope to the physician, does not prevent me from making up my mind to my case, as one evidently beyond hope of cure."

Here follow some expressions of resignation to his heavy affliction, and he makes use of one, in replying to "a charge brought against him, by some unfeeling adversary of blindness," which I must not leave unquoted. "It is not, however, miserable to be blind; he only is miserable who cannot acquiesce in his blindness with fortitude." Yet we may well suppose, that his firmness

was sometimes shaken, that there were times in which the deepest anguish, admitting of no soothing, filled his mind. The "total eclipse" was sufficiently dreadful, but to this the words were but too truly added, "without all hope of day." Mr. Lawrence, before quoting that fine passage (in his Treatise on Diseases of the Eye), beginning,

"Thus, with the year,
Seasons return," &c.

takes occasion to observe, "Even our great poet, who might have been supposed to find every alleviation and resource that such an affliction (blindness) admits of, in his highly-gifted mind, and the exhaustless stores of knowledge with which it was furnished, repeatedly reverts to his blindness, and always in a tone of anguish and despondency characteristic of recent misfortune." If there be any who would accuse Milton, on this account, of too great a disposition to repine, they are most probably not among the blind.—I am, sir,

Your obedient servant,

W. F. B.

Oxford, October 2d, 1845.

SANGUINEOUS TUMORS OF THE HEADS OF NEW-BORN CHILDREN. BY W. B. KESTVEN, ESQ.

Late Senior Surgeon of the Holloway and North Islington Dispensary.

SEEING the attention of the profession directed by Mr. Adams, of Glasgow, to the observation of "Sanguineous tumors of the heads of new-born children,* I have thought the following history of a case of the sort might be acceptable for insertion in your journal: the subject of it having been my own child, I closely watched its commencement, progress, and decline.

The day after the infant's birth I perceived a slight swelling over the left parietal protuberance; it did not exist at the time of birth; the labour was perfectly natural, and little or no occipital tumor existed. The swelling rapidly increased, and in two or three days had attained its greatest size, constituting an ovoid tumor of twelve inches in circumference at its base, six and a half inches across its longer, and four inches and three quarters across its shorter diameter. It was tense, covered by the scalp, which presented no difference in colour or temperature from the surrounding integument; it was entirely opaque; it extended downwards to the ear, depressing the upper part of the pinna. The child did not manifest any signs of pain when it was touched, neither did pressure exercised upon it, produce the slightest symptoms of oppression of the brain; it was free from pulsation, and aus-

cultation detected no sound occurring in it.

Not having met with any thing of the kind in the course of my experience, nor read of it in books, I was naturally intensely anxious as to what it might be, and how it might end. I sought the advice of those greatly experienced in Surgery and Midwifery, as Dr. Robert Lee, Sir B. Brodie, Mr. Skey, Mr. J. B. Hill, &c. &c., but as none had had acquaintance with such cases, none could give me a confident opinion, either as to its nature or its treatment. Under these circumstances we followed the safest course—we did nothing—we opined, and wished it might be, blood; and knowing the proneness of bloody tumors to take on severe inflammation when opened, we feared an incision or puncture in this case.

The tumor remained stationary for six weeks: one day, at the end of this six weeks' of real anxiety, I thought it felt rather softer; on the next day a defined hard edge was distinctly perceptible within its base: this was at first a source of increased alarm, as I thought I then felt the borders of an opening in the bone: however, on a closer examination, the firm substance of the skull could be traced within the limits—the edge I had felt was, I suppose, indurated tissue bounding the effusion. Two or three days more sufficed for the rapid and total removal of the entire tumor by absorption; no recurrence took place, and I am thankful to say the child has since (*i. e.* eighteen months), enjoyed as good health as most children.

You will perhaps forgive my adding a few remarks to this case.

Mr. Adams distinguishes three varieties among these sanguineous tumors: 1st, the blood between the integuments and periosteum; 2d, between the periosteum and bone; 3d, between bone and dura mater.

I infer that the case now related belongs to the second variety, and is distinctly different from the first variety, or common occipital tumor, from its clearly defined limits, its tension, its opacity, the absence of serious symptoms, and lastly, the difficulty of conceiving it to be aught else than blood. The result confirms the diagnosis.

On the subject of treatment, a single case, where the cause is unknown, can afford but little guidance; but where the like are of rare occurrence one cannot but be influenced by the few examples one meets with; and on this point, I would beg to observe, that the result of the case under consideration, and the analogy of hematocele, would make me slow to adopt the recommendation of Löwenhardt*, approved by Mr. Adams, to puncture and apply strapping; the more

* Braithwaite's Retrospect, Vol. ii. Art. 127, page 267.

* Braithwaite, Vol. ii. loc cit.

especially as fatal hæmorrhage might occur, and did actually occur, in the practice of M. Valleix, and again within the knowledge of Smellie. My own impression, therefore, strengthened by subsequent inquiries among my professional brethren, is, that all such cases are better left alone, and that the repressing the desire manifested by the patient's friends "to do something," will be found in most cases the most difficult part of the treatment of the case.

If cases of the nature here described are of frequent occurrence, it is strange that they have not been more frequently recorded; if they still are rare accidents, the description of one may be useful. Still more may hereafter be recorded, consequently more known of their nature and treatment, and the space now occupied in your pages not entirely thrown away.

Upper Holloway,
Sept. 22d, 1845.

Medical Intelligence.

WE understand that Mr. Key, Mr. Keate, and Mr. Walne, have been appointed Consulting-Surgeons to the German Hospital in London.

OBITUARY.

THE profession has to regret the loss of one of its worthiest and most accomplished members, in the death of Dr. James Johnson, long known in medical literature as editor of the *Medico-Chirurgical Review*. He expired at Brighton, after a short illness, on Thursday, the 9th instant, in the 69th year of his age.

SIGNS OF PREGNANCY—SINGULAR CASE.

IT is not often that medical men are called on, in a judicial capacity, to decide whether a woman be pregnant or not. If we except the necessity which occasionally presents itself of examining a pauper female, alleged to be pregnant, where there has been maltreatment, or of a woman convicted of a capital crime,—a case involving proof of the signs of pregnancy probably does not present itself in English Courts of Law, once in ten or even twenty years. Yet to judge by the extraordinary pains taken to develop the subject by writers on Forensic medicine, one would imagine that the Forensic practitioner was daily engaged in balancing the accumulated proofs of pregnancy, and forming an opinion for the guidance of judges and juries. There can be no doubt whatever that this has arisen from the duties of an accoucheur having been confounded with those of a medical jurist. To the former, it is all important, in his daily practice, that he should have certain

rules to guide him; but then we apprehend, he will look for information, not to works on Forensic medicine, the authors of which are seldom practical men in this department, but to standard treatises on Midwifery. Nevertheless, a medico-legal case has just occurred; and, in spite of the solemn warnings given by medico-legal writers regarding the diagnosis of pregnancy—setting forth the fallacy of trusting merely to prominence of the abdomen, and enforcing the necessity for examining the breasts, the colour and form of the areolæ, the development of the nipples, the use of auscultation, and, lastly, the discovery of Keistein in the urine (a sign, by the way, lately shown by Dr. Möller to be of no medico-legal value), we have the question decided for the satisfaction of a bench of magistrates in the simplest manner possible, *i. e.* by the practitioner *passing his hand round the body of the woman!*

A man was lately charged with setting a dog on a woman who was far advanced in pregnancy. In consequence of this assault, she was obliged to keep her bed a fortnight. A medical man called on her, and, so far as we can ascertain, without any *legal authority*, for the purpose of examining her in order to extract evidence for the defendant. *He put his hand outside the clothes.* The woman believed that she was seven or eight months gone with child.

The medical man above alluded to was called for the defence, in order as it would appear to disprove the allegation of the woman respecting her pregnancy. He said he was requested to see her by a head game-keeper! "She told me she was seven months gone with child. I asked her to allow me to put my hand upon her body. *There did not appear to be any child: or one not so large as if she had gone six or seven months.* I asked her if she had miscarried, and she said she had not, but that after she had been attacked by the dog, she had experienced symptoms of miscarriage. *It was my opinion there were no symptoms of the kind.* * * I do not think she is seven months gone. I should think, by the appearance of her face, she could not have had the floodings complained of. Her face was not blanched." In reply to a question from the complainant, he said, "*I examined you by passing my hand round your body.*" The female: "You came to me in a very improper manner; I never allowed him, gentlemen (addressing the bench), to examine me." The surgeon: "*If there had been a child, I must have discovered it*."* The prisoner was convicted and fined.

REMARKS.—This is a curious case of Forensic medicine, and one which, taking the re-

* Times Report, Sept. 25, 1845.

port as it stands* to be correct, does not reflect much credit on the representative of the profession on this occasion. In the first place, he proceeds to examine a woman on the authority of a gamekeeper; the legality of which may be tested by supposing that the woman had been the wife of one in the middle ranks of society instead of a pauper! Would the surgeon have been contented with a gamekeeper's order to examine the wife of a clergyman or solicitor? We think not; but the case is not altered by the condition of the female. The only examination which he makes is by passing his hand round the woman's body, *nolens volens*, as it would appear from the woman's statement, and from this simple manoeuvre he comes to the following conclusions: 1. That there did not appear to be any child: 2. If there were one, it was not so large as if she had gone six or seven months: 3. If there had been a child he must have discovered it: 4. Because the woman's face was not blanched, it was his opinion that she had experienced no symptoms of miscarriage (the assault took place on the 23d August, and this visit to the woman was made on the 13th September). We shall leave our readers to judge how far this attempt to negative a plea of pregnancy was borne out by the mode of examination adopted. Whether the woman was in the fourth or seventh month of pregnancy, was of little importance, medically speaking; the aggravated assault might have been in either case attended with serious results. The conclusion respecting the size of the child reminds us of the defence made on one occasion by a female accused of want of chastity—*i. e.* it was true she had had a child, but it was a very *small* one. The medical question was:—Was the woman pregnant or not? Her allegation that she was pregnant, could not be negated by the hand of the examiner being passed outside the clothes. The whole of the proceedings satisfy us that there is one species of Forensic medicine for the poor, and another for the rich.

* Since the above remarks were written the medical man who officiated in the case has addressed a letter to the editor of the *Times*, complaining of the report. The medical circumstances, however, remain uncontradicted and unexplained. All that the writer states about his authority to examine the woman is this:—"When I went to her house and announced myself, the daughter went up stairs to her mother, and after coming down told me her mother said I was to go up." Further he alleges, that "The complainant walked about a long distance after the assault, and did not lie in bed for more than a week afterwards." The rest of the letter is a sort of extenuation of the prisoner's conduct, with which, it appears to us, a medical practitioner, *quoad* a witness, has nothing whatever to do.

VELOCITY OF THE NERVOUS POWER.—ARE THOUGHTS IMPONDERABLE?

THE rapidity with which a muscle contracts in obedience to the will under a mental impression, is well known. The following is, we believe, the first attempt to convey a tangible notion of the velocity with which the nervous power is transmitted from the brain through the nerves supplying the muscles. It occurs in a work which has had a wide circulation—*The Vestiges of the Natural History of Creation*. We must premise that the author looks upon the brain as a galvanic battery, and the mental power, or nervous influence, as identical with electricity. He observes:—

"If mental action is electric, the proverbial quickness of thought—that is, the quickness of the transmission of sensation and will, may be presumed to have been brought to an exact measurement. The speed of light has long been known to be about 192,000 miles per second, and the experiments of Wheatstone have shewn that the electric agent travels (if I may so speak) at the same rate, thus showing a likelihood that one law rules the movements of all the 'imponderable bodies.' Mental action may accordingly be presumed to have a rapidity equal to 192,000 miles in the second, a rate far beyond what is necessary to make the design and execution of any of our ordinary muscular movements, apparently identical in point of time which they are." (342.)

The admissibility of this statement entirely depends upon the fact, whether mental action, as indicated by the motion of a muscle through the operation of the will, be *identical* with electricity or not. If the author's supposition be correct, our nerves must be regarded only as so many electric telegraphs on a small scale, the prototypes of the discovery of Messrs. Cooke and Wheatstone. One fact we know; the power of transmission of the nervous influence, if not mensurable upon this hypothesis, is exceedingly rapid; but the writer mixes up certain other facts with his hypothesis, as, for instance, "the proverbial quickness of thought," and "mental action," both of which imply a succession of ideas which may go on, and not be manifested by outward movements. To assume that these move through our brains at the rate of 192,000 miles in a second of time, like light or electricity, is giving a locomotive power to our thoughts which they have not been hitherto considered to possess. On this hypothesis, a rambling state of one's ideas admits of a literal interpretation; and the reflection of thoughts from a polished surface, like light from a mirror, for instance, would do away with many of the difficulties of mesmerism. Some years since, we well re-

member that the celebrated Baron Dupotet produced, by looking intently at a mirror, singular mesmeric effects upon a person placed at an equal angle on the other side of the room! and until now we have not fallen upon any clue to the explanation of this phenomenon. His thoughts, like heat and light, may have observed "the angle of incidence in reflection as exactly as does the grossest stone thrown obliquely against a wall."

Mental action, like heat or electricity, may be imponderable and intangible; but as philosophers allow that if the matter of heat were only as much lighter than hydrogen as hydrogen is lighter than platina (*i. e.* 230,000 times) no scales could weigh it,—the difficulty may really be, not as the writer of the "*Vestiges*" suggests, that "*the thing*," whether heat, electricity, or mental action is weightless, but that our instruments are of too coarse a construction to determine the weight. He confines himself to the increase of the hundredth part of a grain in heated and magnetized bodies, but we will give him at once the millionth, and the result would probably be the same.

This notion respecting the ponderability of thoughts, and their power of occupying and traversing space with an almost inconceivable velocity, is by no means new. The idea was taken up and worked out by a patient of Dr. Haslam's, many years ago, but the man was considered to be mad, and the theory has therefore since lain dormant. The patient referred to, was a well-educated man, about the middle age; he always stopped his ears closely with wool, and, in addition to a flannel nightcap, usually slept with his head in a tin saucepan (Haslam, 71). Being asked the reason why he so fortified his head, he replied, to prevent the intrusion of the sprites. On further inquiry, it appears that these were, in his opinion, epigenetic germs, analogous to thoughts, formed in one person's head, and officiously intruding themselves into that of another. When they acquired the size of a pea, they perforated the drum of the ear, which enabled them to traverse the interior of the brain, and become acquainted with the hidden secrets of the person's mind. They then took wing, became invisible beings, and communicated to the original parent, "their surreptitious observations and intellectual gleanings. In this manner" said the patient, "I have been defrauded of discoveries which would have entitled me to opulence and distinction, and have lived to see others reap honours and emoluments which were the genuine offsprings of my own brain!"

Selections from Journals.

SURGERY.

REMOVAL OF FOREIGN BODIES FROM THE ŒSOPHAGUS.

At a recent meeting of the Surgical Society of Ireland, Dr. Locke detailed the particulars of a case in which a fish-bone had lodged in the Œsophagus of a female, aged 14 or 15. The patient was brought to the dispensary to which he was attached, saying that she felt the bone stuck across the throat. He first attempted to force it onwards to the stomach by the passage of a long stomach-pump tube; but fortunately she did not allow the employment of the instrument, and he was now led to try the success of an emetic, from having observed the efficacy of accidental vomiting in a similar case that occurred in a man some time before. After giving a full and strong emetic, he made the patient drink large quantities of warm water, so that the stomach became greatly distended, and when the vomiting commenced a great gush of fluid was thrown up, by which the Œsophagus was distended, and the bone dislodged and ejected.

Dr. Benson said he had requested Dr. Locke to detail this case to the Society, because he was struck with the reasonableness of the treatment, and the satisfactory nature of the result. It must always be gratifying both to patient and surgeon that the bone should be got up, rather than forced down; it is more satisfactory at the time, and it removes the risk of bad consequences on a future day. Now, an emetic will occasionally succeed, as every one knows; but the point in Dr. Locke's treatment, which struck him as ingenious and scientific, was the plan of filling the stomach so full that, when the vomiting commenced, the Œsophagus should be distended, and the bone disentangled and washed up in the torrent.—*Dublin Medical Press*, May 14th.

AMPUTATION AT THE KNEE.

MR. SYME has come to the conclusion, that the great mortality which attends amputation of the thigh arises from the manner in which the operation is performed; that there is something radically wrong in the principle of the operation. This error he believes to be, dividing the thigh-bone through its shaft, instead of the condyles or trochanters. "The most frequent occasion for amputation of the thigh is afforded by diseases of the knee-joint. Next to this may be ranked compound fractures of the leg and thigh, and then tumors growing from the bones of the leg and thigh. Now, in regard to diseases

Of the knee-joint, it is well ascertained that the warrant for amputation lies in the bone, and not in the soft parts, which, however much altered through scrofulous degeneration or suppuration, readily admit of restoration to their natural condition, as is clearly shown by what happens after excision of the elbow, or amputation at the ankle-joint. In so far, therefore, as removal of the disease is concerned, it is plain that amputation through the condyles of the thigh-bone would, in this case, prove sufficient. As to compound fractures of the leg, it will be admitted that if the integuments and muscles admit of the limb being removed at the middle or lower third of the thigh, they cannot present any obstacle to a few inches more of the bone being preserved, while similar injuries of the thigh obviously require amputation at the trochanters. The same observation will apply to tumors of the bones, those of the tibia and fibula not requiring any more of the thigh-bone to be removed than may be suggested by convenience, and those of the thigh-bone itself demanding the highest practicable point of section. From this analysis, Mr. Syme infers that, "taking merely the morbid condition into account, all the cases admitting of amputation at or below the middle of the thigh-bone would admit of the operation being performed through the condyles. The author considers that dense bone dies more readily than that of a spongy or cancellated structure, and, although it would be a narrow view to suppose that the direct effect of the local injury (produced upon the bone by the action of the saw), is alone concerned in producing death of the bone after amputation, there can be no doubt that inflammation of the medullary membrane may co-operate, if it does not sometimes act exclusively, in its production; but when the bone is divided through the condyles, nothing more than the epiphysis being concerned, the medullary membrane is not at all disturbed, while the cancellated structure is not liable to exfoliate, either from its proneness to die from injury, or through inflammation of any other texture. It may, therefore, he infers, be expected, that the operation would prove less fatal than when performed in the usual way, and that the stump would be less apt to prove imperfect through protrusion of the bone. These expectations derive encouragement from the results of amputation at the ankle-joint, to which the author was led by similar considerations. Of twelve cases in his own practice, and in nearly as many more in that of other practitioners who have been induced to adopt it, this operation has not in a single instance been followed by either death of the patient or exfoliation of the bone; and, so far from selecting favourable cases for the purpose,

he has repeatedly removed the foot, in circumstances where he should have declined amputating the leg as altogether desperate. Mr. Syme then details two cases in which he removed the limb, for disease of the knee-joint, by the plan he has now adopted. He recommends that a semilunar incision be made across the knee, on a line with the lower edge of the patella; the knife being then pushed from one side to the other under the joint, a flap is formed from the calf of the leg, (this posterior flap must be made very long, indeed to the full extent of the fleshy part of the gastrocnemii muscles, care being taken, however, to avoid preserving more than a moderate portion in regard to thickness). The condyles of the thigh-bone are finally to be sawn through the condyles of the thigh-bone, so as to remove the whole articulating surface. The cure went on favourably in both these cases, no exfoliation occurring, but the precise state of the stumps, or their capability of supporting pressure, at the time of the patient's discharge, is not mentioned. Mr. Syme then relates four successful cases of amputation of the foot, at the ankle-joint. In three of these, simple disarticulation was employed; in the other, the malleolar processes, with a thin connecting slice of tibia, were sawed off. He very strongly objects to amputation of the leg in cases where the foot or ankle is alone involved, considering that it has been proved to be an unnecessary mutilation.—*London and Edinburgh Monthly Journal*, May 1845.

[REMARKS.—It is very probable that Mr. Syme will succeed in proving that removal of the limb, by separation of the femur through its condyles, is a safe and judicious plan. Still, it cannot yet be admitted that the adoption of this course will diminish the proportion of deaths in amputation of the thigh; further experience may prove that it does so, but the success of two cases does not prove much; especially when it is observed that both of these were instances of scrofulous disease in young adults; a class of patients in whom deaths are not frequent either after excision of the joints or amputation. Until it is distinctly proved that separation of the femur at its centre produces fatal results which will certainly be obviated when the bone is sawn through at its trochanter, surgeons will probably hesitate to perform an operation which is scarcely less severe or less difficult than that of removal of the limb at the hip-joint, and which leaves the patient unable to avail himself of the support of a wooden leg, in cases where the disease or injury admitted of the operation being performed lower down. English surgeons still continue to amputate the limb at the usual distance below the knee, in nearly all cases where recovery would cer-

tainly be equally well effected if the foot had been removed at or just above the ankle-joint. And for this reason; that it has always been found difficult to adapt any apparatus to the stump which is capable of supporting the body, or of at all supplying the place of the lost foot: such a substitute may, perhaps, under favourable circumstances, be obtained by a person who is able to emply the ingenuity of a clever machinist; but patients, under these circumstances, are usually compelled to walk with the knee bent, and resting upon a common wooden leg. To such persons the projection of the limb behind, and consequently the constant exposure of the stump to injury, becomes such a continual source of misery, that many so circumstanced have, after a time, desired to have the limb removed at the usual situation. Persons have certainly been enabled to walk with artificial feet, but as the poorer class of patients cannot usually avail themselves of a plan of this kind, we cannot consider the operation proposed by Mr. Syme to be so generally applicable, or that adopted by most other surgeons to be so highly unjustifiable, as that gentleman argues.—ED. GAZ.]

PHYSIOLOGY.

ON THE CONTAGIOUS EFFECTS OF PUERPERAL FEVER ON THE MALE SUBJECT, OR ON PERSONS NOT CHILD-BEARING.

In a very valuable paper on this subject, read before the Sheffield Medical Society, by Mr. Robert Storrs, of Doncaster, the author states, that true puerperal fever once set up, is again capable of imparting to any person not in the puerperal state, by actual contact or close approximation, the following diseases.

1st. Inflammation of the peritoneum or other serous membranes, accompanied by low fever, both in the male and female subject.

2d. Erysipelas; local, as in the hand or arm, from post-mortem inspections; or general, as in the face or person.

3d. Typhus fever, with its various accompaniments, and in a variety of forms.

Mr. Storrs adduces cases occurring in his own and others' practice in proof of the correctness of each of these propositions.

First Proposition.—*Inflammation of the Peritoneum and Pleura, produced by Puerperal Fever.*

In illustration of this point four instances are adduced. In the first a woman died of puerperal peritonitis, the symptoms of which set in on the day after delivery, and proved fatal in three days. On the day following her decease, while the corpse was yet unburied, her husband had shivering, pain in

the right hypogastric region; great tenderness on pressure; laborious and rapid breathing; a quick, soft, and somewhat feeble pulse, between 130 and 140; and pain on inspiration. The case was actively treated, but great dulness on percussion on the right side of the chest, and gradual infiltration into the lungs came on; the abdomen was slightly tympanitic, the breathing became more and more difficult, and he died after having been ill scarcely six days.

The second case is that of the mother of a woman who died of puerperal fever—an old woman of seventy, or thereabouts, who was seized a few days after her daughter's death with intense symptoms of a combination of peritoneal and pleuritic inflammation; rapid typhoid and sinking symptoms came on, and she died in three days. The author adds, that, had she been young enough, and the fever had occurred after child-birth, he should have had no hesitation in pronouncing it a case of puerperal fever. The third case, in which the husband was the victim, where the wife had previously died of puerperal fever, occurred in the practice of Mr. James Allen, of York. The man was seized immediately on the death of the wife with peritoneal inflammation, with all the characteristics of puerperal fever, and died in three days. The author has no details of the circumstance, but he has often heard Mr. Allen say how much he was struck with the similarity of the symptoms in the male to those of true puerperal fever; indeed, he has no doubt of the identity of the disease in each case. The fourth illustration is afforded by Dr. Paley, of Ripon, who, in a history of cases of puerperal fever, arising from one of gangrenous erysipelas of the scrotum, relates the case of a married lady, aged 54, who had been in close attendance on one of the fatal cases, who was seized with violent pain in the abdomen, and died, under symptoms similar to the puerperal cases, in twenty-six hours after the seizure.

Second Proposition.—*The production of Erysipelas, local or general, in the person of the attendant, in cases of Puerperal Fever.*

CASE I.—A medical friend of the author had a number of cases of fever, and amongst them one had a very large abscess of the neck, which required his daily attendance. One evening, when engaged in this duty, he was fetched from thence to attend a lady in her accouchement, and contrary to his own wish, was prevented from changing his clothes before visiting her. Four-and-twenty hours after delivery this patient was seized with symptoms of regular puerperal peritonitis, of the lowest character. In spite of all the assistance that he and another practitioner in that department could afford

her, she died on the seventh day from her accouchement.

This lady's maid, who attended her most affectionately throughout this dreadful state, happened to cut her finger, which she brought into use in sponging her mistress. The day before her mistress died she was attacked with violent shivering, &c. &c.; the finger inflamed; the absorbents connected with the wound enlarged; she soon became delirious, and she died on the fifth day from the first shivering fit.

CASE II.—A female who was in close attendance on a woman who died of puerperal fever under the author's care, was seized with erysipelas of the whole of the cellular texture of the right side of the chest, and with severe pleuritis. She recovered with great difficulty.

CASE III.—An unmarried sister of a woman who died of puerperal fever, was seized with phlegmonoid erysipelas of the mamma, and was in a very dangerous state for some time, but recovered after the formation of an immense abscess. The author also refers to five other cases in which medical men, nurses, and students, who either attended women with puerperal fever, or examined their bodies after death, were attacked with severe erysipelas.

He adds, that he could adduce an immense number of cases of erysipelas of the navel and genitals, occurring in the infants of those dying of the disease—a fact which, he conceives, goes far to prove the power of puerperal fever to reproduce the disease from which it had been previously propagated (erysipelas), and also in generating a poison which, according to the condition of the part affected, and other circumstances, may be either erysipelas of the hand, of the face or throat, or of the navel or genitals, as the case may be; or it may be one bearing a most close resemblance to puerperal fever, both in its seat, symptoms, and fatality.

Third Proposition.—*Typhus Fever, with its various accompaniments, produced by Puerperal Fever.*

CASE I.—A sister of one of the author's patients with puerperal fever, was seized immediately after the death of the latter with typhus fever, and was in great danger.

CASE II.—A woman who attended Case II. of the author's series, and her mother (both fatal), was immediately attacked with typhus, but recovered. She was ill at her own home. Her son was also seized with typhus, and had a tedious recovery. There were no other cases of typhus in the village at the time.

CASE III.—The nurse of Mrs. Manby, the person who suffered so severely from erysipelas after attending a fatal case of

puerperal fever, was seized with typhus, and died.

"Here," says the author, "we have a complete chain of disease and death in four persons in one month, fairly traceable from one to the other, viz.:—Mrs. Richardson, the person from whom I suppose all my cases arose, had gangrenous erysipelas. I conveyed the poison to her from Mrs. Briggs; she died. Mrs. Manby, Mrs. Briggs's friend and neighbour, was immediately seized with erysipelas and pleuritis, but recovered. Mrs. Manby's nurse was, a few days afterwards, obliged to be sent home from an attack of typhus fever, under which she died, long before Mrs. Manby had recovered from her attack of erysipelas. Hence, there seems to be the strongest reason to believe that a poison was generated by the gangrenous erysipelas, which was capable of passing through the bodies of others, and of producing this or that form of disease, to which unknown conditions of their respective systems rendered them liable. Sometimes general or constitutional disease, and sometimes local disease, with more or less of constitutional symptoms, guided in some degree by the mode of its production, whether of actual contact, of intermediate contact, or of close approximation." Mr. Storrs adds, that Mr. Nunely, of Leeds, he believes, considers the diseases of puerperal fever and erysipelas to be identical; and so far as they seem to arise from the same animal poison, he thinks a review of the cases above related will corroborate his opinion.—*Abridged from the Provincial Medical and Surgical Journal*, May 7th, 1845.

[REMARKS.—We regret that we are not able to extract this very able and interesting memoir verbatim; but we advise our readers to peruse the whole of the original paper. The facts which it contains, although not very numerous, are exceedingly striking, and will, we trust, lead to the development of many additional illustrations of the long undecided pathology of puerperal fever.—ED. GAZ.]

ALTERNATION OF PUERPERAL FEVER AND COMMON CONTINUED FEVER WITH ERYSIPELAS.

THE Editor of Dr. Colles's Surgical Lectures states that for several years it has been remarked in the Lying-in Hospital, Britain Street, that puerperal fever and erysipelas frequently alternate with each other, the latter being, in such cases, situated about the vulva and buttock. Dr. Colles quotes a remark of Dr. Harvey, that there was never an epidemic fever in Ireland that was not followed by numerous cases of erysipelas in the hospitals.

MICROSCOPICAL SCIENCE.

METHOD FOR DETECTING THE PRESENCE OF
A MINUTE QUANTITY OF BILE IN THE ANI-
MAL FLUIDS.

THE ordinary method pursued for the purpose of detecting the colouring matter of bile (biliphæin of Simon, *choleptyrrhin* of Berzelius) in fluids supposed to contain it, consists in adding a portion of nitric acid to the suspected fluid, when if bile be present there is immediately produced a beautiful green colour, which by degrees becomes changed successively to blue, violet, red, and yellow. It is essential, however, that the quantity of bile should be considerable, in order that these various changes of colour should take place on the addition of nitric acid: if the quantity is but small, there is only produced a greenish colour, which shortly becomes changed to yellow without passing through the degrees of blue and red, for the production of which the quantity of bile present is not sufficient. Dr. Heller,* moreover, observes, that he has frequently known bile to exist in urine and other fluids without its presence being indicated, or any change of colour effected by nitric acid in the ordinary way of applying this test. He states, however, that if any fluid in which bile exists, contains a portion of albumen, the nitric acid, by coagulating the albumen, will detect the smallest possible quantity of bile, for the coagulum assumes at once either a bluish, or perfectly blue, or a greenish colour, and if the bile exists in large quantity the coagulated albumen will accordingly assume a green, and then a reddish colour. In pursuing this mode of testing for the presence of bile, Heller recommends that to the suspected fluid, say urine, a considerable excess of strong nitric acid is to be added, and should there be produced by this means none of the ordinary colours indicative of the presence of bile, then that to another portion of the fluid some albumen dissolved in water (serum of blood, if at hand) is to be added, and well mixed; a little nitric acid is now to be poured into the mixture, which, after being stirred up, is to be left at rest for the albuminous precipitate to form; if bile be present, this precipitate of coagulated albumen presents a bluish or greenish blue colour, but if it be not, then the coagulum is simply white (though, after a time, it assumes a yellowish tint, owing to the action of the nitric acid, but this is quite independent of the presence of bile). Thus, therefore, the simplest plan to detect bile in a non-albuminous fluid consists in making the fluid albuminous, and then treating it with nitric acid; should blood be the fluid requiring to be tested, nitric acid may be

added at once to the serum, which contains albumen in abundance.

The microscope is capable of still further improving upon this mode of procedure, and of rendering this test applicable in cases where the suspected fluid is too small in quantity to be examined satisfactorily in an ordinary test-tube; for this purpose, Donné* recommends that a drop of the suspected fluid be placed between two slips of glass, and a little nitric acid added whilst the object is beneath the microscope: immediately upon the acid coming in contact with the fluid the characteristic colours are struck, should bile be present. In this way Donné was enabled to determine that an abscess communicated with the intestine, by simply examining a drop of the pus discharged.

MODE OF DETECTING MORBID BILE.

IN some diseases, however, as in cholera, &c., Dr. Heller has found that the colouring matter of bile may undergo a very considerable morbid change, in consequence of which, when treated with nitric acid, it assumes at once a red instead of a green colour. He has found that for bile which has undergone this change ammonia is a better and a more certain test than nitric acid, for although this latter reagent will detect it when in any abundance, yet it is apt to prove deceptive in cases where urine is the fluid undergoing examination, especially if much hæmotosine be present, which substance becomes more or less red by nitric acid. In using the ammonia test, a small quantity only should be at first dropped in, immediately upon doing which a bright red colour is struck; more of the ammonia may then be added until a reddish-brown fluid is obtained. In this way it is possible to detect the presence of a very minute quantity of altered bile pigment, even when nitric acid fails to afford the smallest evidence of its existence.

ON MILKY SERUM.

BY DR. ZINNERMANN.

OF 17 cases which the author observed out of 50 persons bled, 12 were diseases of the eye; 2, thoracic inflammation; 1, cerebral congestion, and 1, a case of hypertrophy of the liver, spleen, &c. The specific gravity of the serum varied from 1027 to 1036, and 1000 grains contained from 96 to 112 grains of solid matter. It was of a rather thick consistence, sometimes greenish, sometimes yellow, the clot appearing through it of a violent colour, and in only three cases was there a buffy coat.—*Brit. and For Med. Review.*

MICROSCOPIC EXAMINATION OF THE BLOOD
IN GOUT.

M. DONNE relates the case of a man who was bled for an attack of gout in the sto-

* Archiv. für Physiol. und Pathol. Chemie und Microsc. Heft I.

* Cours de Microscopie, page 212.

DECOCTION OF THE ROOTS OF THE BLACK CURRANT, ETC.

mach. The blood had a perfectly white appearance; it duly coagulated, and the separated serum had a milky purulent aspect, and when examined beneath the microscope appeared filled with globules, which in physical characters and solubility in æther exactly resembled those of chyle. The clot unfortunately was not sent for examination: in all probability it would have been found to contain red globules imprisoned within the meshes of the fibrine.—*Cours de Microscopie*.

THERAPEUTICS.

DECOCTION OF THE ROOTS OF THE BLACK CURRANT IN CHRONIC HÆMORRHAGE FROM THE UTERUS.

DR. MEIGS recommends the trial, in some perverse cases of metorrhagia, of a remedy that has often proved useful in his hands; and where the use of astringents is indicated, he would make use of it with no little confidence. The remedy in question is a decoction of the roots of the common black currant, ripe, and the roots of the dew-berry. A handful of each of these articles is to be boiled in two quarts of water, and, after straining the liquor, the patient should take half a cupful occasionally for a dose. The draught is by no means disgusting, and Dr. M. ventures to say that the effect of the administration has often been a very sensible diminution of the discharge. He would deem such a formula very useful in country places, where every facility cannot be enjoyed in varying the scientific prescriptions repeatedly upon the failure of such as may have been tried without success.—*Translation of M. Colombat's Treatise*.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Oct. 4.

BIRTHS.	DEATHS.	Aver. of 5 yrs.
Males... 628	Males... 448	Males... 491
Females . 616	Females . 408	Females . 472
1244	856	963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	126
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	142
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	157
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	209
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	222
Total	856

CAUSES OF DEATH in the Week ending Oct. 4.

Col. A. Weekly Averages of 5 Autumns; Col. B. of 5 Years.

ALL CAUSES	856	1020	963
SPECIFIED CAUSES	851	1010	954
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	207	201	184
<i>Sporadic Diseases, viz.—</i>			
2. Dropsy, Cancer, &c. of uncertain seat	88	109	106
3. Brain, Spinal Marrow, Nerves, and Senses	121	155	159
4. Lungs, and other Organs of Respiration	201	323	292
5. Heart and Blood-vessels	31	27	24
6. Stomach, Liver, and other Organs of Digestion	90	68	71
7. Diseases of the Kidneys, &c. ..	13	6	6
8. Childbirth, Diseases of the Uterus, &c.	13	12	10
9. Rheumatism, Diseases of the Bones, Joints, &c.	6	6	6
10. Skin, Cellular Tissue, &c.	5	1	1
11. Old Age	28	74	70
12. Violence, Privation, Cold, and Intemperance	48	27	26

The following is a selection of the number of Deaths from the important special causes:—

Small-pox	12	Convulsions	33
Measles	67	Delirium Tremens ..	1
Scarlatina	23		
Hooping-cough ..	29	Bronchitis	23
Croup	7	Pneumonia	49
Thrush	3	Phthisis	13
Diarrhoea	31	Dis. of Lungs, &c. ..	6
Dysentery	1		
Typhus	23	Teething	10
		Gastritis	2
Hæmorrhage	4	Enteritis	16
Dropsy	8	Peritonitis	4
Debility	20	Tabs Mesenterica ..	21
Sudden deaths ..	12	Dis. Stomach, &c. ..	8
		Dis. of Liver, &c. ..	11
Hydrocephalus ..	19		
Apoplexy	26	Childbirth	9
Paralysis	11	Dis. of Uterus, &c. ..	3

REMARKS.—The total number of deaths was 164 below the autumnal and 107 below the annual average. The deaths from Zymotic diseases, with the exception of Measles, are also below the averages. The mortality from Measles still continues unabated (deaths 67). In all the districts, the mortality is below the autumnal and annual averages.

ROYAL OBSERVATORY, GREENWICH.

METEOROLOGICAL SUMMARY

For the week ending Saturday, Oct. 4.

	Max.	Min.	Mean
Height of Barometer ^a	29.79	29.44	29.61
" Thermometer	67.1	42.5	55 ^a
Self-registering do.	81.4 ^b	32.5	
" in the Thames water ..	55 ^c	53.5	

^a From 12 observations daily. ^b Sun.

RAIN, in inches, 0.21: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was nearly 4.6° above that of the climate of London for the year, but 7.6° below the mean summer temperature. The extreme hebdomadal and diurnal range in the self-registering thermometer was 48.9°, and occurred on Sunday, the 28th ult.

LONDON MEDICAL GAZETTE.—SUPPLEMENT.

CORRESPONDENCE BETWEEN
DR. SIMPSON, DR. RAMSBOTHAM,
AND DR. LEE,
IN RELATION TO UTERINE HÆMORRHAGE
FROM PLACENTAL PRESENTATION.

Note by Dr. Simpson.

It has already been shown (see GAZETTE for October 10) that Dr. Lee, while anxious to criticise others for statistical mistakes regarding placental presentations, has himself committed and published no small variety of numerical errors respecting the limited portion of placental cases that have occurred in *his own* practice. Thus, *first*, in his Clinical Midwifery, he states his recorded cases as 35 instead of 36; *secondly*, in one part of his "Lectures," he states the cases there tabulated as 36 instead of 38; *thirdly*, in the MEDICAL GAZETTE for Sept. 19, the sum total of his placental cases should be 44 instead of 43; *fourthly*, in the GAZETTE of last week, the ultimate case should be numbered 46, instead of 45; *fifthly*, all the eight numbers attached to his table of eight cases, in the GAZETTE for Sept. 19, are individually wrong; *sixthly*, among his placental cases, in his Clinical Midwifery, he has omitted any case under No. 280; *seventhly*, out of exactly the same 36 cases, he makes in his Clinical Midwifery 11, and in his Lectures 13, be complicated with rigidity of the os uteri, &c.

These errors, however, are trivial in degree compared with a strange and unfortunate statistical mistake which Dr. Lee has committed in the last week's GAZETTE.* He has there published the results of 89 cases of placental presenta-

tion that have occurred in the practice of the respected Dr. Merriman. In a table which Dr. Lee gives of these cases, he makes Dr. Merriman *lose* 67 mothers out of the 89, or about 3 in 4; and save 22, or 1 in 4. The opposite, however, must evidently be the truth—that 22 of the mothers died, or 1 in 4; while 67 recovered, or 3 in 4.*

These and the various other numerical inaccuracies which Dr. Lee is well known to have published in regard to the placental cases of *other* authors, will, it is hoped, render him in future a more charitable critic on this subject, seeing he is himself so *very* far from being infallible.

No. 1.—*Letter from Dr. Simpson to Dr. Ramsbotham.*

Stafford House, London, Sept. 20, 1845.

My dear sir,—I have had sent after me to London a collection of letters which had come to Edinburgh after my departure. Amongst them I find one† from you in reference to the report which I have given (in the March Number of the Edinburgh Monthly Journal) of the maternal mortality amongst the patients of the Royal Maternal Charity in cases of unavoidable hæmorrhage. I hasten to assure you that it gives me much pain to think that any unintentional mistake of mine should have

* See Correspondence, p. 1083. The error was in Dr. Merriman's manuscript, from which the table was printed.—Ed. Gaz.

† The tenor of Dr. Ramsbotham's letter was of the same nature as that of his two notes to Dr. Lee, published (p. 896) in the MEDICAL GAZETTE for 19th September; and, in the same way, stated the number of maternal deaths at the Maternity Charity from placental presentations to be 15 only out of 50 cases; while the number of children lost was 32. He mentioned, also, as in his notes to Dr. Lee, that the 44 cases of unavoidable hæmorrhage spoken of in his work on Obstetric Medicine, were all cases of *partial* presentation of the placenta.

To save repetition, Dr. Ramsbotham's first letter is not given. The letter bearing upon the subject will be found at p. 1086*.

given you a moment's annoyance, as nothing could be further from my wishes than to do so.

The paper you refer to is a statistical one, requiring no small degree of labour on my part; and I was at last obliged to print it amidst all the hurry and turmoil of a busy academic session. You are well aware of the almost insuperable difficulty of securing perfect accuracy in such tabular returns. I had occasion, some time ago, to point out to yourself, when writing you on the subject, an error of some importance in your own printed returns of placental cases belonging to the Maternity Charity. To ensure as great accuracy as possible in the various tables which I published in the memoir referred to, all the data in them were gone over more than once, and I was assisted by Dr. Keith and other friends in revising them; and the results, as they now stand, give no adequate idea of the labour expended in arriving at these results. For instance, in order to obtain as many data as possible from the fifty cases of placental presentation which had been recorded by you as occurring in the practice of the Maternity Charity, I searched over all the different volumes of the MEDICAL GAZETTE, in which your reports are contained, and entered each individual case by itself in a table shewing, under different headings, the number of the pregnancy, the date at which labour supervened, &c. &c. &c. Two contiguous columns contained the entries of the "results to the child," and the "results to the mother." In summing up the fifty resulting lines containing your fifty different cases, in order to get the single line to be found in the table which you complain of, I had either inadvertently entered, or subsequently copied the results to the child for the results to the mother, and the reverse. If the "results to the child" had been published in the first part of

the Memoir, I should at once have seen the error, and corrected it; but unfortunately I held the results to the child, in yours and other cases, in reserve for future publication.

Before leaving Scotland, I had nearly passed through the press, and had ready for separate publication, a long Memoir on the whole subject of the treatment of unavoidable hæmorrhage by the extraction of the placenta *before* the child. In that Essay you will find the error I had made on your returns acknowledged and rectified, though (if I recollect properly) I still make out the number of maternal deaths to be different from you. However, a special reference to each fatal case is given.

You state in your letter that the 44 cases of placental presentation which I have appended to your name in the table were all cases of *partial placenta prævia*. I am quite aware of it. The table was made to shew the maternal mortality in *all* varieties of the complication, and under *all* modes of treatment—whether the membranes merely were ruptured, or the child turned, or the placenta spontaneously expelled, or the mother sunk without aid of any kind. If I had rejected the partial placental cases, such as your 44, because they were not so fatal as the complete, or the cases in which the liquor amnii was artificially evacuated, or the placenta spontaneously separated and expelled, because they were by no means so fatal as the turning cases, I might have easily brought out a result apparently stronger, but it would have been at the expense of strict and truthful accuracy. The proportion of maternal deaths under turning in placenta prævia, and where the presentation was generally central, forms, you will find, a subject of inquiry in a later part of the Essay. I hope to be able to send you a copy of the Essay itself in a few days after I return to Edinburgh.

In conclusion, allow me to state, that in lecturing and otherwise, I have repeatedly held up your returns of the practice of the Maternity Charity as the most remarkable in our professional annals, both for their intrinsic excellence, and for the very great practical success which they display in the treatment of the patients belonging to the Institution.

And believe me, my dear sir,

Very faithfully yours,

J. Y. SIMPSON.

To Dr. Ramsbotham.

[*Addendum*.—I have omitted to state, in the preceding letter, the way in which I was led to estimate the number of deaths among the infants in Dr. Ramsbotham's placental presentations as 33 instead of 32. (See MEDICAL GAZETTE for Sept. 19, p. 896). In Dr. Ramsbotham's Reports from 1829 to 1843, the number of infantile deaths in unavoidable hæmorrhage amounts to 31. The return for each of these years in the GAZETTE explicitly mentions the precise number lost in placental presentations. It is not so in the report for 1823 (MED. GAZ. Vol. III.) During that year 4 children are returned as born dead after severe uterine hæmorrhage, *without* its being specified whether these deaths were in connection with unavoidable or accidental floodings. As I found 3 cases of unavoidable, and 3 cases of accidental hæmorrhage in the list for that year, I divided, in want of more precise information, the number of infantile deaths equally between them, two to each, and hence made the whole number in placental presentations amount to 31+2 or 33. Dr. Ramsbotham, however, assures me, that among the three unavoidable hæmorrhages of that year only 1 child was lost; while in the 3 accidental hæmorrhages all the children were born dead.]

No. 2.—*From Dr. Simpson to Dr. Ramsbotham.*

My dear sir,—As soon as I received your letter last week, I wrote off to Edinburgh to have sent up to me here the original long manuscript table that had been constructed from your reports of the placental cases at the Maternity Charity, published in different volumes of the MEDICAL GAZETTE, and that formed the basis of my calculations regarding them.

My assistant and friend, Dr. Keith, tells me, in a note which I have this morning received from him, that he cannot lay his hands upon the Table, amidst the present state of confusion of my books and papers. The fact is, I lately went into a new house in Edinburgh, and the workmen and painters are still so busy with it, that everything is as yet entirely out of its place. Dr. Keith, however, has furnished me with some loose notes, which partly supply the defect. These notes confirm the impression which I mentioned to you in my last letter, that you were somewhat in error in your own account of your own placental cases.

The period of the reports of the Maternity Charity, to which your calculations and mine equally refer, are from 1823 to 1843, both years included.

In your excellent work on Obstetric Medicine, you twice state (see p. 725, and again p. 726), and found calculations upon the number of placental presentations occurring during the above period, as amounting to *Forty*. At p. 721, and in your later letter to me, you calculate them as *fifty* in number. Their actual number (I believe you will find) to be *fifty-one*, viz., III. in the year 1823; I. in 1829; II. in 1830; III. in 1831; III. in 1832; II. in 1833; I. in 1834; III. in 1835; VIII. in 1836; III. in 1837; I. in 1838; V. in 1839; X. in 1840; I. in 1841; IV. in 1842; and I. in 1843.

In your letter to me, you state the

of maternal deaths in these placental cases as *fifteen*; I find *sixteen* deaths among the mothers in the cases mentioned in your published reports, viz. I. in the report for 1829; I. in 1830; I. in 1832; I. in 1833; I. in 1836; I. in 1837; III. in 1839; IV. in 1840; II. in 1842; and I. in 1843.

I have been thus particular in noting the years, because, as you are aware, it is not always very easy to discover the precise results of the placental cases, from the form in which you have arranged and published your reports in the *GAZETTE*. And if, in comparing the above list with yours, you detect any error, however slight, I shall, I sincerely assure you, feel very greatly obliged by your pointing it out to me, and be delighted to correct my tables accordingly, my great object of course being as great a degree of accuracy in them as possible.

I do not think that the returns of Lying-in Hospitals afford us by any means such correct estimates of the frequency and fatality of placental presentations, as of other obstetric complications: for women do not seek, and are generally not admitted into them, but at or near the full time, while the most common, and also certainly the most dangerous cases of unavoidable hæmorrhage, are found occurring from the sixth to the ninth month. Only two, for instance, of Dr. Collins' eleven hospital cases were premature; the other nine were at the full term. Hence the value, in one respect, of returns like those of the Maternity Charity.

I was very sorry I missed seeing you to-day when you called. Professor Liebig was here at the time.

Believe me, my dear sir,

Very faithfully yours,

J. Y. SIMPSON.

To Dr. Ramsbotham.

Stafford House, London,
26th Sept., 1845.

No. 3.—From Dr. Ramsbotham to Dr. Simpson.

My dear sir,—I thank you much for your letter of yesterday. I had already detected an omission of one case of placental presentation among my published reports, having looked carefully over both the original tables and the summary in the *GAZETTE* since I wrote you to Edinburgh. I could not at first account for it, but now it has become quite clear to me.

For the sake of greater accuracy, and less chance of error, as I thought, I compiled the tables published in the *GAZETTE* for August 9th, of last year, from my *manuscript*, instead of taking them from the published yearly statement; and I find that in the year 1837, one of the shoulder presentations, which was also complicated with placenta prævia, had been overlooked, as regarded the latter irregularity, by me, owing to the manner in which I had entered the case in my column for "Remarks;" so that I left it out, introducing it only as a transverse presentation. Thus my *extra* anxiety for correctness in respect to those tables from which I drew my calculations, led me into a mistake. One death I *purposely* omitted,—and it occurs in the same year,—because, although the patient had been delivered under a placental presentation, that irregularity could have had nothing to do with her death. She recovered perfectly, had been for many days engaged in domestic affairs, though she had never left her house; our superintendence of her had ceased; and on the day month from her delivery she was seized with a fit of apoplexy or convulsions, while in a violent passion, and died almost immediately. From this history you will agree with me, I think, that I am fully warranted in omitting the case as one of death *consequent* upon placental presentation in my synopsis. I have no doubt this woman would have been

restored to health, had it not been for this unfortunate intemperance.

We have already had a correspondence, you may recollect, about the *forty* instead of *fifty*. Both in the *GAZETTE*, and the volume, in the *table* the number stands as 50, while in the calculations founded on the tables 40 is printed instead. Indeed the fault was mine, or a friend's who copied for me; for the calculations are deduced from 40, and not 50; shewing that it is not an error of the press, but one of transcription.

Believe me, my dear sir,

Very faithfully yours,

FRANCIS H. RAMSBOTHAM.

14, New Broad Street,
Sept. 26th, 1845.

No. 4.—*Dr. Simpson to Dr. Ramsbotham.*

My dear sir,—For your last note I return you my best thanks. On Saturday I went down into Berkshire, or you would have heard from me sooner.

I am happy to think that you are convinced that my summing up of your cases of placental presentations is so far more correct than your own, notwithstanding the very great pains you have manifested upon their calculations. If I was anxious to adduce any evidence of the care I had bestowed on the inquiry, I could not desire a stronger testimonial.

In page 725 of your work, the number of placental presentations should stand as 1 in 700·8, instead of 1 in 893·5; and at page 726, the number of children lost in placental presentations should stand as 62·3 per cent., instead of 80·0 per cent.

You will find in my Essay, when published, one or two slight corrections in the tables; and I am sure you will readily grant me, that seeing the difficulty of making out accurately, and at first, *one* set of cases like your own, I may be excused if, in summing up various sets of them, I fell into one or

two trivial errors with Smellie and others, whose cases were scattered, and difficult to collect and compare.

I have seen Dr. Lee's paper in the *MEDICAL GAZETTE* of the 19th, to which your note a few days ago referred me, and have been both grieved to witness its improper tone, and at the same time amused by its odd mistakes. It is confessedly difficult to avoid arithmetical blunders, but surely it is possible to avoid such errors in regard to history and matters of fact, as he has committed. I know not how I have happened to excite so much of his displeasure. He and I used to be good friends. In lecturing, I have always maintained that English midwifery was much indebted to him for pressing upon our notice, and so far confirming, some of the *pathological* views of our continental neighbours, regarding phlebitis, and fibrous tumours of the uterus. It is true that I have, at the same time, constantly looked with distrust upon his anatomical labours, because there he ventured on a field that was quite alien to his other pursuits; and I have ever doubted whether his supposed anatomical discoveries would ultimately prove anything more than mere anatomical errors. His two highest attempts in this direction, have been his paper on the Structure of the Placenta, and his later Essay on the Nerves of the Uterus during Pregnancy,—both published in the *Philosophical Transactions*. The first of these papers was published about 1832, and Dr. Lee himself has lately admitted, that a year or two afterwards, he found that his alleged discovery regarding the placenta, was a pure anatomical mistake. For my own part, I believe he will betimes confess the same regarding the uterine nerves. I know well he brought forward some time ago, from various anatomists and physicians, written evidence of the strongest kind, in fa-

news. It was to my mind
 very strong. Professor Tiedemann published a description and engravings of the Nerves of the Pregnant Uterus about 1822. Dr. Lee began his investigations in 1837 or 1838, or nearly sixteen years afterwards; yet one of the testimonials published by Dr. Lee in support of his anatomical views was so exceedingly determined as to certify against the very progress of time itself, and suggested that Dr. Lee's investigations were anterior to Professor Tiedemann's. See the good-natured testimonial given by Dr. John Davy to Dr. Lee, and printed with the others in the GAZETTE. You are probably aware that Mr. Beck here, has more lately and elaborately pursued the same inquiry into the uterine nerves, having begun it, I believe, to prove Dr. Lee's dissections right, and ending by demonstrating them to be wrong. Some of the gentlemen that certified for Dr. Lee, are now, I am told, quite convinced that Mr. Beck is correct, and Dr. Lee the reverse. Drs. Todd, Sharpey, Owen, Quain, Bowman, and other distinguished anatomists, who have examined Mr. Beck's beautiful dissections, are, I have been credibly informed, no longer in any doubt whatever, that Dr. Lee is altogether in error on the whole subject, and has uselessly thrown away much valuable time on the inquiry. Surely, my conscientious and confessed belief of all this, however, and my trust, with others, in the perfect accuracy of Mr. Beck, is no reason for having recourse to the remarks of those which compose the latter part of Dr. Lee's communication to the GAZETTE.

After reading Dr. Lee's observations in the GAZETTE, I wrote him a private note, in which (I hope) I used no expression of recrimination, and asked him if he would kindly point out to me any other arithmetical inaccuracies he might have observed in my paper. I

received in answer no reply to my request, but he sent me a perverted statement of Portal's cases that had nothing to do with the matter. I knew that he was intimate with Portal's work, and was certainly more than surprised by his deliberate and uncalled for misstatement regarding that author's cases. It must pain every friend of Dr. Lee's and of the profession to see him following such conduct. I am sorry to add, that in another note, he insisted upon repeating his misstatement to me. Of course, I had no alternative but to decline any more of a correspondence in which such principles were betrayed.

Believe me, my dear sir,

Very faithfully yours,

J. Y. SIMPSON.

To Dr. Ramsbotham.

Stafford House, Sept. 1845.

No. 5.—*From Dr. Simpson to Dr. Lee.*

My dear sir,—A few days ago I received from Dr. Ramsbotham a letter, stating that you had directed his attention to some arithmetical inaccuracies in an Essay of mine, published in Dr. Cormack's Journal for last March.

I inclose you a copy of my answer to Dr. Ramsbotham's very kind and gentlemanly letter.

As I am publishing the same Essay in a separate and extended form, and am very anxious it should be as free from arithmetical errors as possible, I shall feel deeply obliged by your mentioning, or noting down for me, any other errors that you may have detected among the figures.

Any one who has worked at medical statistics, of the kind included in the Essay in question, knows how difficult, or indeed almost impossible, it is to go through all the different steps of extracting the required data, making the calculations from these data, arranging and copying the calculations when made, and finally getting them through

the hands of the printer, without some errors. And certainly there is no department of authorship in which one stands more in need of, and ought to feel more grateful for, the kindly correction and assistance of his professional brethren, even though, as in Dr. Ramsbotham's case, they do not alter the resulting statistical fact, or alter it only in a fractional degree. Besides, the investigation is of such a kind, that two persons, with every anxiety for truth and accuracy, may read and interpret differently the very data upon which we have to work. Among Dr. Collins' returns, for instance, of his own practice in the Dublin Hospital, I make out one death *more** from unavoidable hæmorrhage than he does. On the other hand, Dr. Churchill (see the article "Hæmorrhage," in his general work on Midwifery) has given a fuller list of cases and deaths from unavoidable hæmorrhage, in Smellie's practice, than I could find *at the time* in Smellie's Works; and yet he ultimately arrives at the same general statistical fact that I have done, namely, that taking a large series of cases, it will be found that *one out of every three mothers dies* under this presentation of the placenta. In the same way, while Dr. Churchill makes Gifford's recorded cases of unavoidable hæmorrhage amount to 29, I could find only reports of 24; and you state somewhere that he has about 20. Again, in your Clinical Midwifery, you state that Portal's Treatise contains an account of "eight" cases of uterine hæmorrhage from presentation of the placenta; whilst I make out (if I recollect properly) that he notices and describes the results of thirteen or fourteen cases, which he had himself met with in his own practice.

I have intended to look in upon you for some mornings past, but I find the

* See Case No. 11, in his chapter on arm presentations.

early part of the day generally dissipated here by various employments before I well know that the day has really begun.

Very truly yours,
J. Y. SIMPSON.

To Dr. Lee.

Stafford House, St. James's,
23d Sept., 1845.

No. 6.—*From Dr. Lee to Dr. Simpson.*

4, Saville Row, 23d Sept., 1845.

Dear sir,—As you are so much engaged, I should be sorry that you should put yourself about by calling upon me. Respecting Portal's cases, it will be seen that, in my Clinical Midwifery, I refer to eight cases "in which he found the placenta not merely at the mouth of the womb, but adhering to the whole neck of the uterus,"—thus pointedly distinguishing them from the other cases of partial placental presentation related in his work, or referred to without the details being given.—I remain, dear sir,

Very faithfully yours,
R. LEE.

To Dr. Simpson.

No. 7.—*From Dr. Simpson to Dr. Lee.*

Dear sir,—I did not in my last note mention the mistake into which you had fallen, with regard to the exact number of Portal's cases, with any idea whatever of blaming you for an error of the kind. In fact, though you state in your Clinical Midwifery that "Portal's Treatise (1685) contains an account of eight cases of uterine hæmorrhage in which," &c.; you more correctly observe, in your newly published Lectures, that "Portal's Treatise (1685) contains the histories of eight *or more* cases of uterine hæmorrhage, in which he found, on introducing the hand to turn, that the placenta was not merely at the os uteri, but adhering to the cervix all round."

If you had at once allowed to me, that Portal had met with thirteen or

fourteen instances of placental presentation, and that you were wrong in limiting the total number of his observed cases to eight, I am sure, neither I, nor any one else, could have attached any the slightest blame to you; for we are all more or less liable to commit errors, and as I formerly observed, are all anxious to correct them when pointed out.

But I must confess that I do most sincerely grieve and lament to observe the mode and means by which you attempt (in the note I have just received from you), to escape from the numerical error into which you had fallen. For I can assure you that Portal does *not* in his work relate or refer to one single instance of *partial* placental presentation. And I fear I must at the same time believe, that you know all his placental cases accurately, for you have published a lengthened and careful analysis of them in your printed lectures.

I have the honour to be,

Yours, &c.

To Dr. Lee. J. Y. SIMPSON.

Stafford House, 24th September, 1845.

No. 8.—*Dr. Lee to Dr. Simpson.*

4 Saville Row, 25th Sept. 1845.

Dear sir,—I am sorry to differ from you, but it is still my opinion that Portal's book contains the histories of eight cases of complete placental presentation, and that all the others were cases of partial placental presentation.—I remain, dear Sir,

Very truly yours,

To Dr. Simpson. R. LEE.

No. 9.—*From Dr. Simpson to Dr. Lee.*

Dear sir,—The "eight" cases of placental presentation which Portal has detailed at full length, were all cases in which (to use again *your own* words) "the placenta was not merely at the os uteri, but adhering to the cervix all round." Hence, I take it you

will grant that *they* were complete placental presentations; you tell me, however, in your note of the 23d, that in describing those eight cases in language like the above, you "thus pointedly distinguished them from the *other* cases of *partial* placental presentation related in his work, or referred to without the details being given." I have procured here a sight of Portal's work, lest my memory should have possibly deceived me, and find that the other cases (six in number), are as follows. After relating Case 29, in which the head of the child, in its exit through the os uteri, actually perforated through the placenta itself, (the placental presentation being hence complete), Portal adds, that not long afterwards he "delivered a gentlewoman in St. Dennis Street, under the *same* circumstances in the presence of Dr. Linkard," &c. In Case 51, Portal tells us, that the placenta was "placed just before, and quite across the whole inner orifice of the uterus," and "in concluding (I now again quote your own words), the history of this case (51), he states, that in the year 1683 he had completed the delivery successfully in five *similar* cases, all the women having recovered." (Dr. Lee's Lectures, p. 366). "In the year 1683," observes Portal, in his own account, "I delivered five women under the *same* circumstances, &c."

Assuredly, there is not one hint or syllable regarding these "other" cases, or any one of them being *partial* placental presentations, but the reverse.

I feel again compelled to deplore deeply your thus venturing for a *second* time to resort to misstatement, in order to try to cover what was originally a very simple and very pardonable error, regarding the number of Portal's recorded cases. And you must really excuse me if I decline any further correspondence on this subject.*

I have the honour to be,

Your most obedient servant,

To Dr. Lee. J. Y. SIMPSON.

Stafford House, 27th October, 1845.

* The reply of Dr. Lee to this letter was forwarded to us for publication at Dr. Simpson's request, but we take upon ourselves to decline inserting it, as it has no reference to the medical part of the discussion.—ED. GAZ.

Lectures.

CLINICAL LECTURES

Delivered at University College Hospital,

BY DR. C. J. B. WILLIAMS, F.R.S. &c.

[Taken in Short-Hand by our own Reporter, and revised by the Professor himself.]

LECTURE VII.—June 26, 1845.

Cases of Intermittent Fever.—1st Case—Irrregular type—Congestion and tenderness of abdomen—Treatment.—2nd Case—History and remarks—Period of incubation—Tertian fits—Cessation of the fits—Enlargement of spleen and liver—Physical signs—Malarious cachexia—Purpura—Treatment.—3rd Case—History and remarks—Causes of relapse—Quotidian fits—Enlargement of viscera—Dropsy and cachexia—Treatment—Diuresis.—Observations on the pathology and treatment of Malarious Diseases—Explanation of the sequels, dropsy, cachexia, anæmia, &c.—Practical deductions.

I TAKE a group of cases as often as I can, so that we may have an opportunity of commenting on several, and of deducing something like general rules even from the few specimens that come under our notice.

I hesitated whether I would take to-day the subject of rheumatism—of which we have had several instances—or intermittent fever; but I prefer the latter now, because the former will be kept under our observation; we shall have other instances of it occurring, whereas it is very probable that we may not have intermittent fever again until the autumn comes round.

Three cases of intermittent fever have come under notice since I had an opportunity of commenting upon the disease in the winter: Cornelius Riney, Henry Porter, and Adam Plummer. These three cases, very accurately reported by Mr. Routh, may be said to represent different degrees of the disease.

The first case, that of Cornelius Riney, was an example of the milder form, and which we shall see accounted for by the cause that seems to have given rise to the disease. "Aged 45, admitted April 1; by occupation a bricklayer; has resided at Pleasant Row, Camden Town, for the last 20 years. It is a damp and confined situation; the field in the neighbourhood, which consists of seven acres, is very damp, often covered with water and then drying again. His general health has been good, with the exception of coughs. He was never decidedly

ill till three months ago, and at this time he was in rather bad circumstances, being badly fed and clothed, and much exposed to wet and cold. The weather had been some short time before this very rainy, so that the field had been quite covered with water. This had been succeeded by sunny, dry weather, so that the field was drying up at this time rapidly. At this period he was suddenly seized with pain in the epigastrium without any vomiting. In about three-quarters of an hour from the occurrence of this pain, he began to shiver, and continued to do so without interruption for four or five hours, and this was succeeded by profuse sweating, which lasted about the same time. He was very sick and faint during the cold fit, and vomited once. After this attack he felt comparatively well for a fortnight, when he was seized with a second fit, the cold stage of which was of longer duration than in the first fit, but the hot stage was shorter. The fits continued to recur at very irregular intervals—sometimes at the end of a fortnight, which was the more rare occurrence; sometimes more frequently, as often as twice in the same week; but lately he has observed that they have not recurred so often, and that the hot fit has gradually become of shorter duration, whereas the cold has lasted much longer than before, and in the last attack he had, which occurred within a few days after his admission, the cold fit lasted from seven to eight hours, while the hot fit lasted only three hours. The pain in the epigastrium has continued all along, but much less severe than at first. He has not had any regular medical advice until about three weeks ago, when he was admitted an out-patient here. A blister was ordered to be applied to the epigastrium, but not getting better he was admitted into the hospital.

"At present, no rigors; skin hot, but moist; no general pains; feels tired and fatigued; is very restless at night"—just observe that these symptoms are not those of active intermittent fever, but of a state of ill health arising when the fever is subintrant or masked, when there is no regular fit or open struggle against the malarious poison; this is the condition in which he was when brought under our observation. "Colour of the skin pale and sallow; no eruption; prefers to lie on his back, as lying on either side produces pain on one side or the other." Legs not swollen; intellect clear; cannot sleep at night; no headache or giddiness; expression of countenance rather anxious; lips and cheeks pale and sallow; seems rather deaf; other senses not affected. Pulse 96; full. Has a bad taste in his mouth; tongue covered with a coarse whitish fur; abdomen feels hard; says he

is much griped, especially at night, and complains of tenderness of the same on pressure. Lumbar region very painful and tender. There is dulness in the posterior part of the left hypochondrium; the front part is resonant; there is a little tenderness on pressure, and some resistance below the margin of the ribs on both sides, especially in the region of the liver; but percussion yields a resonant sound on both sides; dulness on strong percussion reaches as high as the fourth rib on the right side. Bowels costive. Passes a good deal of urine; as much as three pints since last night; it is turbid, yields a copious precipitate on heating it, but the precipitate is at once dissolved by a drop of nitric acid; (showing, therefore, that it was dependent on the phosphates, and not albumen;) specific gravity, 1015."

Of the nature of this disease there could be no doubt, from the occurrence of the distinct paroxysms which he had described as taking place before his admission, and from the character of those paroxysms, consisting of shivering, followed by the hot and sweating stages, and the comparative freedom from disease in the intervals. We had no hesitation in considering that his present ailments were dependent on the cause that produced the paroxysms, but acting in a different way. I have several times had occasion to explain that ague is only one of the effects of malarious poison, and that instead of always being the most severe result, it is rather a favourable result than otherwise. So long as the fits recur with vigour, and particularly so long as the reaction is marked by the intensity of the hot stage, and the completeness of the sweating stage, and there is a greater freedom from disease in the intervals, so long will the constitution suffer less. It is when the paroxysms become irregular and imperfect, where the cold stage prevails over the hot stage, where the hot and the sweating stage are not sufficiently developed to shake off the poison, that the constitution is most apt to suffer by a peculiar cachexia of which in some degree this patient presented a specimen. But, as I said before, this is an instance of a small degree of disease. It seems to have arisen from a weak dose of the poison, and if we consider the circumstances in which it was developed we see this explained. He lived in Camden Town, a place which has been known to be capable of producing ague, though it prevails there by no means with so much intensity as it does in districts which are decidedly marshy. Therefore, when we come to describe ague from countries more highly malarious, we shall find that there is greater intensity of the symptoms, and a development of the disease in a more highly wrought form.

I will mention the differences of the pathology of the disease, and the different course which it takes, after I have spoken of the other examples; but I may mention, with regard to the treatment of this patient, that he was put under quinine in three-grain doses, three times a day. He had one slight fit the day after his admission. About nine o'clock he was seized with a shivering fit, but he fell asleep, and did not know how long it lasted; after that he had no other paroxysm. On the 5th there is the report:—"no shivering fit, but only a feeling of coldness over his body for two or three hours," something approaching to a fit; but from then till the time he went out he had no recurrence, and what he chiefly suffered from was internal congestion, causing a painful and distended state of the abdomen, which gradually subsided for the most part, but left behind it great pain in the back. He got rid of the pain in the bowels under the influence of aperients, with a little belladonna, but the pain in the back still continuing severe, he was, on the 26th of April, cupped to ten ounces, after which he became perfectly well, and was dismissed cured on the 1st of May.

The next case I named was that of Henry Porter, aged 36, admitted March 26th—a farmer's labourer by occupation. "Accustomed to drink three or four pints of beer daily, and to have animal diet. Generally has been well fed, except for one week last August, when at the Isle of Sheppy. He usually resides at Finchley, which is dry and airy; states he has lived there for the last eight years, except now and then when he went for a short time to seek for work. At the latter end of August he went with Plummer," the patient whose case I shall mention presently, "to the Isle of Sheppey, near Sheerness, for a job during harvest. He was there engaged seven days getting in the wheat which had been cut. The weather was very rainy, and the ground was damp, so that he was constantly wet through all the time, not even changing his clothes at night. He slept in a shed, a place specially reserved in harvest time for labourers. This was built in a comparatively dry place, and rather elevated from the ground, but it was imperfectly closed in, so that the wind came through it freely, but still it was very damp. Behind it, at some short distance, there was a marshy yard; the whole neighbourhood at some distance around is very swampy. He was very badly fed at this time, taking only bread and butter, and cheese, and very little of that, and without liquors of any kind." Observe, he had been accustomed to live well, with three or four pints of beer daily, so that this to him was peculiarly hard living. "He did not feel any inconvenience from the exposure

till about a fortnight after, when he was suddenly seized one morning with a shivering fit, which lasted about one hour." Here we see a period of incubation, as it is called, during which time the seeds of the malarious poison must have been in his system, but did not operate. This is common with many morbid poisons. It has been observed, with regard to intermittent fevers in tropical climates, that when ships touch at malarious places, and the crews go on shore, they suffer no inconvenience till two or three days after they have returned on board. From this has arisen a question as to whether the fever arises from that endemic source, or from something in the ship itself. In this case the man had left the neighbourhood, and come entirely away, at the time the shivering fit came on. "This shivering fit was succeeded by a copious sweating, which lasted an hour, and then he felt comparatively well, only occasionally a little sick and faint. These attacks continued about six weeks, recurring regularly every other day exactly at 11 o'clock in the forenoon. It was sometimes more severe than at other times, but he did not observe any regularity in this modification. It was also accompanied with an eruption of a sort of yellowish colour, which from his description seems to have been papulæ, and the papulæ were at first very hard. This used to disappear in the course of a night or so, and then a roundish greenish yellow spot remained. Before these came out they were generally preceded by slight tenderness of the muscles, but no other uncomfortable feeling. They did not appear regularly at all, and sometimes recurred as much as thrice in the same week.

"Towards the end of six weeks, he observed in his fits that the cold stage was of shorter duration than the hot fit, and this improvement,"—for it is an improvement—"continued; but the disease regularly kept up its tertian type to the end. After this time the shivering and hot fit ceased altogether, and he only occasionally felt a little chilly, especially at night, only five minutes or so, and there was no actual rigor." Here is the termination of the aguish part of the disease. "But still he has never been well since, every now and then feeling weak and faint. Shortly after the fits had ceased, he began to be seized with pains all over his body. The parts so affected swell, and remain in this state sometimes as long as three days together, the swellings sometimes ceasing in the course of the night. His appetite up to the last week had greatly improved, but during the last week he has felt more sick and faint than usual, and lost his appetite; he has never kept his bed.

"At present the colour of his skin is sallow; temperature natural; occasional

sweating at night. He is often seized with severe general pains about the body, especially the joints and legs, which afterwards swell, and remain so for two or three nights. He feels tired and very weak; restless at nights. There is at present an eruption over his body, consisting of purplish, red, very slightly elevated spots, from the size of a pin's head to that of a large pea. The colour does not disappear on pressure"—showing therefore that the colour of the spots is dependent on extravasated blood—having therefore the character of purpura spots. There are one or two bluish black maculæ on the lower extremity, and just below the knee one of a purplish red colour. The greenish yellow colour of the maculæ is more marked on the belly and upper parts of the body, but they are more numerous and occasionally papular on the lower extremities. The legs are swollen, and pit on pressure. Occasionally at night he is seized with such severe pains all over the body that he is unable to move at all for some time. Head occasionally confused, but no actual delirium. Headache and giddiness present to-day; lips rather pale. Some spinal tenderness in the lumbar region. Occasional pains in the chest; pain and occasional palpitation of the heart. The heart-sounds are quite healthy. Pulse 82, very small, jerking. Mouth dry; tongue rough, smooth at the edges, but not furred. There is much tenderness in the region of the spleen, which is enlarged. There is dulness at the lower part of the right lateral region, which extends to the front of the stomach; an impulse at the right side is communicated to the hand when placed in front over this part."

This is one mode of ascertaining the density of the body; there are various ways of determining it—percussion is one; the sense of resistance is another. Every one who has the principles of natural philosophy at his finger ends, should be able to bring them to bear in a variety of ways to test the physical condition of the body. If on either side there is a tumor extending to the front, or from the front to the back, and that tumor is a solid continuous one, and an impulse is communicated to it from the side or back, that impulse is much more sensibly transferred to the front than if no such tumor were present. If there is a great amount of congestion of the viscera, and the enlargement of the spleen or liver is in thickness rather than in superficial extent, this may be almost the chief means by which we can determine the presence of that tumor, or at least it is a means to be taken in conjunction with other means, and sometimes is very useful.

"Those parts"—which are the seat of this increased density of viscus,—“are also

tender. Appetite very bad; no nausea; rather thirsty. There is slight fluctuation in the lower part of the right iliac region, and dulness on superficial percussion, showing the presence of a thin layer of fluid; at this part very thin; more behind, nearer the lumbar region, it is much more evident, and appears about one inch thick in that situation;" proving therefore the presence of ascites in addition to the anasarca which affected the legs. "Liver reaches to two inches below the margin of the ribs"—this is ascertained on percussion, "but the margin is thin; the upper surface does not appear to reach higher than usual. There is a distinct resonant space at the epigastrium, between the liver and spleen"—showing an interval between these two organs. The urine is scanty and dark coloured: specific gravity, 1020. There is no albumen, nor excess of urea in it."

The character of this disease is sufficiently evident from the former attacks of ague; and here is a man, like the former, in a state of ill health after ague, although the ague itself was not in active operation—the fits not continuing—a case in which the ague had become sub-intrant or masked. The system was accustomed to the poison, and there was not the ordinary re-action against it, or else the poison had expended itself; but the effects of the poison were still present, and were producing those various symptoms that I have now been describing. These symptoms were chiefly those of congestion of the viscera, imperfect secretion, and a disordered condition of the blood, manifest by the eruption in various parts, and by the oedema and dropsy of the belly.

This man was put under the use of disulphate of quinine and iodide of potassium, of each two grains, thrice daily, which he continued till the time of his departure, and under the influence of which he improved in strength and colour; he also required aperient medicine, and particularly diuretics, to rid his system of the bad matter which caused the cachectic condition under which he laboured. He was dismissed on the 24th of April in a convalescent state. The congestion of the viscera had been reduced, the tumor of the spleen and the liver having disappeared, and all that remained was some amount of weakness, and the occasional appearance of purpura spots—a remnant of the disease, but not of sufficient importance to prevent his discharge.

The next case is that of Adam Plummer. He was under treatment for the same affection in the winter, and I then made him the subject of a clinical lecture; therefore I will not dwell long upon his case, but only mention the chief heads.

He obtained his disease in the Isle of

Sheppey, under the same circumstances as, and was in fact with, the last-mentioned patient, but he had it more severely. When he came into the hospital before, he presented not only intermittent fever with paroxysms of considerable severity, but he was likewise excessively weak, pallid, bloated, and dropsical. His viscera were very much enlarged; both the liver and spleen were increased to the size of large tumors, and he exhibited other appearances of malarious cachexia in a very high degree. He was cured in the spring by the same remedies that were adopted afterwards.

"He was re-admitted April 29. He had been living at Finchley since he left the hospital on the 6th of March, but has not been able to do any work. He had not been living well prior to this fresh attack, though he had not actually been in want." We had been keeping him extremely well latterly; he had been accustomed to full living, and it is very likely that on his departure he missed the increased diet, higher than we usually allow. "He had not caught cold, or been exposed to any fresh cause of attack, but he had not felt well, being very weak. On the morning of Monday previous to his re-admission, he was seized with a shivering fit, which lasted about an hour and a quarter, when the hot fit came on, and that lasted about ten hours. The skin was hot and comparatively dry. He did not sweat, as in his fever attacks. The urine passed was also scanty. Since that period the fit has recurred regularly at 8 o'clock every morning, and lasted about the same time. The hot fit has somewhat been lengthened, perhaps twelve hours altogether, but he has never complained of sweating. His urine has been scanty, not amounting to much more than half a pint in the twenty-four hours.

"Present state. His skin is hot; the temperature of the surface is 98°. Says he is very weak and fatigued; rather restless. The colour of the skin is sallow, and has a yellow tint; says he is a little thinner than when he left the hospital; feels confused in the head; has headache; expression of countenance anxious; cheeks sallow; respiration 20 in a minute; pulse 84; complains of a bad taste in his mouth; tongue not much furred; appetite very bad; feels very thirsty; very sick, and frequently vomits anything he takes. There is considerable tenderness on pressure over the liver and spleen. The liver reaches three inches below the margin of the right ribs; the spleen about four inches below the margin of the left." Thus both these organs were again enlarged. I would have you observe, that when he left the hospital both had been reduced to their normal dimensions; there was, therefore, with the fresh

attack, this increase in the size of the viscera. "Passes but little water; it is acid, dark; contains no albumen, nor excess of urea: specific gravity, 1017. He is not aware of any cause for the fresh attack, unless living at Finchley should have brought it on again."

We may assume that to have been the cause. I know that some of the effects of malaria are produced in the neighbourhood of Finchley; intermittent neuralgia, for example. But it is not always necessary that malaria should be re-applied in order to produce a relapse. Many persons who have left malarious districts altogether, suffer a relapse of ague and other forms of periodic disease from mere exposure to cold, or from other circumstances injuring their health. Although he had not been externally exposed to cold, yet the weather was exceedingly severe at this time, and he missed the good diet and shelter to which he had been accustomed here. If, as is probable, there was still some malarious poison in the system, this might again prevail to produce a fresh attack. However, we cannot stop to discuss that question; we see that the disease was reproduced, and not only the periodic attacks, but the internal effects also, manifested by congestion of the organs, the diminution of the secretions, the occurrence of a dropsical condition, and a cachectic state, as shown by the pallidity and the loss of flesh and strength.

He was put under much the same treatment as before—medicine, to increase the deficient secretion for a few days, before he was given the quinine. We exhibited calomel, conium, a saline diuretic, and haustus sennæ, for two days. My reason for this was the probability that the quinine would not at first have remained on the stomach. As soon as the bowels had been well opened, and the urine was somewhat increased, he was put on quinine again in larger doses—six grains, which he continued to take without any further change, except the addition of a little iodide of potassium—up to the time of his discharge, June 4th, when he was quite well. The fits were stopped within three days after he took the first dose of quinine. The report on the 3rd was, that a fit came on about 4 P.M., and lasted for ten hours; but on the 7th it is stated that the patient has had no recurrence of a fit, and is altogether better. He continued to get better from that time; there were slight threatenings of fits occasionally, but never amounting to a fit, and the enlargement of the spleen and liver was speedily diminished.

There was one peculiarity in his case which I mentioned in speaking of him on a former occasion, viz., that as the enlargement of the liver and spleen went down, the dropsical swelling of the legs increased, and

did not diminish till he passed a very large quantity of water. The quantity of urine which he passed was excessive, it amounted to disease—to a form of diabetes, and it was not merely water, but the report will confirm what I am saying, that it was observed to exhibit a considerable increase of the solid constituents of urine, and went on being made for a considerable time. This may be perfectly explained; I made some observations on the pathology when I spoke of the case before, and I shall now only briefly refer to it.

In taking a review of these cases, I may notice, with regard to Riney, we had the paroxysms of intermittent fever, but not very strongly developed; they were not daily, nor even every other day, but occurred at irregular intervals. If you see much of intermittent fever in malarious districts, you will find that there are a great many cases that are neither quotidian, tertian, nor quartan, nor do they belong to any type at all. There are irregular paroxysms occurring every now and then, in one case without any cause; in another, arising from an obvious cause. The malarious poison alone is often not enough to produce the fit; but some additional cause, such as exposure to cold, error in diet, or something else, disturbs the system, and brings about the fit. Thus ague will become developed as the result of an accident. A person falls down and sprains a joint, breaks a limb, or becomes bruised, and the seeds of ague which were in the system before now manifest themselves. Those who see most of ague are more fully aware of this than you would be if you took your account of intermittent fever only from what you read in books. This patient exhibited one of the irregular forms of the disease. The paroxysms had almost ceased before he entered the hospital, but the disease had not ceased. He was in a pitiable state, suffering greatly, and that illustrates another point in the pathology of the disease.

Malarious influence certainly operates on the body by greatly disturbing the circulation. How it produces that effect it might be difficult to explain, and we have not time to stop to investigate it; but this is a fact, that it causes great internal congestion, and a corresponding amount of intro-pulsion of blood from the surface. The surface becomes pallid, exsanguineous, while the blood accumulates in the internal organs. This seems to be the immediate, the essential effect of malarious poison, and it occurs whether there be a fit of ague or not. A fit of ague is a re-action against this irregularity of the circulation—that is, increased action of the heart and blood-vessels, under the influence of which the circulation is in some degree set right, the congestion of the

internal viscera is in a great degree reduced or diminished, the secretions which had been stopped are restored; the pallidity of the surface is in some degree removed also, and the balance of the circulation again established. In this way, we see that the paroxysm of intermittent fever is a sort of struggle between the protective power of the system and the poison; and hence we can easily perceive why, when the paroxysm of ague is imperfect, the effects of the disease on the system are more severe, and why the body actually suffers more under these circumstances than it does where the fit is complete and vigorous.

The same observation is applicable to the case in which the cold fit is long, and the hot and sweating stages short and imperfect. In these cases, although there is re-action, it does not overcome the disturbance of the system which the malarious poison has produced, and therefore leaves it accumulating in it. All three of the cases illustrate this. Although there had been paroxysms, yet the disease gained on the constitution; the cold fit became longer as the disease prevailed, and the health declined in proportion.

Great internal congestion is the common effect of malarious influence, and it continues sometimes after the paroxysms have ceased, and particularly where they are irregular and imperfect. Such appeared to be the case with regard to Riney, and all that he seemed to be suffering from was the congestive disease left by the intermittent fever. He had enlargement of the viscera; imperfect action of the secreting organs; weakness of the body; pallidity of the surface; and latterly he suffered a great deal of pain in the internal organs, associated with this congested state. The greater part of this was removed by the quinine, but the affection of the liver and back was not entirely relieved until he was cupped.

The next case is that of Porter. He suffered a degree further. He not only exhibited the exsanguineous condition of the surface, and internal congestion, but he had from the same cause become dropsical, and in addition to this he had cutaneous eruption over his whole body. From what did the latter arise? Is it a direct consequence of the action of malarious poison? By no means. We do not see such an effect occurring constantly; but every now and then there are cases in which all sorts of curious sequels appear in the course of protracted illness after intermittent fever. The eruption which was present was one of a papular, tubercular, and petechial character. It seemed to present a combination of all these classes of disease. It came out here and there in minute elevations, corresponding with papulæ; in other parts large blotches, and so elevated as almost to amount to tubercles;

but the blood, as I stated before, was not in the vessels, inasmuch as the redness could not be dissipated on pressure, and this constituted petechiæ—the disease belonging to the genus either of purpura, or lichen lividus, some of those affections in which one class borders on another. But the pathological cause of this affection we have no hesitation at all in referring to the disordered condition of the blood, resulting from the operation of malarious poison on the system. But we are not content with that explanation; we were to depend on that only, it ought to occur in a greater number of cases; but I think it may be said to depend not directly on the operation of the malarious poison on the system, but on the occurrence of congestion which had taken place in the viscera, and which had continued so long that the blood had become degenerated.

Let us illustrate this by going on to the case of Plummer. He had all the affections that occurred in Porter's case, and some besides, except the eruption. He had great congestion of the internal organs; remarkable sallow pallidity of surface, presenting that peculiar appearance which has been so often remarked in the inhabitants of malarious districts. He had dropsy, not on this, but on the former occasion, to a great extent, and a corresponding diminution of the urinary secretion. His urine was albuminous. In the case of Plummer all these effects were carried to a great degree; but there was this difference—as the tumors of the spleen and liver were dissipated, the urine became very much increased in quantity. First of all the dropsy increased, then it diminished under the influence of excessive diuresis, but there was no eruption on the skin. In Porter's case there was inflammation of the skin following the diminution of the tumors, but in the other there was not. On referring to the report, you will find that Porter not only complained of this state of the skin, but of pain in the bones and great uneasiness, all arising no doubt from the circulation of bad blood by the excessive diuresis.

But how did the blood become so bad? You may say at once, from the action of malarious poison. That, no doubt, is the first cause, but I think it did not operate directly. I believe the true cause was that congestive condition of the internal organs which malarious poison produces. I could illustrate this by other cases, in which congestion of the internal organs takes place, and afterwards the same cachectic disease results, the same tendency to dropsy, to diabetes, to diseases of the skin, or rheumatic affections consequent on irritation of the depraved circulating fluids.

As this is a matter rather important, I will occupy two or three minutes in ex-

plaining it. The ascertained effect of malarious poison on the system is, to cause a great amount of congestion of the internal organs. Blood accumulates in them, and so long as it accumulates it does not circulate, it does not undergo those changes which we know to be necessary for its reparation and its very existence in a state of integrity. Blood, whether accumulated in a part or circulating, is perpetually prone to chemical change. In the worst forms of intermittent fever, the effect is aggravated by the great intensity of malarious poison which rapidly overcomes the vital powers of the system. What do we find in hot climates? Intermittent fevers assume a malignant form, they become typhoid nearly in their commencement; that is, accompanied by an enormous amount of congestion in the internal organs, and by a palpable change in the condition of the blood in them. The spleen, in the case of the Walcheren fever, was represented by writers as resembling a bag of tar, the blood being as black as pitch. A similar account is given of pernicious intermittents of Italy, in which the spleen is so gorged with blood that it sometimes becomes ruptured, and gives exit to a mass of corruption. The blood not only stagnates, but accumulates in an altered state, prone to decomposition. In this country we have no causes operating in such intensity; the effects, therefore, fall short of this; but even here the blood so accumulated must necessarily be disordered. Many facts seem to prove that wherever there is an accumulation of blood in an organ, that blood does not undergo the usual process of circulation and purification; there noxious matter is engendered; the blood is, as it were, destroyed for the purposes of the economy; and if, under a change of circumstances, it is restored to the circulation, instead of being available for the circulation, it has to be removed as excrementitious matter unfit for the body.

Can you now see an explanation of these cases? Can you see the reason why, after the tumor of the spleen, after the tumor of the liver, and in one instance of the kidneys, subsided, the dropsy rather increased than diminished? why the pains of the limbs recurred? why in one case the eruption became very remarkable? why in another the urine was secreted in excess? All these are nothing more than the results of the bad blood being returned to the circulation, and disturbance arising from that return.

And this at once leads us to suggest the proper line of treatment in such cases. But one word more before I go to the treatment. I have mentioned again and again the subject of anæmia as present in intermittent fever. We saw it illustrated in all these cases—there was anæmia to a high degree.

This might be said to arise from the quantity of blood accumulated in the internal organs; but not from this cause only. The blood is lost not only by its stagnation in the internal organs, but the whole mass is damaged by the return of bad blood back to the vessels, and hence what is so remarkable in a high degree in warm climates is explained, namely, the poor, impoverished state of the blood. It has been a matter of doubt among physiologists as well as pathologists, how it is that disease of the spleen so peculiarly produces this anæmia. This is said to be inexplicable, inasmuch as removing the spleen by experiments from animals, or by disease in the human subject, does not appear to be followed by the anæmia. Therefore it cannot be a deficiency of the spleen, or its absence, that causes the anæmic state in question: it must be that there is some noxious influence exercised by the spleen in a diseased state, which impairs the making of blood: these large diseased spleens are bags of spoilt blood, the return of which into the circulation injures and reduces the other blood, and keeps up a continued cachexia. Here, then, we find a sufficient explanation. The same observation is in some degree applicable also to typhus fever, typhoid pneumonia, prolonged asphyxia, and narcotism, and other affections in which prolonged stagnation of blood forms a prominent element. You can now understand why in warm climates persons with diseased spleens will not bear any weakening measures, and will not bear mercury; their strength and reparative powers are sapped by the morbid leaven which is continually poured out from the diseased organ.

This suggests to us that in the treatment of disease arising from a malarious influence, we have not only to cure the paroxysms by anti-periodic medicines, as they are called—by tonics, which seem to operate by preventing or removing the internal congestions—but we have likewise, as a leading indication—an indication which prevails the more the longer the disease has lasted, and the more visceral disturbance it has produced—to promote the elimination of the injured blood from the system. A great deal of the blood is bad, and never can circulate again comfortably in the vessels of the system; and to rid them of this effete matter, you must keep the drains free; you must increase the excretions, at the same time that you are giving anti-periodic medicines. Lastly, you are to attempt to fulfil a third indication—that is, to restore what has been lost, by promoting the formation of good blood, which is to be effected by general tonics, particularly iron and good living—nourishing diet—as much as the digestive organs can bear.

Original Communications.

ON THE POSITION TO BE MAINTAINED IN THE TREATMENT OF DISEASE OF THE HIP-JOINT, IN THE YOUNG.*

By ASTON KEY, ESQ.

THE insidious progress of strumous disease of the hip-joint, the division of the disease into its several stages, and its usual termination in a greater or less degree of anchylosis of the joint, are, I presume, so well known to those whom I have the honour of addressing, that I shall forbear to enter minutely into the pathology of the disease: my object in these remarks is to point out the inconvenience of the deformity that is almost always found to attend convalescence, the causes that give rise to it, and the best mode of preventing it.

The first change usually observed in the relative length of the two limbs is the temporary elongation or shortening of the affected limb, according to the position which the patient maintains in the act of progression in the earliest stage of the affection, when a sense of weakness rather than of pain is found to characterize the disease. In the commencement of the affection, the patient throws the weight of the body instinctively upon the sound limb, and merely steadies or balances the body by means of the unsound limb. If the foot is carried forward and placed flat on the ground, the same side of the pelvis is carried forward and drops, giving a lengthened appearance to the limb. If, on the other hand, the unsound limb is not advanced much forwards in progression, and the patient rests on the toes, the pelvis is carried upward on that side, and the limb appears to be shortened. Both these states are usually only temporary, and disappear if the patient is prevented walking, and is made to lie down. The pelvis regains its natural position as the disease in the joint yields.

To those who have seen much of this affection it is almost needless to remark, how rarely it is seen in the very early stage, at a period when properly applied remedies can restore the joint to its previously healthy state. The

insidious nature of the attack disposes medical men and parents, alike unsuspecting of its real nature, to regard the affection as one merely of weakness, until unequivocal symptoms evince the commencing disorganization of the articular cavity.

The second stage of the disease is no longer, as the first stage has been, one of erythema of the synovial lining of the joint, but assumes a more active form of inflammation, extending to the more dense parts of the capsule and cartilage, and is attended with severe pain in rotation and abduction of the limb. Often, in the earliest part of the second stage, the limb will not admit of perfect extension, and by careful examination of the joint it may be discovered that the thigh is permanently flexed on the pelvis. It is this state of the limb to which I wish to direct your attention, as fraught with the worst consequences to the patient.

This state of flexion of the femur on the pelvis usually takes place slowly and imperceptibly, but sometimes it is rapidly induced by a sudden attack of inflammation in a joint that has previously exhibited signs of disease in its mildest form. This is the worst form of the disease, so far as the deformity of the joint is concerned; for the intense pain which the patient experiences on the slightest movement of the limb induces her to seek for ease in positions that add greatly to the distortion of the limb by the obliquity given to the pelvis. The patient is seen lying usually on her sound side, with the affected limb drawn up to nearly a right angle with the pelvis. As the patient lies on her side the affected limb appears to be three or four inches shorter than the other. When she is placed on her back, which position she assumes with difficulty, and the bearings of the two patellæ, and the spinous processes of the ilia noticed, the former are seen to differ as much as from two to three inches, while only a difference of an inch is perceptible in the level of the iliac spinous processes. This would seem to shew that the limb was actually shortened; such, however, is not the case, and by examination of the pelvis it will be seen that the twist of the pelvis on the lumbar vertebræ, by carrying the affected joint backwards, is the cause of the great shortening of the limb.

* Abstract of a paper read before the Physical Society of Guy's Hospital, October 5th, 1845.

During the stage of inflammation it is impossible to use any means of counteracting this distorted position of the pelvis, and by the time that the patient is able to bear extension so as to restore the pelvis to its natural bearing, and to diminish the angle which the femur makes with the pelvis, the parts have become so fixed in their new position as to render it difficult to alter their position, and impossible in the majority of cases to restore them to their natural bearings. The consequence is, that when the patient is convalescent with a somewhat stiffened joint, the foot cannot be brought down to the ground, and a shoe with a sole of two inches is required to enable her to walk with the foot flat on the ground.

How is this state of things to be prevented? The only remedy for the evil is in every case of disease of the hip-joint to maintain the straight position, as soon as the nature of the affection is ascertained.

It is a position applicable in all stages of the disease.

In the early stage, characterised only by a slight limping in the gait, or by an occasional slight pain in the knee or thigh, it possesses the advantage of maintaining the joint in a state of complete repose. The articulation being at rest, the muscles do not act, but remain in a passive state. On the contrary, when the limb is kept bent with a pillow placed under the knee, a position usually resorted to in the early stage, the pelvis and thigh in a child are continually in motion; little or no pain is felt by the little patient, and injunctions to preserve rest are made in vain. In the bent position, therefore, rest, one of the most important elements in treating a diseased joint, is not maintained, and the disease, therefore, fails often to be arrested. By a long spint applied along the outer side of the limb, and made to extend from the toe to the axilla, entire rest is given to the joint, and absolute inaction of the muscles preserved. I believe, from what I have seen of this stage of the affection, that the arrest of the disease is greatly expedited by the entire tranquillity obtained by the straight position in conjunction with the mercurial treatment.

The principal advantage of preserving the limb in a straight position is seen

in the second stage of the disease, when, under the united effects of inflammation and ulceration of the cartilage of the joint, the tendency of the flexor muscles to contract induces such a degree of deformity in the lumbar vertebræ, pelvis, and hip-joint, as, when once allowed to take place, can never afterwards be wholly remedied. The position on the back is not irksome to the patient, nor painful, but is borne with cheerfulness and without complaint, because in the movements which the body undergoes the diseased joint is kept at rest.

The course which abscess takes when suppuration takes place in the joint seems to be in some degree modified by the straight position. When the limb is allowed to bend upon the pelvis, matter is usually formed at the back part of the joint under the glutæi muscles, or at the side of the joint on the anterior margin of the glutæus medius. But when the straight position is observed, the suppurative action is inclined to the fore part of the joint, and the collection of fluid is formed on the outer edge of the iliacus muscle, by the side of the tensor vaginæ femoris. This course of the matter may be accidental; but in two cases now in the hospital suppuration has taken this course, one having burst and discharged itself; and in the other case the abscess is making its way towards the surface in the same direction. I know of no inconvenience attending this peculiar course of the abscess; it is as easily managed, or perhaps more so, than when it occurs on the posterior point of the joint. But there is an advantage gained in the advanced stage of the disease too important to be passed over; namely, the prevention of dislocation of the head of the bone on the dorsum ilii; an occurrence, though by no means frequent, yet found sometimes to take place, and greatly adding to the deformity and shortening of the limb. It can only occur in the flexed position of the limb, which thrusts the head of the bone backward against the capsular ligament and posterior part of the acetabulum; and these structures, together with the head of the bone, being partly destroyed by the ulcerative process, the former gradually escapes from the cotyloid cavity, and becomes lodged upon the dorsum of the ilium.

The state of ankylosis in which this disease usually leaves the joint requires a concluding observation in reply to any objection that might be raised to the utility of a limb ankylosed in a straight line with the body. The only inconvenience arising from it occurs in the sitting position, in which the patient being unable to flex the limb sufficiently to sit on a chair in the usual manner, is compelled to drop the affected limb in a nearly perpendicular posture, and to sit with the pelvis resting on the side of the chair. This is the only evil attending the straight position, and is more than counterbalanced by the uniform length of the two limbs, and the absence of almost all lameness in the act of progression.

Care, however, should be taken to prevent the patient bearing too early upon the unsound limb during convalescence, when the straight position has been observed in the treatment of the case; for a sense of weakness, as in the first stage of the disease, induces him to raise the pelvis on that side in order to prevent much weight being thrown upon the weak limb. The effect of this elevation of the ilium is to curve the lumbar vertebrae in a lateral direction; and this distortion becomes permanent.

RELATION BETWEEN THE EXTENT OF THE SURFACE OF THE BRAIN AND THE INTELLECT.

MR. BAILLARGER terminates a memoir upon this subject with the following conclusions:—

1. That the brain may be almost completely unfolded by gradually removing its white substance.

2. The extent of the brain thus unfolded is 1700 square centimetres (= 668 square inches.)

3. The human brain has, proportionately to its volume, a much less extent of surface than that of the inferior mammifera.

4. We cannot fail to err seriously if we attempt to determine the relative extent of the surface of several brains of different volumes, by looking to the number and extent of the convolutions only.

5. The degree of development of the intellect, so far from being directly proportioned to the relative extent of the surface of the brain, seems rather to be in the inverse ratio thereto.—*Gazette Médicale, and Dublin Med. Press.*

ILLUSTRATIONS OF THE INTEREST AND IMPORTANCE OF THE STUDY OF CASES OF SUDDEN OR VIOLENT DEATH.

BY ALEXANDER HARVEY, M.D.

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[Continued from page 1019.]

III.—Of the study of cases of sudden death as illustrative of the modes in which diseases prove dangerous or fatal to life.

THE practical interest and importance of a knowledge of this part of the history of diseases, lies in its enabling us to form a proper estimate of the danger and probable issue of any disease, and in giving precision to our ideas regarding the main objects of practice in the treatment of it. It is quite obvious, indeed, in respect to this last, that "it is only by anticipating the kind of fatal termination which is most probable in each case, that we can expect to be guided to a rational and scientific selection of remedies."*

Now, there are three leading facts as to most of the diseased states of the living body, which, with reference to prognosis and practice, it is necessary to keep constantly in mind. The *first* is, that they are essentially temporary in their nature, the morbid actions subsiding after a time. The *second*, that they have a natural tendency to terminate favourably of their own accord; and that there are provisions in the economy for obviating their injurious consequences, and securing the restoration of the natural structure and functions of the parts affected. The *third*, that they are nevertheless liable during their progress to the occurrence of changes, which may in the meantime or subsequently be fatal. These changes sometimes form a part of the diseased actions themselves; at others they are extraneous or incidental to them. They vary in their degree, and are just as temporary as any of those actions; and, therefore, if we can but keep them within due limits, or prolong or maintain life till they have subsided, all will be well.

* Alison, Outlines of Pathology and Practice of Medicine, p. 31.

These propositions may be illustrated by a reference to one or two diseases. Take, first, a disease where the dangerous changes are extraneous to the morbid action constituting that disease. Such an one is laryngitis. The inflammation would in due time wear itself out: viewed irrespectively of the part it occupies, it has as strong a tendency as other diseases of the same kind to terminate favourably; and the inflammatory effusions, plastic, serous, or purulent, or any ulceration consequent upon it, would in due time be removed or healed up. But while yet running its course, and before there is time for its spontaneous abatement, or for the restorative provisions of nature coming into play, the disease is liable, owing to its peculiar seat, to the occurrence of a change that may be fatal—a change, however, which forms no part of the morbid action itself. That change is *the closure of the glottis*, produced either by spasm of the muscles of the larynx, or by the inflammatory effusions. The patient is thus threatened with death from asphyxia, and, if the danger be not averted, will certainly perish. But, by making an opening into the windpipe below the glottis, we have it in our power to disconnect the disease from that incidental change, and thereby obviate the danger.

Take now a disease where the dangerous changes form part of the morbid actions. Fever is a disease of this kind, and offers various illustrations to the purpose. To a far greater extent than inflammation, this disease tends to run a definite course, and to subside favourably of its own accord. Of the morbid actions constituting it, *stupor* forms an integral part. This stupor, however, varies in degree, and may either be very slight, or amount to perfect coma. By and by, it would subside with the decline of the fever, and will do so if it be not to a degree to cut short, meanwhile, at once the life of the patient and the disease itself. Again, *an enfeebled state of the circulation*, preceded or not by excitement, and varying in degree, is part of the train of morbid actions. With the subsidence of these the circulation would regain its wonted vigour, and will do so if it be not previously depressed to such a degree as to fail altogether. In regard to the stupor, the obvious indi-

cation is, either to prevent it passing into complete coma, or, in the event of its doing so, to maintain the respiration artificially. The latter is, unfortunately, a purely *theoretical* indication; the other is, to a considerable extent, perhaps, within the power of art. With respect to the depressed state of the circulation, the indication is, to support that function.

If these views are well founded, while they teach us a lesson of caution in judging of the efficacy of remedies in the cure of diseases, and admonish us not to attribute too hastily their removal, in individual cases, to the remedies made use of during their progress,—seeing they may have subsided spontaneously, and independently, or even, where improper treatment has been resorted to, in spite of the remedies employed,—they clearly shew us, also, that the grand object of practice in the treatment of diseases is comparatively limited, and ought always to have special reference to the obviating, by appropriate means, any unfavourable change that may spring up during their progress,—in one word, *to obviating the tendency to death*. If we can but succeed in this, nature will do the rest for us, and that in virtue of the temporary character of the diseased actions, and their natural tendency to terminate favourably. Doubtless, other objects of practice exist and require attention, but they are manifestly of a subordinate kind.

Every one familiar with the writings of Dr. Cullen must remember his “memorable injunction,” in laying down the treatment of fever, “to form the indications of cure upon the view of obviating the tendency to death;”^{*} and every one that rightly appreciates the facts just stated in regard to the natural history of diseases, will recognise in that injunction a practical principle of the highest value, and applicable to the treatment, not of fever only, but of many other diseases.

Of the whole series of changes, therefore, which constitute or may incidentally be connected with a disease, the most important for us to *understand* are those which tend to a fatal termination. These, in other words, are the changes which constitute what is technically called the *modes* of death.

* First Lines § 126.

And of the whole combination and succession of symptoms which characterise or attend a disease, the most important for us to be familiar with, and know the import of, are those which indicate that tendency, and the measure of it; that is, indicate what mode of death is threatening, and the degree in which it obtains.

But if, as happens in investigating the nature of diseases, we confine our attention exclusively to the phenomena of diseases, we shall have great difficulty in arriving at a clear knowledge of this part of their history. The multiplicity and complexity of the morbid actions render it difficult to distinguish those by which they become dangerous to life; and when they prove fatal, to make out the rationale of this event. And the like circumstance in the symptoms of diseases, makes it equally difficult to discriminate those by which danger is indicated, and thus to connect the sign with the thing signified. The dangerous tendencies, too, and the fatal event of diseases, are in themselves often complex; and "in the course of the same disease, and even at different periods of the same case, death may be threatened in very different ways." Such are the difficulties with which the study of the fatal tendencies and the modes of fatal termination of diseases is beset. If, however, we give our attention in the first instance to cases of sudden or violent death, we shall be furnished with facts that will enable us, in a great measure at least, if not entirely, to overcome those difficulties. They are cases, these, as before observed, in which the functions of vitally important organs are either suddenly arrested, or rapidly suppressed; in which the changes intervening between the application of the external cause and the fatal event, and those in particular directly producing this, are in general few in number, simple in their character, and easily understood; and in which, also, the external phenomena that attend them are equally few and simple, and for the most part characteristic.

To illustrate adequately, and as the subject deserves, what has now been stated, would occupy too great a space, and perhaps exceed my ability. But I cannot forbear introducing here the illustrations given of it by Dr. Alison in the introductory part of his *Outlines of*

Pathology and Practice of Medicine. Though a mere sketch of this interesting and important subject, these illustrations are sufficiently comprehensive for our present purpose; and the details regarding it will be found in various parts of that work, in connection with different morbid states and different individual diseases.

"The tendencies of different diseased actions to their different fatal terminations are obviously susceptible of illustration (as already observed) by reference to the simpler cases of sudden and violent death, already considered; and it is of the utmost importance, in all truly scientific practice, to keep them constantly in view: but it is always to be observed, that, in the course of the same disease, and even at different periods of the same case, death may be threatened in very different ways. This is especially remarkable in regard to the strictly febrile diseases.

"Generally speaking, in the most rapid or acute diseases of different parts (especially internal parts) of the body, whether febrile or not, death is threatened in like manner as by mechanical injury of the same parts; and it is very often sufficiently explained by the injury done to the structure, and consequent interruption of the function of the part. Thus, in the acute diseases of the head, we are threatened with the fatal termination by coma, in those of the chest by asphyxia, and in those of the abdomen by syncope (or sympathetic affection of the heart), just as in injuries of these divisions of the body. In the more chronic diseases of the same parts, death is produced in a more complex manner, partly by the disturbance of the function of the part, but partly also by the constitutional disturbance; *i. e.* by the disorder of the general function of assimilation, or by the exhausting evacuations, consequent on the continuance of the local diseased action, rather than on its local results; and illustrated by the effects of starvation, or of hæmorrhage, rather than of more violent injuries.

"In the case of certain local diseases, particularly of the liver and kidneys, a very peculiar mode of fatal termination is sometimes observed, in consequence of the local disease leading to retention of the natural excretions, and thereby affecting the system as a narcotic poison. And it is also certain, that

death from any of the strictly febrile diseases, and from certain of the inflammations which we term specific, is owing, in part, sometimes almost entirely, to the influence of causes which affect peculiarly the fluids of the body, without altering the structure of any of its solid parts, and produce changes analogous in the most important respects to the agency of poisons on the animal economy.

"It is also easy to understand, that, in the course of diseases, both acute and chronic, complications of different kinds of morbid action, and of morbid changes in different parts of the body, often take place; sometimes from accidental causes, but frequently, also, in consequence of known laws, whereby the living actions of different parts of the body are connected together; and that death is therefore often owing to a combination of different causes, the operation of each of which may be accurately observed, although its exact amount may not be easily assigned. The history of dropsy, in connection with organic diseases of different internal parts, furnishes continual illustrations of this observation."*

[To be continued.]

ON THE PERIOD OF PUBERTY IN HINDU WOMEN.

By JOHN ROBERTON, Esq.
Surgeon, Manchester†.

THROUGH the interest of a friend at Bangalore, to whom I am under especial obligation, the Rev. Eden Crisp, I have had forwarded to me a tabular document, the facts contained in which, added to those supplied by Professors Goodeve and Webb, to be found in the last number of this journal, constitute a tolerably large body of evidence, both as to the period of puberty, and the age at the birth of a first child; the instances, in reference to the period of puberty, now being 310; and those with regard to the age of the mother at a first parturition, 163. The table in question, Mr. Crisp informs me, was drawn up by "an apothecary" in the Hon. East India Com-

pany's service; and he adds, "I have no doubt he has made every effort to secure correct information; and this is not easy with regard to the lower classes, who are not particular and careful, as to dates, to the same extent as the higher castes."

[A very copious table follows, for which we regret we have not been able to find room; but the following summary shows not only the age of puberty, but the age of the female at the birth of the first child; and it is remarkable that this age is later in each case in reference to the Hindus of the Deckan, than in the returns for the Bengalee women of Calcutta.]

<i>Puberty.</i>			
Ages.	Calcutta.	Bangalore.	Both.
8	3	...	3
9	7	1	8
10	14	2	16
11	37	8	45
12	66	14	80
13	49	20	69
14	41	10	51
15	11	8	19
16	6	7	13
17	3	1	4
18	1	...	1
19	..	..	...
20	1	...	1
	239	71	310
Average {	12 yrs. and 6 months.	13 yrs. and 2 months.	12 yrs. and 8 months.

<i>At birth of first child.</i>			
Ages.	Calcutta.	Bangalore.	Both.
10	1	...	1
11	6	1	7
12	12	1	13
13	13	6	19
14	32	10	42
15	16	11	27
16	8	9	17
17	1	14	15
18	2	6	8
19	1	4	5
20	...	3	3
23	...	1	1
30	1	...	1
31	...	1	1
32	...	1	1
39	1	...	1
50	1	...	1
	95	68	163
Average {	14 yrs. and 8 months.	16 yrs. and 5 months.	15 yrs. and 5 months.

Respecting puberty it will be recollected, that, whilst in England the average age, deduced from 2169 in-

* Outlines of Path. and Pract. of Medicine, pp. 41-2-3.

† Edinburgh Med. and Surg. Journal, No. 165. Communicated by the author.

stances, is 14 years 10 months; the average age calculated from the above 30 Hindu cases is 12 years, 8 months, showing a difference of 2 years and 2 months.* To what extent this average for Hindustan may be altered, when it shall be taken from a larger number of examples, time will probably, ere long, enable us to determine: meanwhile this difference between English and Hindus is, of course, well worthy of notice. That it is caused by the greater heat of the climate of India, I before remarked, we are not warranted, in the present state of our knowledge, to infer; the returns from the West India Islands, (whose climate equals in warmth that of Hindustan,) as far as they have gone, giving no countenance to such a conclusion. However, let the inference drawn be what it may, the facts in the Hindu tables are remarkably different, it will readily be admitted, from what Montesquieu, and Haller, and subsequent writers on physiology, had supposed them to be.

In thus referring to the alleged influence of warmth of climate in accelerating the period of puberty, I may here notice a fact that was published by an eminent writer a good many years ago, and which has often been quoted in support of the prevailing opinion on this subject. I allude to Sir Charles Mansfield Clarke. His words are: "The author has known an instance of an European child who went to the East Indies at the age of six years, in whom menstruation took place at the ninth year, and continued to recur regularly during three months; but the child then returning to a more temperate climate, the secretion ceased, and has not yet returned. The child is now 12 years old."†

Now, this solitary instance, which has been so often brought forward in proof of the influence of climate on the menstrual function, proves nothing whatever. It is an isolated fact, whose cause may have been other than temperature. The catamenia happening to appear in the child's ninth year, when she was in India, was probably a coincidence, and, at any rate, was

not necessarily the effect of climate. To show the risk incurred in drawing such a conclusion from a single case, I will mention what Professor Webb has stated, in a private letter to a friend, with the perusal of which I have been favoured—That in the Calcutta Government school, of 200 girls, Indo-British and British born, under his charge, "16 years is the average time of menstruation." "This," he adds, "I understand from our matron, who has been 30 years at the institution."

The age for a first birth is considerably later, it will be seen, at Bangalore than at Calcutta, being in the former 16 years and 5 months, and for the latter 14 years 8 months. But taking the average age for the two places, which is 15 years 5 months, we still have a social phenomenon of a very surprising kind, when compared with the age for the same event in Europe. From a register of the time of life at a first parturition in 500 women of Manchester, chiefly of the class of manufacturing labourers, I find the average age to be 23 years, whereas the period of life for a first birth in Hindustan is earlier by nearly 8 years! Moreover in the English register there is no instance of parturition under the age of 17; while in the Hindu table, one-half of the examples occurs where the mother is under 15.

A very curious, and I apprehend hitherto in this country unknown fact, is stated by the Baboo Modusoodun Gupta, namely, that it is enjoined in the Hindu Shastras that females shall be given in marriage before the period of the sign of puberty, and that should consummation not take place until after this event, marriage is a sin. Accordingly, that it is the custom of the country to send a girl at the age of 9 years to the house of her husband, unless the latter be so distant that it cannot be done. And, further, that two ancient Hindu sages, whom he names, are of opinion, that if the marriage is not consummated before the first appearance of the catamenia, the girl becomes "degraded in rank." Testimony to the same effect is given by Professor Webb; who likewise joins the Baboo in thinking that, in those alleged instances of very early menstruation, a discharge of blood from

* By an oversight, which I much regret, the average age of puberty for England was erroneously printed in my paper last Number as 14 years, instead of, as I ought to have stated it, 14 years and 10 months.

† On Diseases of Females, &c. vol. i. page 12.

physical injury in premature sexual intercourse is the real explanation of the occurrence: a supposition worthy of the gravest consideration, when endeavouring correctly to estimate the value of the Hindu tables. At Bangalore, it would seem that this revolting custom of consummating the marriage before puberty does not obtain, the husband refraining from taking his wife to his own house till not less than sixteen days have elapsed subsequently to puberty. Customs, we know, differ in different parts of our great Eastern empire. I had occasion formerly to remark, that when we speak of Hindostan it is needful to bear in mind the diversity of manners and even morals in so vast a country. In the present instance it might readily escape the notice of a reader, when speaking of Calcutta and Bangalore, that these two cities are about as widely apart as to distance, and probably not less diverse in customs and manners, than are Copenhagen and Madrid, the capitals of Denmark and Spain.

Viewing, as we must do, with pity and disgust the infantile marriages of Hindustan, it is some consolation to learn from Professor Webb that the more intelligent Hindus of the present day hesitate not to pronounce these early marriages as the "monster evils" of their country; and in my last paper it was stated, on the authority of an ancient Hindu writer, Sushruta, that if a woman under the age of 16 conceives, the child will either die in the womb, or die soon after birth, or should it live, it will always be imbecile. Notwithstanding all this, however, so enwoven is the custom with the social habits and most inveterate prejudices of the Hindus, that we can only look for change for the better by slow degrees, and as the fruit of prudent benevolent exertion on the part of their European masters. The educating of natives for the practice of medicine, in which there is already a commencement, at the Medical College, Calcutta, whereby they will acquire rational views of human physiology, may eventually do something towards dissipating error and prejudice. But it has strongly impressed me, that if the Mission stations, now so numerous in India, had each a medical missionary at-

tached, with the means of dispensing extensively medical and surgical aid to the natives around, more might be done by this instrumentality to break through their ill customs, and introduce right views as to the bodily constitution, true character, and social position of women, than by any or all the other means that could be named. Within the last few years, medical missions have been tried by the Americans in China, and with a success (so far at least as gaining the attention, confidence, and gratitude of that suspicious people) which has never been equalled. In India the same experiment has not, to any extent, been tried; but there can hardly be a doubt that it would equally succeed. The prevalence there of eye, skin, and other kinds of surgical ailments, as well as of diseases in general, affords a field for medical missionary exertion, which, it is to be hoped, will not be overlooked by those who have the direction of missions. The scheme has this great recommendation, that, while it would propitiate the favour of the deeply-prejudiced Hindu, and open his heart to receive the missionary's religious instructions, it would, from the very outset, confer those invaluable temporal benefits which Christian benevolence, armed with European medical science, is so well able to dispense; and which moreover, after the example of Him who "went about doing good," ought ever to be held second only in importance to the office of imparting the truths of our holy faith.*

* I have before me a Report of the Medical Missionary Society, in China, printed at Macao, containing a survey of its operations from March 1843 to June 1844. It is a document of extraordinary interest. The Society began its labours in 1838, since which period "upwards of 30,000 patients" had applied for professional assistance at the date of last Report. In Hong Kong, and in the five ports, excepting Funchau fu, viz. Canton, Amoy, Ningpo, and Shanghai, institutions exist, some of them for both in and out patients. At Hong Kong, the hospital had been open one year, in which time 3924 patients had resorted to it, of which number 566 were admitted as in-patients. One ward of the hospital has been reserved exclusively for females, most of whom had small feet, and consequently were of the better class from the villages on the main. The expense for the support of in-patients is very small—only one-fourth of the number admitted ask for or receive any pecuniary allowance, and by far the greater proportion entirely sustain themselves. The plan at all the institutions is, that while the medical missionary is attending more especially—not exclusively—to

OBJECTIONS TO THE
PRACTICE OF TEARING AWAY THE
PLACENTA,

INSTEAD OF TURNING THE CHILD, IN CASES
OF UNAVOIDABLE UTERINE
HÆMORRHAGE.

BY ROBERT LEE, M.D., F.R.S.

IN the first case of placental presentation which came under my observation, a great gush of blood suddenly took place from the uterus, and the woman was dead before she could be seen by any practitioner. In at least twenty other cases which I have since witnessed, the first attack of hæmorrhage was so sudden and profuse as to endanger life, and in several reduced the patients to a condition which rendered recovery impossible, though the most prompt and energetic treatment was employed. In all these cases the blood could not have escaped from the mother through the medium of the placenta, but from the mouths of the

the diseases, the other missionaries are attending to the instructing of the patients.

There is a medical class connected with the same hospital of young natives, who are zealously trained for the exercise of the medical profession.

"Every one at all acquainted with medical science in China, must be aware," I use the words of the Report, "to what a low system of empirical practice it is reduced, especially in surgery, which, as a science based on human anatomy, is entirely unknown. The dissection of the body, or even *sectio cadaveris*, is utterly discountenanced, as a breach of filial piety, and as great is the antipathy to disturb or maim the dead: it will be a work of years to remove this prejudice; therefore, so long as it exists, the art of surgery will continue in the hands of quacks and empirics, unless imparted through some other channel."

We may judge of the eagerness with which the medical mission stations are resorted to, by the fact, that at Shanghai, from February 18 to April 13, 1841, little more than two months, 3764 patients were entered upon the register. The list of diseases, with the exception of certain skin complaints, differs little from what would occur in a dispensary in England; but the proportion of eye diseases seems quite enormous: these are, catarrh of ophthalmia, 192; granular lids, 326; granular lids with opacity, 326; granular lids with pannus, 79; entropium, 153; ectropium, 97; trichiasis, 40; contraction of lars, 61; pterygium, 138; epiphora, 9; abscess of eyelid, 4; tumor of eyelid, 4; abscess of lachrymal sac, 4; fistula lachrymalis, 1; ptosis, 2; hippitudo 88; leucoma, 89; ulceration of cornea, 256; conical cornea, 19; iritis, 6; synechia, 18; closure of pupil, 57; hernia-iris, 15; staphyloma, 44; amaurosis, 26; near-sighted, 4; malignant ulceration of eyelid, 1; loss of both eyes, 108; loss of one eye, 73; cataract of both eyes, 58; cataract of one eye, 32; cataract incipient, 56; in all, 2366, or upwards of 62 per cent. of the whole list.

great veins left open in the lining membrane of the uterus by the detachment of the placenta, in consequence of which a direct communication was established between the cavity of the uterus and the cavities of the heart. If the whole mass of maternal blood contained in the cellular or cavernous structure of the placenta had flowed out in a moment, it would not have amounted to one-hundredth part of the blood which escaped from the uterus in the space of a few minutes in these cases. The cellular or cavernous structure of the placenta, which resembles a sponge, renders it impossible that any gush of blood could have taken place from the partially exposed decidual veins on the surface of the organ, even if these were not constructed, as they are, like valves, and close immediately on the separation of the placental decidua from the uterus. The peculiar structure of the placenta favours the coagulation of the blood in its cells, when any portion of it is detached, in the same way as hæmorrhage is arrested in cut vessels by blood effused into the cellular membrane around the vessel. The cavernous structure of the portion of detached placenta is consequently invariably found to be filled with coagulated blood, and the orifices of the decidual veins covered with coagula. But the manner in which the maternal blood enters the placenta demonstrates that the great torrents of maternal blood which suddenly rush from the uterus in cases of unavoidable hæmorrhage, do not proceed from the placenta, but from the vessels opened in the lining membrane of the uterus, as all the most distinguished practitioners in midwifery believe. The small curling arteries in the placental decidua, which convey the whole of the maternal blood that enters the placenta, could not possibly replenish the organ for a very considerable period if the maternal blood were entirely to escape in a few seconds from the exposed decidual veins. The fœtus also would invariably perish in cases of placental presentation, after the first attack of hæmorrhage, if this were the fact, which is known to be quite the reverse. The proposal, therefore, to detach or tear away the placenta while the uterus is still distended with the ovum, and uncontracted, on the ground that the placenta furnishes the blood, appears to

me to be wild and extravagant in the extreme, and in my opinion betrays the most profound ignorance of the anatomy and physiology of the gravid uterus.

The great mortality alleged to have taken place in cases of placental presentation, is another reason which has been assigned for tearing away the placenta while it is still adherent to the cervix uteri. The average rate of mortality in placental presentation is stated to be 1 in 3. This calculation has been made from the data furnished by the statistical tables of Drs. Churchill and Simpson.

Having recently detected several errors in the table of Dr. Churchill, I was induced to write to him, requesting some information respecting the 29 cases which are stated to have been reported by Giffard: I had failed, after the most attentive examination of Giffard's work, to discover more than 19. In reply to my inquiries I received the following most candid and satisfactory answer, from which it appears that the table from which Dr. Simpson has copied so largely, and to which he has attached so much importance, was compiled by a pupil on whom Dr. Churchill thought he could confide, but that, to his vexation, he had discovered in it more than one error.

137, Stephen's Green W.
Oct. 6, 1845.

Dear sir,—I owe you and most of my professional brethren an apology for the mistake about Giffard's cases. The truth is, that being much pressed, I employed a pupil (in whom I thought I could confide) to tabulate Giffard and one or two others; and I have had the vexation to discover more than one mistake. I should have corrected them had I known them in time, but now they must stand as a warning to me to do my work myself. I hope and believe that you will find but few other errors: but if you should, you will oblige me much if you will tell me of them.

With great respect, believe me,

Very faithfully yours,

Dr. Lee.

F. CHURCHILL.

The table of Dr. Churchill being thus for the present set aside, the table of Dr. Simpson (*MED. GAZ.* Sept. 19) must now, therefore, be considered the only one which remains, pretending to contain evidence in support of the conclusion that 1 woman in 3 dies

where the placenta presents, and the usual mode of treatment is adopted. Let us inquire into the grounds of this pretension.

In examining this table, the first circumstance which cannot fail to strike every one at all acquainted with the subject, is the omission of Portal's 18 cases, of which 1 only proved fatal. The next circumstance is, the prodigious mortality said to have occurred in the London Royal Maternity Charity, to which Dr. F. H. Ramsbotham is physician. Thirty-three, of 50 cases which are stated to have occurred, proved fatal. Mauriceau is represented in the table to have reported 17 cases, 3 of which were fatal, the well-known fact being suppressed, that one of these three women died undelivered, because she would not permit the usual treatment to be adopted. Giffard is said in the table to have reported 24 cases, of which 7 proved fatal; 5 being the actual number of deaths, and 19 the number of cases. Smellie is made to report 17 cases, 3 of which were fatal; while Dr. Churchill states that Smellie has reported 24 cases, 8 of which were fatal. Busch is stated to have recorded 13 cases, 2 of which were fatal, the fact being omitted to be mentioned, that "these two cases proved fatal to the mother where there had been great delay in sending for assistance." Of Schweighauser's 64 cases, I have not yet succeeded in finding any report.

Dr. J. Ramsbotham is represented in the table to have reported 19 cases, 8 of which died. This is copied from Dr. Churchill's table; but Dr. F. H. Ramsbotham thought it right, when Dr. Churchill published his Midwifery, to caution the profession against receiving his tables as statistical evidence, because of the manner in which they were compiled. "I then objected," he says, "strongly to my father's cases, as published by him, being used in such a way as Dr. Churchill has done. The 19 cases were selected from a much greater number, the details of which were not published, and Dr. F. H. Ramsbotham therefore justly concluded, that it was most deceptive to take his father's cases as a portion of the data from which to build up a system of statistics." This caution to the profession has not, however, prevented Dr. Simpson from stating in his table, that 19 cases had been reported by Dr

Ramsbotham, 8 of which proved fatal, as if this had been the average number of deaths in his practice. The same remarks apply with equal force to the average mortality said to have taken place in my practice.

Again, it is said that in the London Maternity Charity 50 cases occurred, 33 of which proved fatal; the simple fact being, that 32 children were still-born. "Dr. Simpson has, then, it seems, mistaken," says Dr. Ramsbotham, "the number of still-born children in the 50 cases, for the number of deaths among the mothers; and, by an error of the press most probably, 33 was printed instead of 32."*

There can now be no longer any difficulty in determining how much reliance is to be placed on Dr. Simpson's statistics, and whether he has been sufficiently impressed with the importance of "observing the most rigid accuracy, the most scrupulous regard to truth, in forming statistical tables, from which it is proposed to adduce proofs in support of an attempt to subvert the established rules of practice in the treatment of cases of such vital importance, and substitute another mode of treatment which is of the most dangerous character, fraught with inevitable destruction to the child, and attended with no benefit to, if not actually increasing the danger of, the mother.

"In proportion to the imposing effect which figures give to arguments, so ought to be our jealousy in regard to the correctness of the data on which numerical calculations are founded. If correct, we are furnished with a safe and steady stepping-stone to truth; if incorrect, we are confounded by the sudden yielding which takes place, and get involved in a slough of error."

But of all the misrepresentations made by Dr. Simpson, the following is probably that which will strike the reader as the most extraordinary and astounding. "The great mortality resulting from the treatment of turning in placental presentations," he says, "may be more strongly shown to some minds if the fact is stated in another form. In order to ascertain the fatality

of the Cæsarean section abroad, Dr. Churchill collected *with much care* the histories from foreign authorities of 371 cases of the operation. Out of these 371 cases, 217 mothers recovered, and 154, or nearly 1 in every $2\frac{4}{5}$, died. (Midwifery, p. 318.) This is exactly, and to a fraction, the degree of maternal mortality accompanying turning in placental presentations in the cases reported by Dr. Lee in his Clinical Midwifery. In other words, the success of turning in unavoidable hæmorrhage in Dr. Lee's private and consultation practice (as reported in that work), has not been greater than the reputed success of the Cæsarean section on the continent of Europe."

The following table contains the results of all the cases of placental presentation which I have ever seen, and of which I have preserved the histories.

Dr. Simpson, who professes to know the number of cases which I have seen much more accurately than I do myself, says the number is 46, not 45. If the cases of partial placental presentation exceeding 4 in number, which I have referred to at page 149 of my Clinical Midwifery, and which were all safely completed without the operation of turning, be added to the 46, the actual number of cases of placental presentation which I have seen will amount to 50.

From this table it will be seen that 1 woman died undelivered, and that 3 others died on whom the operation of turning had not been performed. Of the 10 cases which terminated fatally after the operation of turning, it will be seen that three women (Nos. 1, 17, 22) died of uterine phlebitis long after delivery,—a circumstance which could not be justly attributed to the operation. In a fourth case of turning it will be seen that the uterus was lacerated in consequence of the great distortion of the pelvis. In a fifth case the patient was in articulo mortis before the operation was commenced. It is impossible to attribute the fatal result to the operation of turning in more than 6 of these 10 cases, and if the circumstances of these 6 cases be examined, it will be obvious that death could not have been averted by any other mode of treatment, and that if turning had not been performed they would all have died undelivered.

* Supposing all the statistical errors alleged to have been committed by other writers had actually been committed, which is not the case, they would only contribute to vitiate still further Dr. Simpson's table, as all these errors have been copied into it.

Results of Forty-five Cases of Placental Presentation observed by Dr. Lee.

No.	Complete or Partial.	Treatment.	Mothers.
1	Complete	Turning by the late Mr. Baker. Phlebitis . . .	Died
2	Ditto	Seen by no accoucheur during life. Undelivered . . .	Died
3	Partial	Placenta and child expelled . . .	Recovered
4	Uncertain	Ditto Ditto. Flooding continued after . . .	Recovered
5	Complete	Turning by Dr. Lee . . .	Recovered
6	Partial	Ditto ditto . . .	Recovered
7	Complete	Death before turning was performed by Dr. Lee . . .	Died
8	Ditto	Turning with two fingers by ditto . . .	Recovered
9	Partial	Distortion of pelvis. Craniotomy by ditto . . .	Recovered
10	Ditto	Placenta and fœtus expelled . . .	Recovered
11	Ditto	Membranes ruptured; turning not performed . . .	Recovered
12	Complete	Turning by Dr. Lee . . .	Died
13	Partial	Membranes ruptured by ditto; turning not performed. Metritis . . .	Died
14	Ditto	Membranes ruptured by ditto; turning not performed. Phlebitis . . .	Died
15	Ditto	Ergot freely given before turning by Dr. Lee. Phlebitis . . .	Died
16	Ditto	Turning by Mr. Gaskell . . .	Died
17	Ditto	Ditto by Dr. Lee . . .	Recovered
18	Ditto	Ditto ditto . . .	Recovered
19	Complete	Ditto ditto . . .	Recovered
20	Partial	Membranes ruptured. Turning not performed . . .	Recovered
21	Complete	Turning by Dr. Lee . . .	Recovered
22	Ditto	Ditto by Dr. Boyd. Phlebitis . . .	Died
23	Ditto	Turning impossible from rigidity. Fingers forced through the placenta, and membranes ruptured, by Dr. H. Davis. Craniotomy by Dr. Lee . . .	Died
24	Ditto	Great rigidity. Turning by ditto . . .	Died
25	Ditto	Turning by ditto . . .	Recovered
26	Ditto	Great distortion. Turning by Dr. H. Davis . . .	Died
27	Partial	Membranes ruptured. Turning not performed . . .	Recovered
28	Complete	Turning by Dr. Lee . . .	Recovered
29	Ditto	Ditto by Mr. Girdwood . . .	Died
30	Ditto	Ditto by Mr. Jonson . . .	Recovered
31	Partial	Membranes ruptured spontaneously . . .	Recovered
32	Complete	Turning by Dr. Lee . . .	Recovered
33	Ditto	Ditto ditto . . .	Recovered
34	Partial	Membranes ruptured artificially by ditto . . .	Recovered
35	Complete	Turning by Mr. Harvey . . .	Died
36	Ditto	Ditto by Dr. Lee . . .	Recovered
37	Ditto	Ditto ditto . . .	Recovered
38	Partial	Membranes ruptured artificially by ditto . . .	Recovered
39	Ditto	Craniotomy by ditto . . .	Recovered
40	Ditto	Ditto ditto . . .	Recovered
41	Ditto	Ditto ditto . . .	Recovered
42	Complete	Turning by ditto . . .	Recovered
43	Uncertain	Perforation of placenta by ditto . . .	Recovered
44	Partial	Turning by ditto . . .	Recovered
45	Complete	Ditto by Mr. Byans . . .	Recovered

In these 50 cases it will be seen by the table that the operation of turning was performed only 27 times. Of these 27 cases there were 19 only in which I myself performed the operation, the other 8 patients having been delivered by other practitioners. Of the 19 cases in which I delivered by turning, it will

be observed that 4 terminated fatally. There were four deaths, it is true, in these 19 cases of turning, but one of the women, it will be observed, was moribund before the operation was undertaken; and in a second, before I was called into consultation, so much blood had been lost that she died soon

after delivery. A third woman, to whom large quantities of ergot of rye had been given before I saw her, and delivered her by turning, died ten days after from uterine phlebitis—a result which could not be attributed to the mode of delivery. The fourth case proved fatal in consequence of the great rigidity of the os uteri, which rendered turning impossible until she was in a state of complete insensibility from the loss of blood. The mortality, therefore, instead of being 1 in $2\frac{4}{10}$ ths, was virtually less than 1 in 9.

Of the last 16 cases of placental presentation which have come under my own immediate care in succession, it will be observed from the table *that not one woman has died*. I cannot forbear pointing to this fact, that not one death has taken place in the last 16 women with placental presentation, who have come in succession under my own immediate care, and the treatment of whom was solely conducted by me. In 8 of these 16 cases the delivery was accomplished by the operation of turning. It is certainly with feelings of the highest satisfaction that I refer to this fact in contradiction to the statements made on this subject in the last Number of the MEDICAL GAZETTE. The members of the medical profession cannot fail to perceive that I have a much higher motive than any of a personal nature in calling their attention to this fact in so pointed a manner; and it cannot fail likewise to be observed that I have carefully excluded from these remarks all irrelevant matter.

THE TETANIC COUNTENANCE.

THE tetanic countenance is very peculiar, and if once looked at with attention, can never be forgotten. The forehead is wrinkled, both transversely and in the perpendicular direction, the eyebrows being drawn in a remarkable manner towards each other; the eyes are not fully opened; the nostrils more or less dilated; and the angles of the mouth drawn backwards and a little upwards. There is generally an expression of uneasiness, and slightly of apprehension; the mouth is not quite closed, and the teeth are seen. I never saw but one description of face, one tetanic expression of countenance,—it is the same in all cases; it is the first thing that gives the alarm, and the last symptom to depart. Even where a patient recovers, and is liable to go about his business, that tetanic face remains; I believe it never leaves him.—*Professor Colles's Surgical Lectures.*

CASE OF

PLACENTA PRÆVIA AND DISTORTION OF THE PELVIS,

IN WHICH THE PLACENTA WAS DETACHED, AND THE CHILD'S HEAD OPENED.

BY THOMAS RADFORD, M.D.

Consulting Physician to the Manchester Lying-in-Hospital.

IN No. 4, Vol. 2d, of the Provincial Medical and Surgical Journal, Jan. 22d, 1845, I published a series of propositions, in a great measure embracing my opinion when the placenta should be detached in cases of placenta prævia, in preference to the practice usually adopted in these cases.

As the following case fully illustrates the 3d of the series, I shall now cite it. "When a narrow pelvis exists in connection with placenta prævia, the practice is to detach the placenta and to remove it, then to perforate the head as soon as the condition of the parts allow, and to extract it by means of the crotchet."

CASE.—Early in the morning of September 9th, I received a note from Mr. — requesting me to visit a lady who was in great danger from flooding. It was also further remarked, that it was the person in whose former labour I had been consulted, and requested me to bring my instruments along with me.

She was now in labour for the third time. She was delivered of the first child by the perforator and crotchet; her second labour was premature, and happened about the middle of the eighth month, and the child was delivered by the long forceps.

The medical gentleman informed me that he had been sent for early the night before, when he found that she was then flooding, and had been so, some time previous to his arrival. Labour pains regularly occurred. Upon making a vaginal examination he found the os uteri dilated to the size of a crown-piece, and perceived what he considered to be the breech of the child. The plan which he adopted was externally the application of cloths wrung out of cold vinegar and water, and to take a mixture of infusion of roses with acid. As the hæmorrhage continued, and, indeed, increased, he at last determined upon delivery. After

having introduced his hand per vaginam for that purpose, he attempted to pass it through the os uteri, for the purpose of hooking his finger upon the flexed thigh so as to bring down the breech. Fortunately, however, he was foiled in his attempt, and discovered that what he had considered to be the breech of the child was in fact the placenta.

When I arrived I found the flooding had been very considerable, and still continued to be so, and had produced a very decided constitutional impression; the countenance was very pallid, and the pulse excessively frequent, and scarcely to be felt.

By a vaginal examination I found the canal filled with coagula, which I first removed, and then passed my finger to the os uteri, which was dilated to the extent already stated, soft and dilatable; and over it the placenta was centrally placed. At this time I also examined the pelvic cavity, and felt convinced that it would be impossible to save the child, as the dimensions of this canal were considerably lessened. After a careful consideration of the best practice to be adopted, we concluded that the placenta should be detached and extracted, and the membranes ruptured, and the child's head perforated. Having been requested to perform this operation, a bandage was first placed round the abdomen, one end of which was fastened to the abdomen, and the other held by an assistant, and gradually tightened as circumstances required. Having passed my hand along the vagina and through the os uteri to the edge of the placenta, which I then separated at this part, and afterwards carried my hand between it and the os uteri so as to sweep around its whole circumference, and thus completely detach it, the membranes having been previously ruptured, the placenta was extracted. I now perforated the head of the child, and completely broke up the brain; and as the hæmorrhage was now effectually suppressed we determined to postpone for some time the extraction of the child, in order to raise the vital powers of the mother. A drachm of laudanum was administered previous to the operation. At the end of three hours she had so far rallied, as to justify us in accomplishing the delivery by the crotchet. The child was slowly

extracted. By the hand placed upon the abdomen the uterus was found firmly contracted. A compress was placed over this organ, and maintained in its position by a slight bandage. The patient suffered for some short time from the effects of loss of blood, but gradually improved, and is now in a tolerable state of health.

REMARKS.—The advantage of detaching the placenta in a case of placenta prævia further complicated with distortion of the pelvis, over the ordinary practice, is so obvious, as to require little comment. The operation of turning can never be performed without some risk of laceration, particularly as it is generally practised. In general it is too rapidly performed; the successive portions of the child are too quickly brought to bear upon the os uteri at a time when it is not in a condition to allow them to pass.

Every practical obstetrician knows that the head of the child can be perforated more easily and more safely when it presents (especially when this aperture is only limitedly dilated), than in a case where the child has been turned, and its body occupies the pelvis.

Since my views on detaching the placenta in cases of placenta prævia were first published in the Provincial Medical and Surgical Journal, Dec. 4th, 1844, in a lecture delivered to the profession, on "Galvanism applied to the treatment of Uterine Hæmorrhage," and also in a subsequent number of that Journal, several cases have been related by different writers corroborative of the advantage of this practice in arresting hæmorrhage, but which are not altogether in accordance with my plan; I shall therefore take an early opportunity of more fully stating the cases to which this practice is particularly applicable.

PROGRESS OF ANIMAL CHEMISTRY IN FRANCE.

M. BARRUEL conceived the ingenious idea of making a medal from the iron which might be collected from the blood of a subject. The wife of one of the celebrated members of the Ecole de Médecine of Paris, wears a ring, made of iron, which was extracted from blood taken from her husband, during the course of a severe disease.—*M. Colombat on the Diseases of Females; Meigs' Translation.*

MICROSCOPIC EXAMINATION OF DISEASED LIVER IN THE RABBIT.

By C. HANDFIELD JONES, M.B. Cantab.

Assistant-Demonstrator of Anatomy in the School of St. George's Hospital.

The liver of the rabbit is frequently found to be the seat of a morbid deposit, which does not affect the whole organ, but occurs in the form of definite masses of various size: this condition, as I am informed by those who keep them, is almost certainly brought on by keeping the animals exclusively on green food: the deposit is of an opaque white colour, varies much in consistency, being sometimes diffuent, at others almost of the firmness of cartilage: its aspect on the whole somewhat resembles that of certain forms of tubercle. If a portion of one of these masses be examined with a linear power of 200 diam., it is seen to consist of numerous large cells, such as are shown in fig. 2, surrounded and imbedded in a dark amorphous granular matter, which has rather the appearance of retrograding tissue: the cells are of an oval form, have a double cell-wall, and contain in their interior a circular mass of granular matter, which is probably inclosed in a separate membrane: in the centre of this a nucleus is sometimes perceptible: the space between the central mass and the double cell-wall is perfectly clear and transparent; each cell measures in its long diam. about $\frac{1}{600}$ inch, in its short $\frac{1}{1000}$ inch: these appear to be the most perfect form, and are by far the most numerous. Several varieties, however, may be observed among them: some, for instance, are circular, and almost filled with granular matter, but are of less size than the perfect cell; others, again, are as large or larger than the perfect cell, of oval or circular form, and completely distended by their granular contents, while occasionally some of much smaller size are seen, having very much the appearance of pus globules.

All these appear to me to be various phases of the transformation of the perfect cell, which I am inclined to think commences as the circular form shown in fig. 1, then attains its perfect development (fig. 2), after-

wards becomes distended with its granular contents, and then by dissolution of its double wall disperses them in the surrounding matter. Fig. 4 represents a view I once obtained of a cell in this last stage, where only a small part of the cell-wall is seen remaining; the smaller cells there shown perhaps become developed into new and perfect cells. As to the mode of origin of these cells, it seems probable that they are produced by transformation of healthy epithelial cells, for the circular form (fig. 1,) bears a strong resemblance in size and appearance to the healthy cells, and I have also occasionally observed several of the morbid cells arranged in a linear series, as the healthy ones mostly are. Again, the original situation of these cells favours the same idea; they may be observed sometimes single, sometimes in groups lying in the interior of a lobule, and in one instance I obtained such a view as is shown in fig. 6, where a portion of two lobules with the intervening duct is represented: the one on the left is pretty healthy, that on the right is almost destroyed by the morbid deposit: the large cells are there seen intermingled with healthy epithelial cells and granular matter, while along a small part of the margin the substance of the lobule was so removed that the basement membrane was isolated, and left beautifully distinct. But though these cells are certainly formed at first among the epithelial cells of the lobules, yet they afterwards make their way into the ducts, and are found in the secretion: the gall bladder of a rabbit whose liver was occupied to a great extent by the morbid deposit was found much contracted, and contained no healthy bile, but a grumous fluid, in which these cells were very numerous. The only difference observed between the cells found in the gall-bladder and those in the liver itself was, that the former were all of the perfect kind, while the latter presented numerous circular smaller cells, apparently commencing forms mingled with the perfect ones.

Regarding the immediate cause of the production of these cells I can hardly offer any conjecture; one curious circumstance, however, I have observed, which I think could not have been anticipated, viz. that cells identical in appearance with those of the perfect

kind described, are always found when the ductus com. choled. has been tied, and that they are more numerous in proportion as the obstruction has longer existed: they do not seem to be products of an inflammatory process, as in the case where they were most numerous no traces of inflammation existed; they are more probably concerned in what may be called a degenerating process, a kind of hepatic phthisis. The appearance of a lobule which has been destroyed in this manner, is very curious. The foramen of the intra

lobular vein may still be distinguished, which is often surrounded by an opaque yellowish green, or brown matter; while irregular heaps of amorphous granular substance, mingled with the cells, occupy the remaining space. From such an appearance as this, I cannot but conclude that these cells are the vigorous agents of a "destructive assimilation," absorbing into their own cavities the nutrient material, and converting it into inert and decaying matter, instead of into the natural and healthy secretion.

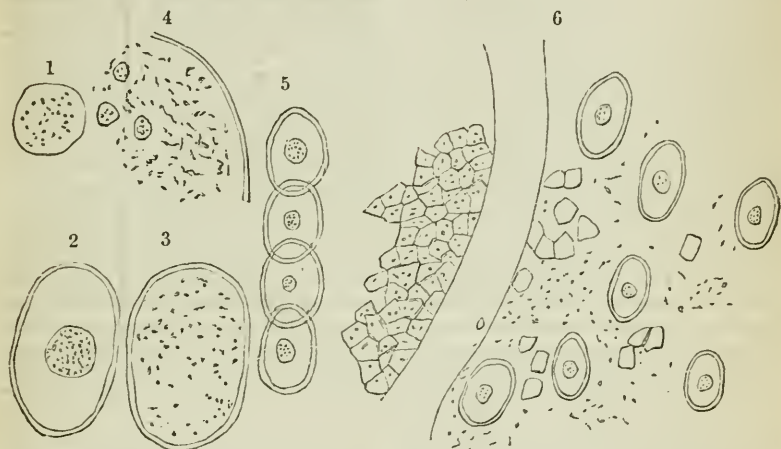


FIG. 1.—Commencing morbid cell; the cell-wall more distinct than in the healthy cell.

FIG. 2.—A perfect cell, with double wall and granular nucleus.

FIG. 3.—A perfect cell, full of granular matter in a more advanced stage.

FIG. 4.—Remains of a morbid cell, the greater part of the double wall having

disappeared; the granular contents, and small granular cells, are being dispersed.

FIG. 5.—A similar series of morbid cells.

FIG. 6.—Portions of two lobules: in the left, the epithelia appear healthy; in the right, the morbid cells have almost destroyed the natural structure; at e, the basemembrane was distinctly isolated.

The most important points in the history which has now been given of these morbid cells, relate to the causes of their production, which certainly appear at first sight to have nothing in common. If, however, the view I take be correct, viz. that they are produced by transformation of the healthy epithelial cells, and if this transformation be occasioned by an unhealthy condition of the blood which passes through the organ, it will appear, I think, in both instances, that such a condition is present. In the first place, when excessive ingestion of green food is found to produce the disease, the supply of blood which the liver receives is deteriorated at its source by

the injurious effect of such matters on the mucous surface of the intestines: this is confirmed by the fact that diarrhœa is a frequent consequence of such diet. Again, when the bile, which, by Schwann's experiments, has been shown to be indispensable to life, is prevented from arriving in the intestines, it seems clear that there must be an interruption of the healthy processes which usually go on on that mucous surface; and consequently, as in the former instance, the supply of blood proceeding thence will be proportionately deteriorated.

Since writing the above, I have obtained further evidence that the morbid

cells are produced by transformation of healthy ones, from having found them, in one case, to contain bile and oil globules: the liver in which they were observed was free from the morbid deposit, the cells were found in the gall-bladder, the ducts, and in the substance of the organ; they did not exhibit the double cell-wall so distinctly as those above described.

RAILWAY TRAVELLING AND APOPLEXY.

A NOTION has prevailed that railway travelling has a tendency to induce an attack of apoplexy, for no other reason, so far as we can ascertain, than that several persons within the last year have had a fatal attack of the disease, either during a railway journey, or soon after its termination. We will not deny the possibility that rapid and violent motion may tend to produce some disturbance in the cerebral circulation; but we think that the above inference has been somewhat hastily drawn. The number of persons now daily travelling by railways is immense; in short, we have what may be termed a locomotive section of the population. That apoplexy may attack railway travellers independently of any supposed injurious effects from locomotion, as well as those who are stationary, is self-evident. Late researches have shown that, taking the numbers living at given ages, this disease most frequently attacks those who are between thirty and fifty years of age, and the majority of railway travellers would probably be found to be adults. There is, however, we suspect, a fallacy in the mode of reasoning adopted. Is there any, the slightest proof, that the deaths from apoplexy, among railway travellers, are relatively more numerous than among the stationary population? From the last report of the Registrar-General, we find that the total deaths in England in 1842 were 349,519, whereof 5361 took place from apoplexy. This is equivalent to 1 in 65 of the total deaths per annum, and the weekly tables show that the greater number of these deaths occurred in persons between 15 and 60 years of age. Is it meant to be said that the proportion is greater among railway travellers? If so, some proof should be adduced. If this cannot be afforded the inference is worth nothing. When apoplexy occurs during a journey by a railway, it becomes a subject of notoriety; but when it occurs in the non-travelling class, it attracts no particular notice. This may probably explain why an opinion which we believe to be erroneous, has arisen, that railway travelling is productive of apoplexy.

In the above calculation, no account is taken of the *sudden deaths*, which, during

the same period, amounted to 3802, *i. e.* one in 91·9 deaths, or 1·19 per cent of the whole annual deaths; while those from apoplexy were equal to 1·5 per cent. Taking the sudden deaths and cases of apoplexy together, we should have 9163 deaths from these united causes, or one in 38 of the total deaths, or 3·4 per cent. There are no facts, that we are aware of, which show that sudden deaths, whether from apoplexy or other unexplained causes, are more frequent among railway travellers than they are in the general population; and taking the number of people conveyed, with a due regard to the ages of those dying, it would probably be found that no more die suddenly in railway travelling, than under the old system of travelling in stage-coaches. At any rate, there are at present no data upon which such an opinion can be founded, and the onus of proof lies with those who maintain it. Unless it can be shown that among railway travellers more than 1·5 per cent die of apoplexy, and more than 1·19 per cent die from some other cause of sudden death, it is obvious that there is not the least reason for the inference which has been drawn. So far as the mechanical effects are concerned, it appears to us that a sea-voyage is much more conducive to apoplexy, by disturbing the cerebral circulation, than a journey by a railway; and yet we seldom hear of its occurrence under these circumstances.

RELATION OF THE UPPER PORTION OF THE VAGINA TO THE PERITONEUM.

THE superior region of the vagina, in its posterior and lateral parts, is in direct relation with the peritoneum, so that, if the surgeon should make a perforation there, he would inevitably wound the peritoneal membrane, and penetrate the abdominal cavity, whilst a perforation made in front and above would penetrate the *bas-fond* of the urinary bladder. My own anatomical researches have led me to conclude that the distance from the *os tincæ* to the peritoneum is really but nine lines in front, and not more than seven or eight behind, for on that side the serous membrane descends quite down upon the vagina to make the *intovaginal excavation*. These measurements, which are estimated to be greater by some surgeons, are not so large as they are in women advanced in years, because both the body and neck of the womb may, in such persons, be said to become atrophied, which is doubtless the real cause of that obliteration of the *os tincæ* long known to medical authorities, and which, in accordance with M. Breschet's opinions, we look upon as a real physiological law.—*Meigs' Translation of M. Colombat on the Diseases of Females.*

MEDICAL GAZETTE.

FRIDAY, OCTOBER 24, 1845.

In our last number some observations were made on the salaries of medical officers of Poor Law Unions, and we endeavoured to show that the principle adopted by the Commissioners for determining the value of the services of a medical man, was unjust to the profession and likely to be attended with injury to the poor. The Commissioners allege that the offices would become the subjects of bargain and sale, if the salaries were fixed at a higher rate than that at which "competent medical men" are willing to take them. That in a large number of cases, these offices are held by men fully competent for the discharge of the duties, we willingly admit; but we believe, if matters were strictly inquired into, it would be found, that they have accepted them not on account of the salaries affording any fair remuneration for their attendance on the poor, but in order to preserve their local influence as practitioners. There is, however, another class, on whose proceedings some light is occasionally thrown by Coroners' inquiries; and we have here the evil effects of allowing such appointments to be held by men, whose only test of "competency" may be the possession of a diploma, granted perhaps six or eight months before. They may be entire strangers to the locality, in search of practice upon any terms, and inexperienced in the treatment of disease;—yet they are in one sense *qualified* for the office, and willing to accept it. Their competency in a professional view is entirely a distinct matter, and this appears to be less regarded than their possession of a parchment qualification. Even admitting

that such men may hold office for a time without any impeachment of their medical knowledge, they may show themselves entirely devoid of those kind and conscientious feelings which should characterise medical attendance on the poor. There is nothing to prevent them from keeping a strict debtor and creditor account with the Commissioners, or from doing one iota more for the relief of a sick pauper, than may just maintain the appearance of a legal discharge of duty. When the items of a medical salary are closely calculated and brought to a *minimum*, barely sufficient to cover expenses incurred by a proper discharge of the duties, it is not surprising that we should occasionally meet with cases of gross neglect and indifference. A pauper dies,—the medical officer is perhaps in an extreme case removed, and another equally competent (!), *i. e.* provided with a similar parchment qualification, is substituted.

A case recently occurred in the North Aylesford Union, in which an inquest was held on the body of a pauper, who had died of small-pox, owing, it was alleged, to neglect on the part of the medical and parochial officers. Instead of giving our own version of the case, we shall extract a few lines from the charge of the Coroner to the jury, as these will sufficiently show the manner in which a legally appointed medical officer sometimes discharges his duties in a Poor Law Union. "This unfortunate man (the deceased) might be now living, if he had been duly attended to, and had had medical relief in the early stage of his disease. It appeared that he was unattended to by the medical officer from Wednesday to the following Tuesday, *leaving an interval of six days* without any medical or other parish aid, and such neglect, from whatever cause it might arise, was greatly to be deplored." It seems that

there had been some dispute among the parochial authorities, whether the deceased came really under the definition of a pauper or not, and this could not be clearly decided until after the man had fallen a victim to the disease under which he was labouring! The medical officer attempted to justify his non-attendance on the deceased by asserting that he was not a pauper, and he contended, against the opinion of the Coroner, that he, as a medical officer, had a right to decide as to who was or was not a fit object for *parish* relief. It is positively a disgrace to the administration of the Poor Law Act that poor persons requiring medical relief,—for the verdict of the jury was decidedly adverse to the opinion of the medical man respecting the condition of the deceased,—should be allowed to die unattended because the appointed officers choose to assume that they are not paupers! These results must, however, be expected, when the Commissioners show themselves so very ready to take advantage of “the existing circumstances of the profession!” We are quite aware that the humane and charitable performance of the duties of a medical officer are not dependent on the exact amount of salary; but we verily believe that, were greater liberality shown, the offices would invariably be held by a class of men, against whom charges of this kind would seldom arise. The present system, however, necessarily leads to the appointments often falling into the hands of a needy and unscrupulous class of practitioners.

Under these circumstances it is much to be regretted that any medical officer should by his misconduct have furnished an argument to the Commissioners, not only for refusing an increase of these salaries generally, but for actually reducing them below their present

amount. The facts, as they are stated in the Report, are certainly disgraceful to the parties concerned in the transaction:—they are as follows. The surgeon and physician to the South Dublin Union received each a salary of £60 up to June 1841. The Guardians then liberally expressed a wish to raise the salaries to £100 each, but the Commissioners dissented from this increase. After a long negotiation, the Commissioners having inquired into the nature of the duties performed, and stating their anxiety that the remuneration should be sufficient to secure proper medical attendance, finally consented to fix the salaries at £100 a year each. It then appears, upon the subsequent resignation of the physician, an arrangement was made by him with another medical gentleman, that the latter, if elected his successor, should pay him a sum of £300! The Commissioners proceed to say that the transaction affords a sufficient proof that the mere act of fixing a higher salary cannot as a matter of course (!) bring about the result, that the increase of salary to a medical officer will secure more attention to the duties of the office which he holds. The increase, instead of acting as a constant stimulus to the exertions of the medical man from day to day, with reference to the persons to be placed under his care, may have passed out of his pocket by anticipation, and have gone simply to enrich his predecessor: nay, he may by this very payment be left encumbered with debts and difficulties which would rather impede than facilitate the discharge of his duties, especially if he had to provide medicines at his own cost. Further, we cannot be surprised at their coming to the conclusion, “that if the place is such that the physician elected can afford to pay £300 for the purpose of obtaining the situation, the

salary must be too high. It is clear that this payment would be in the nature of a fine on taking possession of an office, which was to yield a certain amount of emolument; and that it represents, in fact, the excess of that emolument over and above what would adequately remunerate the person accepting the office for the discharge of his duties from day to day: for if he did not pay this sum to obtain the office, it is clear that he could afford to discharge his duties with equal efficiency for a salary just so much lower in proportion." They also observe, that an amount of salary which will allow of such a payment being made by an individual who undertakes to perform the duties, to another who has no duties to perform, is an unfair burthen on the rate-payers; and they conclude by strongly intimating to the Guardians, that the salary should be reduced.

We think it will strike some of our readers with surprise, that the office of parochial surgeon or physician should be worth a premium in the shape of a three years' purchase; but this office in the South Dublin Union may be attended with some peculiar advantages to the possessor, with which we are unacquainted. So far as this Union is concerned, we candidly admit that the reasoning of the Commissioners is perfectly justifiable, and that unless there are some unknown perquisites, the medical officers have satisfactorily established, by entering upon this agreement, which, it appears, was renounced before the election,—that the Guardians have acted too liberally towards them, that the Commissioners took the right view of the case in the first instance, and that the medical salaries are too high by a sum exactly represented by the annual value of the premium under the circumstances.

If the conclusions of the Commissioners had ended here, we should have had nothing further to say; but when we find them treating this isolated case, as if the South Dublin Union comprised all England and Wales, we must entirely dissent from the inferences which they have deduced. The *argumentum à particulari ad universale* is always liable to mislead, and in a moral question of this kind it cannot be safely employed. We fairly concede that, as "a matter of course," the "fixing of a higher salary" may not secure more attention on the part of a medical officer;—independently of professional qualifications, much must always be left to the character and disposition of the man: but on the other hand, it is quite certain that a low and inadequate salary is by no means likely to secure the services of a skilful medical officer—irrespective of the charitable extension of his aid to cases which he might otherwise put in a legal plea for neglecting. Abuses are liable to occur in all institutions: even offices of Government, to which high salaries are attached, occasionally furnish proofs that peculation is carried on, on a large scale, by their occupants; but this is not made a ground either for reducing the salaries, or for refusing to increase those of others who are insufficiently remunerated. If the practices proved to have been carried on in the South Dublin Union, were prevalent throughout the country, the case would have a different aspect: but we think there would be some difficulty in producing half a dozen Unions in England and Wales, in which the salaries of the medical officers were, so far as remuneration for actual labour is concerned, worth three years' purchase! Even medical practices may be obtained upon easier terms, and with less prospect of starvation.

Reviews.

A Practical Treatise on the Diseases peculiar to Women; illustrated by Cases derived from Hospital and Private Practice. By SAMUEL ASHWELL, M.D. 8vo. pp. 737. London: Highley. 1845.

AT the commencement of his work, Dr. Ashwell observes,—“My aim has been to produce such a treatise on female diseases, true, simple, and practical, which may form a safe and efficient guide to the elucidation and curative treatment of many of these intricate, rapidly progressing, and dangerous maladies. I have endeavoured to write in a plain and perspicuous style, with scrupulous accuracy as to facts; and in reference to opinions and treatment, nothing is recommended the probability and worth of which my own experience has not confirmed.” We conceive that Dr. Ashwell has succeeded in carrying out these intentions faithfully, and with great ability. The leading and characteristic features of his work are, its practical character, its clearness, and its rationality. While it is not deficient in literary research, the facts which it enunciates are evidently the fruit of clinical study, long pursued and judiciously directed; hence, unlike many of the systematic works on this subject, which have appeared from time to time, the entire production is to be regarded as the result of the author's own observation, illustrated and confirmed by the opinions and the facts of others.

Dr. Ashwell's treatise has reference solely to the diseases of the female in the non-pregnant state; the author appearing to have directed his attention rather to those forms of disease which are of frequent occurrence in practice, than to the rarer kinds of malformation and lesion which owe their interest more to their singularity than to any practical knowledge derivable from their study.

The contents of the work are arranged under two divisions—the First part treating of the Functional, the Second of the Organic Diseases of the Uterine System. The First part contains eleven chapters, in which the following classes of disease, in their several varieties, are fully discussed:—Chlorosis, Amenorrhœa, Vicarious Men-

struation, Dysmenorrhœa, Menorrhagia, Leucorrhœa. The Disorders attendant upon the Decline of Menstruation. Hysteria and Irritable Uterus.—In the Second part, the subjects are arranged in eight chapters, under the following headings:—General Remarks on the History and Symptoms, Diagnosis, Pathology, and Prognosis of the Organic Diseases of the Uterine System, The Tumors of the Walls of the Uterus characterized by Induration, On Premature Labour in Pregnancy complicated with Organic Disease (a very important chapter), Organic Diseases of the Os and Cervix Uteri, Organic Diseases of the Mucous Membrane of the Cavity of the Uterus, Displacements of the Uterus, Diseases of the Ovaries, Diseases of the External Organs of Generation. The work also contains two chapters of Formulæ of remedies which the author is in the habit of employing with advantage in the various forms of disease treated of in preceding chapters. It concludes with an Appendix, which embodies some important facts illustrating “the morbid consequences of undue lactation.” We believe that the author first introduced this subject in a paper which appeared in the *Guy's Hospital Reports*.

It would of course be impossible to enter here into a full analysis of so large and varied a work: we shall therefore content ourselves with referring to a few of its more important features.

The author's observations on the complication of chlorosis with structural change of the lungs, are of considerable practical interest and value. Great stress is laid upon the necessity of endeavouring to anticipate and remove a tendency to tubercular disease of the lung in young chlorotic girls, in whom hereditary predisposition, and great deficiency of constitutional power, indicate the danger of such a result. With regard to the management of these cases, the author observes, “Carefully treat such an individual: avoid mercury, drastic purgatives, and emmenagogues. Place her in the country, where she shall breathe pure air: let her diet be simple and nutritious (milk and animal food), and her medicine some of the various tonics; and the expectation may be cherished that the time is not far distant when the sexual

character will be fully developed, and the danger safely passed."

The articles on amenorrhœa, dysmenorrhœa, and menorrhagia, contain much practical information, clearly and expressively given. The author's opinions of the causes of leucorrhœa are less exclusive than those which have been adopted by some recent observers. Dr. Bennett, it is well known, has satisfied himself, by ocular demonstration, that in a majority of cases, leucorrhœa, whatever may be its nature, is accompanied by inflammation of the neck of the uterus, and that this inflammation seldom exists long without producing ulceration. Dr. W. C. Roberts has recently published an essay, in the *New York Journal of Medicine* (July 1845), in which he seeks to connect leucorrhœa directly with inflammation of the vagina (chiefly at its upper part), cervix uteri, and lining membrane of the uterus; and enforces his views by the citation of 59 illustrative cases. Dr. Ashwell mentions, that in several cases in which he has used the speculum, the cervix has been pale; in more acute cases, slightly red; and in two severe attacks it was of a deep crimson tinge. He adds, that in none where there was not suspicion of venereal taint, has he seen erosion or ulceration. The fact, that hitherto the speculum has been seldom used by English practitioners in cases of simple leucorrhœa, and, when employed, has not, perhaps, generally been directed to the recognition of certain definite changes in the cervix uteri, may probably be the cause of a discrepancy of opinion upon this subject, which, if so originating, will of course be removed by farther investigation. The following hint respecting the use of the various astringent injections employed in leucorrhœa may be useful:—

"It must not be forgotten that each of these, good though it be, soon loses its effect. I have cured many cases of passive leucorrhœa more quickly than I should otherwise have done, by acting on this suggestion, a week being often long enough to wear out the good effects of one injection."

Among other practical facts developed in the chapter on Hysteria is the following:—

"It is not unimportant to observe, that although marriage often cures hysteria, women who have *long suffered* from its effects rarely make good nurses. Doubtless

there are exceptions to this fact; nor is it intended to be urged that such women cannot suckle at all, nor that they may not occasionally be benefitted by lactation. But where, prior to a late marriage, hysteria has existed for years, in association with extreme susceptibility, peevishness of disposition, and thinness of person, it is, for the most part, undesirable that such mothers should suckle their offspring. The milk is often disordered, the child's system is therefore deranged, and a predisposition to nervous disease may be communicated."

It is evident that the author's investigations have been much directed to the pathology and treatment of the solid fibrous tumors which are so frequently found imbedded in the structure of the uterine walls; sometimes increasing outwards to an enormous extent, at others, encroaching upon the cavity of the organ; and, in a third set of instances, occupying the parietes of the cervix uteri. Dr. Ashwell considers that, although these tumors are of a malignant character, they certainly exert only a slight influence on the constitution, possess a low grade of malignancy, are not invariably fatal, even if allowed to progress unchecked by remedies, and are, in certain stages of their course, amenable to treatment. Dr. Ashwell's views upon the remedial value of iodine in these cases have been for several years before the profession, and have met with confirmation from other writers. An interesting and rare case of hard tumor of the uterus cured by spontaneous breaking down of the structure, and discharge of the fragments through the vagina, occurring in a woman 28 years of age, is communicated by Sir James Clark.

The following opinion, with which the author's remarks upon organic diseases of the os and cervix, in their earlier steps, conclude, is worthy to be borne in mind:—

"I would caution practitioners against the too common error of at once determining an ulceration of the cervix to be malignant, because it may co-exist with doubtful hæmorrhage, induration, and other suspicious circumstances. I know this is controversial ground, and, with those who have long regarded every protracted hardness of this part as sure to result in cancer, it will be difficult to produce a contrary impression. With truth I can affirm that such an opinion may, in some, if not in many instances, be safely abandoned, and a more favourable one entertained. But, allowing more than

I am disposed to concede on this point, the possibility that such a change may not be cancerous, or if so, that its progress may, in this early stage, be arrested, and the patient saved from the full development of an incurable, lingering, and agonizing disease, are certainly sufficient to insure the fullest trial of the treatment now enjoined." (p. 403.)

Dr. Ashwell's remarks upon that once highly vaunted operation, excision of the cervix uteri for malignant disease, are cautious and judicious. After describing the modes in which the operation may be practised, and mentioning the condition of the uterus and surrounding parts which render this measure unjustifiable, he observes :

"I cannot but think, now that uterine diseases are so much better understood, and the absolute necessity for early examination by the speculum as well as the finger so universally conceded, that opportunities will more frequently present themselves for its justifiable and successful performance. I have often been surprised that so very few, scarcely any, cases occur at Guy's in which removal would be at all allowable. Frequently, for months, and I may say years, I have anxiously examined with a view to excision, and have been disappointed by finding the disease too far advanced."

These statements still leave the question as to the precise stage of the disease at which the operation may be performed, a very nice point in diagnosis. In the earlier periods of its development, the morbid deposit is, to a certain degree, subject to the influence of internal remedies: on the other hand, we are informed, that when the disease is fully established, it is extremely difficult to find an instance in which excision can be safely had recourse to; and hence the question may arise whether the operation is, in any case, justifiable.

Dr. Ashwell devotes several pages to the consideration of the uses, selection, and mode of application of pessaries. He is evidently a strong advocate for the judicious employment of these instruments; and it is certainly true that the principal objections to their application arise from their having been employed either in an inappropriate form, or in cases evidently not calculated to be benefited by their use; or, what is still more frequent, from the neglect of obvious precautions on the part of the patients themselves. The author observes, "if judiciously used,

the pessary is by far the best mechanical support for a procident womb. It would, indeed, stand alone as a remedy if it were universally applicable, or if its employment was never attended with inconvenience. But I can truly say, that during twenty-three years' practice, I have met with a very few instances out of a great number where it could not be introduced, or where its employment occasioned serious or permanent mischief."

The author's views are by no means favourable to the operation of ovariectomy; and, although we do not altogether coincide with him in his opinions upon this subject, we must admit that his arguments are far more just and reasonable than those of other writers who strenuously discountenance the measure. We shall allow Dr. Ashwell to speak for himself upon this topic:—

"If it required as much surgical knowledge and skill to make these large and brilliant" (?) "abdominal incisions, as to tie the subelavian artery, or to perform a trying operation of lithotomy, the lives of many women would have been already spared, and fewer would be sacrificed for the future. What would be thought of the feasibility of any operation involving life in the most imminent hazard, if we discovered that out of 67 cases where it had been attempted, it was, *from absolute error of diagnosis, incapable of completion in eighteen!* that of the remaining 49 patients where the extirpation was effected, *sixteen died, and two were not cured!* So that out of the whole number 67, the operation *failed in thirty-six, and succeeded in thirty-one—less than one-half.* Such results are distressing, especially when we hear no greater doubt expressed about the operation itself, but only higher confidence in its value, and greater laudation of the operators. We willingly concede presence of mind and ability to many of the extirpators of ovarian cysts; but we are unable to discover (for the later operations have been quite as unsuccessful, from unfitness of the cases, as the earlier ones) that any advance has been made in diagnosis. Nor, when the tumors themselves are examined after death, when the malignancy of many of them is recognised, and their firm, almost indivisible, adhesions, and their immovable masses of new and morbid substance are brought to view, it is next to impossible to entertain any sanguine hope that our means of diagnosis can ever be much improved."

The author's data are taken from Dr. Churchill's well-known table. We

believe that if several recent cases of ovariectomy were added to that table, the ratio of mortality which it presents would be in some degree lowered. We also think that the diagnosis of ovarian tumors is beginning to be better understood; and we have no doubt that the practice of ascertaining the contents of the tumor by means of a slender flat trocar and canula, or by the small exploratory incision now generally employed, will render such mistakes in diagnosis as those which were formerly made, extremely rare. The cases where the operation could not be completed, owing to the manner in which the tumor had become adherent to surrounding parts, have gone far to throw discredit upon this operation; but the mode of procedure in such instances is now more clear. It is due to Dr. F. Bird to state that we are indebted to him for the knowledge of the fact, that the existence of very extensive adhesions between the tumor and the peritoneum do not of necessity contraindicate the removal of the diseased mass, and that peritonitis of a dangerous character is not a certain result of the operation.

Dr. Ashwell's work is illustrated throughout by numerous appropriate and interesting cases; many of these have been recorded by the late Mr. Tweedie, Dr. Lever, Dr. Oldham, and Dr. Joseph Ridge, and, of course, acquire additional value from the reputation of their narrators.

We close our notice of this highly practical work with a firm conviction that every student may take it for his guide with advantage, and that few practitioners can apply to it without gathering from its pages some most valuable additions to their professional knowledge.

The History of the Middlesex Hospital during the First Century of its Existence. By ERASMUS WILSON, F.R.S. Lecturer on Anatomy, &c. 8vo. pp. 296. London: Churchill, 1845.

THE appearance of this volume must be welcomed by all who take an interest in the excellent Charity to which it refers. Its contents will also suggest to those who are engaged in founding new institutions, some important reflections on the organization of establishments of this description. During the first hundred years of its existence, the Middlesex Hospital, sup-

ported as it has been in great part by annual subscriptions, has had to struggle through many difficulties, which are unknown to the endowed hospitals of the metropolis. It took its origin as a small infirmary (consisting of two dwelling-houses), in 1745; and the primitive nature of the regulations may be understood from the fact, that among them we find one, made in June 1747, ordering—"That no patient be permitted to talk to any body in the street out of the windows"! In the early part of the same year, the Infirmary numbered only about *six beds*. The ground occupied by the present hospital was taken in 1754, for a term of 999 years; the first stone was laid on the 15th May, 1755, and the new hospital was opened for patients in September 1757. Funds accumulated from various sources, and in 1774 the finances are represented to have been in a flourishing condition. After some vicissitudes, we find that the annual income in 1832-3 was about £9000, derived solely from voluntary contributions. In the same year the in-patients amounted to 1831, of which number 203 died; and the out-patients to 4783, comprising 1702 medical and 3081 surgical cases.* During this long period there have been on the hospital staff, including those now officiating, 41 physicians and 24 surgeons. The midwifery department has always received especial attention, and has been attended since 1747 by 13 physicians. It would appear invidious to make a selection of names: we shall only observe, that in the long list of physicians and surgeons, there are some who have rendered good services to medicine and surgery; and among the present officers, there is one who is well known not merely for his urbanity to his patients, but as an ornament of the surgical profession in Great Britain.

As an instance of the vast amount of gratuitous services rendered by the medical profession to society, we may mention that the physicians and surgeons have received no salary from the Charity, but have depended on a precarious remuneration, in the shape of fees, from pupils attending the prac-

* These facts were elicited by questions put by the Committee upon Medical Education of the House of Commons, in 1834. The beds for the in-patients were then 210; they are now 250; and the number of in- and out-patients relieved per annum is said to amount to 12,000.

tice of the hospital. In 1833 these fees were, for the medical department, £825. 8s.; and for the surgical, £1336. 5s.: in the same year there were 64 medical and 73 surgical pupils. Our readers are probably aware, that until the year 1835, there was no medical school attached to this hospital, and clinical lectures only were delivered there. Upon the medical school it is unnecessary to make any other remark, than that it has had among the lecturers some distinguished men, but during the short period of ten years it has undergone numerous changes.

In general, medical schools have been the growth of hospitals; but the modern practice has been in some instances to make the hospitals appendages to schools. This is all very proper, provided the facts be placed before the public in their true light. In some instances, however, we believe that great parade has been made, by making the plea for contributions to a new hospital—the necessitous state of the district, and the great demand among the poor of that locality for medical and surgical assistance. These arguments appear plausible; we do not mean to deny that they have some force, but then they are perhaps more applicable to numerous other districts in London. The fact is, we doubt whether, but for the prior establishment of the medical schools, the foundation of hospitals without a sufficient endowment would have been undertaken; and we believe that, whether the poor in the locality required attendance or not, the erection of a hospital was rendered absolutely necessary for the success of the school as a commercial speculation. We have made these remarks, because we think that from these circumstances, which are well known at least to the profession, having been kept in the back-ground in the very frequent public appeals to the charitable and humane, the cause of true charity is likely to be injured.

In 1828, some overtures were made by the then London University to connect the Middlesex Hospital with the new medical school; and it appears that the Council went so far as to advertise, without proper authority, that the medical and surgical practice of the Middlesex Hospital might be attended daily by the University medical pupils! This led to a public disavowal of any

connection with the University on the part of the Governors of the Middlesex Hospital. Another attempt was made by the University offering a contribution of £3000 to the funds of the Charity for a union of interests in respect to medical education; but the offer was positively declined; and to this we may ascribe the foundation of the North London Hospital as an independent institution.

One of the peculiarities of the Middlesex Hospital is the existence of a Cancer Charity, founded in 1792, by Samuel Whitbread, for the treatment of cancerous diseases. It has also an independent Samaritan fund, for furnishing temporary assistance to poor convalescent patients, whose residence in the hospital may be no longer necessary. During the last year the hospital has been much enlarged and improved: and we are glad to find that, at the late centenary festival, the sum collected amounted to upwards of £4000.

We shall conclude by remarking, that Mr. Wilson has executed his task in a way to satisfy all parties. He has confined himself principally to the making of abstracts from the hospital records, thus giving a complete history of the Charity from its foundation. He has wisely abstained from comments on various proceedings which have occasionally given rise to stormy discussions among the governors. We think his example might be well imitated, and that a complete history of each of the old endowed institutions of London, would be an acceptable addition to medical literature, interesting alike to those who take a part in the dispensation of the benevolence of the founders, and to the numerous practitioners who have received a medical education within their walls. The materials are in great part at hand in the bulky Parliamentary Report on the Metropolitan Hospitals, published some years since. What a history, for example, might be wrought out of old St. Bartholomew's from the days of Rahere!

An Inaugural Address delivered at the opening of the Norfolk and Norwich Hospital Museum. By JOHN GREEN CROSSE, M.D.F.R.S. 8vo. pp. 28. Churchill. 1845.

In a former number we spoke of the opening of this Museum, the munifi-

cent gift of Mr. Dalrymple; and Dr. Crosse has here published for the benefit of the institution, the inaugural address which he delivered on the occasion. We have derived much pleasure from the perusal of this address, which gives a sketch not only of the progress of the hospital from its foundation in 1771, but of the lives of several eminent medical men who have practised in Norwich and its vicinity. Among some pieces of good common-sense writing, we find laid down the following rule—too much neglected we fear by professional men. "People are led so much more by their prejudices and feelings, than by reason and good judgment, that the art of rising in practice consists as much in knowing how to please as how to cure diseases." This address cannot fail to instruct all those who have any local connexion with the county of Norfolk.

Elements of Chemical Analysis, Qualitative and Quantitative. By EDWARD ANDREW PARNELL. A New Edition, revised throughout, and considerably enlarged. 8vo. pp. 520. London, 1845. Taylor and Walton.

THIS work is not so well known to chemical readers as it deserves to be. As a guide for analysis, the English and French editions of Rose's Manual have hitherto been chiefly used in this country. The elaborate "Reagentien-lehre" of Professor du Mênil, of Hanover*, has had but little circulation, although it is undoubtedly one of the most complete and systematic treatises on analysis which has been published in any language. The works of Rose and De Mênil are, however, entirely unfitted for beginners; and, with the exception of the work before us, the only attempt to supply this deficiency was in the lately-published translation of Fresenius's Chemical Analysis,—a work very useful in its way, but of which we shall be better able to speak when it is completed.

The examination of this volume has satisfied us that the author is a practical and painstaking man, and that he is well acquainted with the subject on which he has written. It is to be expected that we should meet here with many processes of analysis already

made familiar to us through the works of Berzelius, Rose, Liebig, Christison, and Fresenius. Unlike many writers on analysis, the author appears, however, in most cases, to have stated results from actual observation, and not merely upon the authority of other analysts.

In many respects Mr. Parnell's work is decidedly preferable to Rose's Manual, which is so redundant of tests and processes as to confuse a beginner. We also find in it many well-marked chemical differences among compounds, the results of recent researches, which are not to be found in Rose: the English translation of which is, moreover, disfigured by the quaint barbarism or the Anglo-Germanic character of its phrases. Mr. Parnell's language is concise; his descriptions of the processes is intelligible: and, while the "indocti" will learn, the "periti," although they will find nothing very new, will decidedly benefit by his remarks.

The volume comprehends the analysis of organic and inorganic substances, the use of the blowpipe, the analysis of gases, of poisons in organic mixtures,—in which, by the way, the author is rather too concise; of urinary calculi, to which the same objection will apply; of mineral waters, and what may be termed commercial analysis, *i. e.* alkalimetry, chlorimetry, the analysis of nitre, gunpowder, guano, &c. The qualitative examination of organic liquids in relation to pathological chemistry is not entered into, the greater part of the volume being devoted to the analysis of mineral substances. In describing the effects of chemical reagents on the salts of the non-metallic acids, the tartaric, oxalic, and citric, he omits to notice among other differences the results obtained on treating the precipitates which their salts form with nitrate of silver. We have found no account of the qualitative detection by tests, of sulphur or nitrogen in organic substances, nor of the use of the sulphate of narcotine as a most delicate test for nitric acid, or the nitrates, which, according to our observation, is more sensitive than that of brucine, mentioned by the author. On the whole, however, the tests are carefully selected, and their reactions well explained.

We do not hesitate to recom-

* Handbuch der Reagentien- und Zerlegungslehre oder Chemisch-analytische Studien vom Hofrath Dr. du Mênil, Lemgo, 1836. 2 B.

mend this book as a useful companion to the young student of analytical chemistry. The almost entire absence of formulæ and symbols, the latter being given in a distinct table, will also render it acceptable to those medical practitioners who have the leisure or the desire to revise their knowledge of this interesting branch of science, without undergoing the discipline of learning the new language of chemistry.

STATE OF MEDICINE IN SPAIN.

1845.

UNFORTUNATE the wight who falls ill in Spain, as, whatever his original complaint, it is too often followed by secondary and worse symptoms, the native doctor. The faculty at Madrid are little in advance of their provincial colleagues, nay, often they are more destructive, since, being practitioners *en la Corte*, the heaven on earth, they are in proportion superior to the medical men of the rest of the world, of whom of course they can learn nothing. They are, however, at least a century behind the practitioners of England. Their notions and practice are classical, oriental, and antiquated, and their acquaintance with modern works, inventions, and operations, very limited. Their text-books and authorities are Galen, Celsus, Hippocrates, and Boerhave; the names of Hunter, Harvey, and Astley Cooper, are scarcely more known among their M.D.s than the last discoveries of Herschel; the light of such distant planets has not had time to arrive.

Meanwhile, as in courts of justice and other matter in Spain, all sounds admirably on *paper*—the forms, regulations, and system are perfect in theory. Colleges of physicians and surgeons superintend the science; the professors are members of learned societies; lectures are delivered, examinations are conducted, and certificates, duly signed and sealed, are given. The young *Galenista* is furnished with a licence to kill. What is wanting from beginning to end, to practitioner and patient, is *life*. The salaries of teachers are ill paid, and the pupils are tampered with and their studies thought dangerous, not to private but the public weal; thus Ferdinand VII., on the news of the three glorious days of Paris, shut up the medical schools, opening, it is true, by way of compensation, a university for killing bulls *secundum artem*. The medical men know, nevertheless, every aphorism of the ancients by rote, and *discourse* as eloquently and plausibly on any case as do their ministers in the Cortes. Both write capital *documentos*, theories and opinions, extemporaneously. Their splendid language

supplies words which seem to have cost thought. What is wanting is *practice*, and that clinical and best of education where the case is brought before the student with the corollary of skilful treatment.

As in their modern art and literature, there is little originality in Spanish medicine. It is chiefly a veneering of other men's ideas, or an adaptation of ancient and Moorish science. Most of their technical terms, *jalea*, *elixir*, *jarave*, *rob*, *sorbele*, *julepe*, &c., are purely Arabic, and indicate the sources from whence the knowledge was obtained; and whenever they depart from the daring ways of their ancestors, it is to adopt a timid French system. The few additions to their medical libraries are translations from their neighbours, just as the scanty *materia medica* in their apothecaries' shops is rendered more ineffective by quack nostrums from Paris. In spite of these lamentable deficiencies, the self-esteem of the medical men exceeds, if possible, that of the military; both have killed their "ten thousands." They hold themselves to be the first *sabreurs*, physicians, and surgeons on earth, and best qualified to wield the shears of the Paracæ. It would be a waste of time to try to dispel this fatal delusion: the well-intentioned monitor would simply be set down as malevolent, envious, and an ass; for they think their ignorance the perfection of human skill. No foreigner can ever hope to succeed among them, nor can any native who may have studied abroad easily introduce a better system. All his brethren would make common cause against him as an innovator. He would be summoned to no consultations, the most lucrative branch of practice, while the confessors would poison the ears of the women (who govern the men), with cautions against the danger to their souls of having their bodies cured by a Jew, a heretic, or a foreigner, for the terms are almost convertible.

Dissection is now repulsive to their Oriental prejudices; the pupils learn rather by plates, diagrams, models, preparations, and skeletons, than from anatomical experiments on a subject: their practice necessarily is limited. In difficult cases of compound fracture, gun-shot wounds, the doctors give the patient up almost at once, although they continue to meet and take fees until death relieves him of his complicated sufferings. In chronic cases and slighter fractures they are less dangerous; for as their pottering remedies do neither good nor harm, the struggle for life and death is left to nature, who sometimes works the cure. In acute diseases and inflammations they seldom succeed; for however fond of the lancet, they only nibble with the case, and are scared at the bold decided practice of Englishmen, whereat they shrug up shoul-

ders, invoke saints, and descant learnedly on the impossibility of treating complaints under the bright sun and warm air of catholic Spain, after the formulæ of cold, damp, and foggy, heretical England.

Most Spaniards who can afford it, have their family doctor, or *Medico de Cabecera*, and their confessor. This pair take care of the bodies and souls of the whole house, bring them gossip, share their *puchero*, purse, and tobacco. They rule the husband through the women and the nursery; nor do they allow their exclusive privileges to be infringed on. Etiquette is the life of a Spaniard, and often his death. Every one knows that Philip III. was killed, rather than violate a form. He was seated too near the fire, and, although burning, of course as king of Spain the impropriety of moving himself never entered his head; and when he requested one of his attendants to do so, none, in the absence of the proper officer whose duty it was to superintend the royal chair, ventured to take that improper liberty. In case of sudden emergencies among her Catholic Majesty's subjects, unless the family doctor be present, any other one, even if called in, generally declines acting until the regular Esculapius arrives. An English medical friend of ours saved a Spaniard's life by chancing to arrive when the patient, in an apoplectic fit, was foaming at the mouth and wrestling with death; all this time a strange doctor was sitting quietly in the next room smoking his cigar at the *brasero* with the women of the family. Our friend instantly took 30 ounces from the sufferer's arm, not one of the Spanish party even moving from their seats, hunc sic servavit Apollo!

The Spanish medical men pull together—a rare exception in Spain—and play into each other's hands. The family doctor, whenever appearances will in anywise justify him, becomes alarmed, and requires a consultation, a *Junta*. What any Spanish *Junta* is, need not be explained; and these are like the rest, they either do nothing, or what they do do, is done badly. At these meetings from three to seven *Medicos de apelacion*, consulting physicians, attend, or more, according to the patient's purse: each goes to the sick man, feels his pulse, asks him some questions, and then retires to the next room to consult, generally allowing the invalid the benefit of hearing what passes. The *Protomedico*, or senior, takes the chair; and while all are lighting their cigars, the family doctor opens the case, by stating the birth, parentage, and history of the patient, his constitution, the complaint, and the medicines hitherto prescribed. The senior next rises, and gives his opinion, often speaking for half an hour; the others follow in their rotation, and then the *Protomedico*, like a

judge, sums up, going over each opinion with comments: the usual termination is either to confirm the previous treatment, or order some insignificant *tisana*: the only certain thing is to appoint another consultation for the next day, for which the fees are heavy, each taking from three to five dollars. The consultation often lasts many hours, and is a chronic complaint. It occurred to our same medical friend to accidentally call on a person who had an inflammation in the cornea of the eye: on questioning he found that many consultations had been previously held, at which no determination was come to until at the last, when sea-bathing was prescribed, with a course of asses' milk and Chiclana snake-broth: our heretical friend, who lacked the true *Fe*, just touched the diseased part with caustic. When this application was reported at the next *Junta*, the *Medicos* all crossed themselves with horror and amazement, which was increased when the patient recovered in a week.

The trade of a druggist is anything but free; none may open a *Botica* without a strict examination and licence: of course this is to be had for money. None may sell any potent medicine, except according to the prescription of some *local* medical man; everything is a monopoly. The commonest drugs are often either wanting or grossly adulterated, but, as, in their arsenals and larders, no dispenser will admit such destitution; *hay de todo*, swears he, and gallantly makes up the prescription simply by substituting other ingredients; and as the correct ones nine times out of ten are harmless, no great injury is sustained; if, by chance, the patient dies, the doctor and the disease bear the blame. Perhaps the old Iberian custom was the safest; the sick were exposed outside their doors, and the advice of casual passengers was asked (Strabo, iii. 324), whose prescriptions were quite as likely to answer as images, relics, *bouillon aux vipres*, or milk of almonds or asses.

The poor and more numerous class, especially in the rural districts, seldom use physic—oh fortunati nimum! Like their mules they are rarely ill: they only take to their beds to die. If they do consult any one, it is the barber, the quack, or *curandero*; for there is generally in Spain some charlatan wherever sword, rosary, pen, or lancet is to be wielded. The nostrums, charms, relics, incantations, &c., to which recourse is had, when not mediæval, are pagan. For the spiritual pharmacopeia see S^a Engracia's lamp-oil and our remarks (Zaragoza). The patients cannot always be expected to recover even then, since "*Para todo hay remedio, sino para la muerte.*"—"There is a remedy for everything except

death." The transition from surgeons to barbers is easy in Spain; nay, shaving in this land, where whiskers were the type of valour and knighthood, long took the precedence over surgery; and even now, the shops of the Figaros are far more interesting than the hospitals. Here most ludicrous experiments are tried on the teeth and veins of the brave vulgar. The *Tienda de Barbero* is distinguished by a Mambrino's helmet basin, by phlebotomical symbols, and generally a rude painting of bleeding at the foot; huge grinders are hung up, which in a church would be exhibited as relics of St. Christopher; inside is a guitar and prints of bull-fights, while Figaro, the centre of all, is the personification of bustle and gossip. Few Spaniards can shave themselves; it is too mechanical, even supposing their cutlers could make a razor. Like Orientals, they prefer a "razor that is hired." These Figaros shave well, but not silently, the request of the Andaluz Adrian: garrulous by nature and trade, they have their own way in talk; for when a man is in their operating chair, with his jaws lathered, his nose between a finger and thumb, and a sharp blade at his throat, there is not much conversational fair play or reciprocity.—*Ford's Spain*.

Correspondence.

ON FLOODINGS AFTER DELIVERY.

BY DR. F. H. RAMSBOTHAM.

SIR,—Absence from home, and a variety of engagements, have prevented me from replying earlier to Mr. Adams' letter, published in your journal of Sept. 26th: I trust, however, you will now permit me to do so through the same channel. Mr. Adams seems determined to misunderstand my case of puerperal convulsions, which was the original occasion of the correspondence that has taken place. He "appeals to every candid reader, whether his version of the case does not give a faithful representation of its leading features." It appears to me indisputable that his version gives a most *perverted* representation; and I found my opinion on the following facts. Mr. Adams, in his first communication (*MED. GAZETTE*, Aug. 29th) cited my case as one illustrating the danger of "introducing the hand into the uterus after a great loss of blood;" and, to establish his doctrine, he stated that I had bled my patient "to an enormous amount." He consequently intended to infer that the introduction of the hand into the uterus, for the removal of the placenta, *while the woman was in a state of depression from hemorrhage*, was the cause of her death. This position which Mr. Adams adopted, and

the conclusion he drew from it, induced me to trouble you with a communication, inserted on Sept. 12th, in which I showed, that, as more than forty-eight hours had elapsed between the last bleeding and the removal of the placenta—as in the interval the patient had gradually recovered her consciousness most completely—and as the introduction of the hand into the uterus was undertaken, not in consequence of any hæmorrhage from the uterus after the child's expulsion, but merely from the time that had elapsed since the birth, the bleeding could not be considered as "enormous," and the death could not be attributed in any way whatever to the effects of depletion. Thus, so far from a faithful representation having been given of the leading features of the case, as Mr. Adams imagines, not only were the facts not faithfully detailed, but the inference also was erroneous. In his letter of the 26th ultimo, Mr. Adams explains the meaning he intended to convey, when he stated that I had bled this patient "to an enormous amount," by observing that he "merely meant to say it was to an extent now rarely practised under any circumstances;" since from my own report it appears she was "bled largely, and the bleeding was repeated twice in the course of a few hours." He then presumes that these three bleedings would not be less than to the amount of "60 or 70 ounces;" and he goes on to remark, "Now if this case occurred 20 years ago, as seems probable, I readily admit, that agreeably to the established opinion of the profession at that time, the bleeding was not carried *beyond the legitimate rules established by practice*; but I do maintain that in 1845 most practitioners of medicine would pause before abstracting blood to such an amount under any circumstances, within the space of eight or nine hours." Here Mr. Adams makes an assumption in regard to the quantity of blood taken, which he is not warranted in doing, inasmuch as I have not stated the quantity at all; and he builds too upon that assumption a dictum which I cannot uphold; namely, that in puerperal convulsions depletion is not practised *now* as freely as it *formerly* used to be. I have reason to believe that the practitioners of the present day in London are in the habit of abstracting as much blood, when occasion requires it, in such cases, as they did twenty years ago; for I have certainly not noticed any alteration in this respect since I have been in practice.

The case under discussion occurred on May 1st, 1826; and on referring to my note-book, I find, that about one in the morning, while the woman was attempting to reach something out of bed, her head fell below the bedstead, and she was seized with

a slight convulsion; she recovered from that attack, but at five another much more violent occurred; she became insensible, and a succession of fits took place, till medical assistance could be obtained, when she was bled to 24 ounces; this I have designated as a "large bleeding." The repetitions of the bleedings,—not described by me as large,—were at half-past 9, to the amount of 12 ounces, and at half-past 12, to about 6: after which no more fits happened. She was delivered naturally on the 3d, at half-past 11 A.M., forty-seven hours after the last bleeding, and at 2 P.M. I removed the placenta. With the addition of these facts to those previously noted by me, Mr. Adams will probably be satisfied that the fatal result could not be attributed to the loss of blood, or to the introduction of the hand into the uterus, while the system was depressed by depletion.

I cannot admit Mr. Adams' excuse for misquoting my words, in one part of his paper. An altered phrase that might appear to one man but a trifling difference, may to another seem of much importance; and if it is pretended that a quotation is given, the very words used should, on all occasions, be transcribed.

But, sir, I really should not have intruded on your columns with this letter, on a subject so personal, had Mr. Adams not expressed a wish that I had stated more explicitly what I alluded to as erroneous in the physiological and pathological principles referred to by him, and what I consider highly dangerous in their practical tendency. This is a matter that concerns the profession, and as he has thrown down the gauntlet, I must not hesitate to take it up.

Mr. Adams is desirous of effecting a complete revolution in the treatment of floodings after delivery; and one chief object of his paper appears to be an endeavour to prove that *inertia* of the uterus is the consequence, and not the cause, of these floodings; and that uterine contraction is not the means of restraining them. "The contractions of the uterus," he says, "are no safeguard, as has been generally supposed, against floodings either during or after delivery." This doctrine is so perfectly new to me, is so contrary to all received opinions on the subject, and (notwithstanding Mr. Adams asserts that he has established it beyond a doubt) is to my mind so far from the truth, that I was astounded when I read it; I looked upon such sentiments as likely to mislead the junior members of our profession, and I therefore characterised them as highly dangerous in their practical tendency.

It appears to me almost superfluous to bring forward arguments in refutation of such a notion; for when we so constantly

see the uterus relax after the birth of the placenta—when we watch its cavity becoming filled with blood—when we observe, on contraction taking place, attended too with pain, that the blood previously contained within the cavity is expelled externally, I do not think we can require stronger evidence, both that relaxation of the organ caused the internal accumulation, and that contraction occasioned the external flow. When, again, after observing these alternate contractions and relaxations taking place for some time, we find the uterus remaining *permanently* hard and small, and at the same time are sensible that the hæmorrhage has ceased, can we deny that the averting of the danger is to be attributed to the altered condition of the womb,—a state of tonic contraction and firmness having supervened on the previous alternations of contraction and relaxation?

Another position which Mr. Adams adopts, and which I consider to be not more consonant with truth, nor less fraught with danger than the one I have just animadverted on, is, that "the flooding which follows delivery has none of the characters of a passive hæmorrhage, but is to be referred to the class of active hæmorrhages, and treated upon the principles applicable to them." He remarks, indeed, that "this is fortunately not a principle of much practical importance, as the indications of the treatment will be much the same." With neither of the sentiments contained in the two last paragraphs can I coincide. I cannot look upon such hæmorrhages as of an active character; and I cannot allow that the distinction, as far as treatment is concerned, between active and passive hæmorrhage, is of little practical importance. It is an ordinary custom to meet active hæmorrhages by depleting means, but I would ask any practitioner of experience, whether he ever felt inclined to have recourse to such means while blood was flowing from the uterus after delivery? or, even had he not been taught otherwise, whether he would consider such treatment applicable?

There is yet another point of practical importance on which Mr. Adams and I are at issue. As he denies that hæmorrhages after labour are occasioned by torpor of the uterus, so he "has no hesitation in stating his belief, that the ordinary cause of flooding is the rupture of vessels, from lesions occasioned during the delivery of the child; sometimes no doubt about the *os tincæ*, but more commonly about the *os externum*." He gives a case to establish his doctrine in which an "enormous quantity" of blood passed when the placenta was thrown off; and, while he was very judiciously engaged in applying cold to the vulva, he happened to separate the labia pudendi slightly, and

saw an artery spirting blood to a distance ; he therefore infers that the laceration of the artery was the cause of the " enormous " loss that occurred on the placenta being thrown off.

That lacerations occasionally take place in the mouth and neck of the womb, and more frequently still, in the back part of the vagina and external organs, during labour, I am willing to admit ; and that an artery large enough to occasion a considerable loss of blood may be torn across under such circumstances, I have had ample proof ; but that accidents of this nature are the most common causes of hæmorrhage in childbirth I will not concede : notwithstanding what Mr. Adams has advanced, I would still refer them to a separation of a part of the placenta which has rendered patulous uterine vessels that had previously been plugged by the apposition of the mass ; and not to the accidental rupture of any of the arteries supplying either the os uteri or the os externum. Nor do I think one case alone would be sufficient to establish such a doctrine as Mr. Adams contends for, even if it carried strong presumptive proof along with it ; much less such a case as is here brought forward ; for this, in my estimation, so far from upholding the idea, militates powerfully against it. We are told that the birth of the child was followed by some slight discharges of arterial blood, but not sufficient to excite apprehension, until about five minutes afterwards, when the " enormous " loss took place at the time the placenta was thrown off. There can be no doubt that the *slight arterial hæmorrhage observed in the first instance* arose from the rupture of the artery near the os externum ; while the *gush which accompanied the separation of the placenta* proceeded from the uterine vessels, in consequence of contraction not following that separation with sufficient rapidity to close their orifices.

Again, Mr. Adams argues, that as hæmorrhages usually occur after rapid labours ; and as, according to him, lacerations usually occur under rapid labours, this is another reason for considering laceration of the maternal structures as a cause of the hæmorrhage. The latter statement I look upon as erroneous, and consequently regard the deduction in the same light. It is in *somewhat protracted* labours, where rigidity exists, that lacerations are most apt to take place ; for the very circumstance of the child being rapidly expelled necessarily involves the existence of *unusual flaccidity* of the structures through which it passes ; and the more flaccid they are, the less likely are they to be torn.

In the treatment of hæmorrhage after delivery, Mr. Adams " places most reliance on exposure to cool air, cold applications to the parts, with the removal of all excitement

both of body and mind, and laying the head lower than the pelvis ; " and so far as the application of these measures is concerned I perfectly coincide with him ; though not to the exclusion of other means when they have proved ineffectual. He considers pressure of little avail, and deprecates the introduction of the hand into the uterus, as tending to produce increased determination of blood to the part, syncope, and convulsions ; and he thinks it would be " warrantable in extreme cases to try to ascertain the situation of the bleeding point, and secure it by surgical means." My experience, on the contrary, has taught me that pressure properly applied to the uterine tumor by the hand is often of the utmost service ; and that the introduction of the hand into the cavity, although never to be undertaken until other means have been tried in vain, is sometimes followed by the most beneficial results. I cannot imagine that it causes an increased determination of blood to the organ ; and surely when syncope or convulsions do occur (provided there has been no previous convulsive attack), they may both with more propriety be attributed to the hæmorrhage, for which the operation has become necessary, than to the irritation consequent on the hand's introduction ; since these two symptoms attend upon excessive losses of blood, from whatever cause, and under whatever circumstances, such losses occur. I consider, therefore, that Mr. Adams has painted in too glowing colours the dangers likely to arise from this practice ; and further, I cannot help thinking that by searching for a supposed ruptured vessel within the vagina, for the purpose of securing it by surgical means, we should not only be disappointed in discovering it, but that we should be wasting a great deal of valuable time, that might be much more advantageously employed.

Without following Mr. Adams further in his arguments, I think I have adduced enough to justify the remark I made in my former communication, that such doctrines as he has laid down, if founded in error, as I consider them to be, are highly dangerous in their practical tendency.

But Mr. Adams inquires to what I allude as erroneous, in the physiological principles advocated by him ; and in reply, I feel it only necessary to quote the following sentence from his paper. " I have long been disposed," he writes, " to agree with Galen, and the older authorities, that it is mainly, if not entirely, by the action of the abdominal muscles, that the expulsion of the child is accomplished." Thus Mr. Adams' zeal for the promotion of his doctrine, that uterine contraction is of no avail in arresting hæmorrhage, has led him into the belief that the uterus is concerned but little, if at

all, in the process of labour; and that the expulsion of the child is not to be attributed to its agency,—a position which it appears to me no practical man would contend for in this age, were his mind not biassed, and his judgment warped, by some favourite theory.

I trust Mr. Adams will do me the justice to believe that the observations I have made are dictated solely by a desire to establish the truth, and by so doing to enhance the usefulness of our profession; and

I remain, sir,

Your obedient servant,

FRANCIS H. RAMSBOTHAM.

14, New Broad Street, October 11th, 1845.

ON THE TREATMENT OF VARICES IN PREGNANT WOMEN.

Will you do me the favour of giving publicity to my dissent from the opinion of Dr. Meigs, as respects the treatment of varices in pregnant women. I do not believe, "that such cases can very generally be obviated by the use of the roller and other ordinary measures." When an accoucheur is called to a young and delicate female, previous to her first confinement, it is not unfrequently to take his advice about some such little matter, about which she has got alarmed, being ignorant of the cause; and I do not know an instance in practice where he is more anxious, or has it less in his power to increase his patient's confidence in him, by giving the relief sought in such troublesome cases.

I have used all kinds of mechanical contrivances and failed of success; the pain caused by the bandage is insupportable, and the laced stocking is not much better; the desideratum being to have the pressure equal all over the limb, which I have never been able to accomplish by any mechanical means. It has occurred to me that a preparation of caoutchouc of equal thickness might be tried, although my experience does not lead me to anticipate much benefit from any mechanical contrivance. In many of the cases of varices which have come under my observation, the patients have been for the most part of weak and relaxed habits, and there is not unfrequently constipation of the bowels; by unloading them occasionally with an active aperient, accompanied with gentle exercise out of doors, and respeated at short intervals, I have by such means given the only relief to my patients; while in the house, and in very aggravated cases, I would of course recommend the recumbent position; standing in one posture for any length of time aggravates the pain very much.

I have never seen any of the fearful effects, stated by Dr. Meigs, after delivery, which I could trace to varices. In an

aggravated case which I attended lately, some of the vessels were as large as my forefinger, extending all the way to the external *labia*, and during a pain I every moment expected that one of them would burst amongst my fingers. Not twelve hours after the labour no trace of them were to be found, and the patient had a good recovery; in phlebitis, phlegmasia dolens, &c.—indeed, in most diseases affecting the lower extremities after delivery—I have uniformly found cold to be the cause, or mechanical injuries done to the uterus internally, either by the hand or instruments.—I am, &c.

JOHN PATTERSON, M.R.C.S.L.

61, St. Nicholas Street, Aberdeen,
8th October, 1845.

Medical Intelligence.

THE AFRICAN FEVER.

WE have heard of no fresh cases of this disease since our last. Although some of the crew of the *Growler*, stationed at Woolwich, had been attacked by the fever, it had not assumed a malignant character, and all restrictions on the vessel have in consequence been removed. The last accounts of the crew of the *Eclair* represent that six of the men were labouring under the fever, two having it in a very severe form. One man was suffering from a second attack. The disease has been most fatal among the crew of this vessel. Out of 145 officers and men, her full complement, 123 have been attacked by the fever since April last, and 65 have died, representing a mortality of more than fifty per cent. It has been already stated that not one of the *Kroomen* or blacks had suffered from an attack.

PARISIAN MEDICAL CONGRESS.

THE aggregate meeting of the members of the medical profession in France, comprising the most eminent practitioners of Paris and the departments, is fixed to take place in Paris on the 1st of November. M. Villeneuve is the President of the Permanent Committee, in which we find enrolled the names of the most distinguished medical men in France. The Government has given every encouragement to this meeting, which it is intended shall last a fortnight. One of the subjects which it is supposed will be discussed, is a plan for the better organisation of the profession in France, preparatory to legislation.

THE LONDON MEDICAL DIRECTORY.

WHILE lawyers have been long provided with a law-list, whereby they may soon distinguish the interloper from the regular practitioner, the medical profession has been without any sort of guide to the qualifica-

tions or standing of those who practised as physicians or surgeons in the metropolis. An attempt was made during the last year to supply this deficiency; but owing to some members not having received circulars, and others not giving themselves the trouble to furnish any replies, the work was sadly defective. A new edition is about to appear; and as the utility of such a work must depend upon its completeness, we strongly urge those of our professional brethren whose names have been omitted in the first edition, to forward them to the publisher*, with their addresses. We look upon this as a praiseworthy attempt to supply the place of the bungling lists which have been occasionally issued by the College of Surgeons and the Apothecaries' Society. In the absence of a correct Government register, much good will be done by an annual publication of this description. We must, however, protest against the absurdity of each man enrolling his literary contributions with his name and qualification. We do not refer to a directory to find out whether a practitioner has published books, or contributed papers to public journals, on the spleen, liver, or kidneys, &c.; but to find a name, address, and qualification. It appears to us to be a degrading kind of advertisement, quite misplaced, and for which there is no precedent in other works of this kind.

THE HANWELL LUNATIC ASYLUM.

FROM the recent report of the visiting justices of the Hanwell Lunatic Asylum, it appears that amongst other efforts which have been made for the improvement of the means of occupation for the patients, has been the introduction of a printing press and cases of type, in consequence of several of the unfortunate men who are under their care having been printers. The report goes on to state, that this proceeding has been very beneficial in its operation, inasmuch as that whilst on the one hand it had afforded a pleasing employment to the inmates, so, on the other, the committee had turned the matter to a profitable purpose, for the patients were so far recovered as to be able to print a variety of documents which were necessary for the use of the asylum itself. Another beneficial effect which the printing materials had led to, was the fact of their having stimulated the dormant intellectual energies of some of the other patients, by whom several specimens of poetic writing of a high character had been produced, all of which had subsequently been printed by the "Hanwell press."

GENERAL MEDICAL ANNUITY FUND.

At a Meeting of the Committee for the formation of a Medical Annuity Fund, held

* Mr. Churchill, Princes Street, Soho.

at Northampton, on the 8th ult., *Richard* Robertson, M.D. F.R.S. in the Chair, it was resolved: "That a Medical Annuity Fund be forthwith established for the payment of Annuities to superannuated or disabled Members of the Medical Profession, their widows and orphans. The fund to be open to Subscriptions from the legally qualified Practitioners of the Medical Profession in the United Kingdom; and that the following be the Rules and Regulations of the Institution.

1. That a Society be established for granting Annuities to superannuated or disabled Members of the Medical Profession, their widows and orphans; and that it be called "*The General Medical Annuity Fund.*"
2. That the appointment of the Officers of the General Medical Annuity Fund be vested in the Provincial Medical and Surgical Association.
3. That the General Medical Annuity Fund be under the management of a President and sixteen Directors, who shall be subscribers to the Fund. The Officers shall consist of a President, who shall be the President of the Provincial Medical and Surgical Association for the time being, four Trustees, a Treasurer, and a Managing Director, who shall be permanent Officers; ten Annually Elected Directors, and a paid Secretary. The Trustees shall invest the Funds of the Society in Government Securities. The Treasurer shall, by his Banker, receive subscriptions from the Secretary, and shall pay over the same to the Trustees as soon as they amount to one hundred pounds; and he shall pay the Annuities as the same may be granted and become due. The Managing Director shall conduct the general business of the Society; shall countersign all receipts for subscriptions; transmit to the Directors, ten days prior to their Annual Meetings, the names of the Applicants for Annuities; prepare the Annual Report, and call Special Meetings of the Officers of the Fund, at Northampton, when the same may be required. The Elective Managers shall, with the other Officers of the Fund, direct the management of the business of the Institution, and determine upon all applications for Annuities. The Secretary shall receive all subscriptions and donations, shall give proper receipts for the same, shall pay over the money in his hands to the Banker of the Treasurer, as soon as it shall amount to the sum of twenty-five pounds; shall keep the books of the Institution, preserve all letters and papers addressed to the Society, and shall retain copies of all papers and documents issued from the office; moreover, he shall attend upon the Treasurer or his Bankers when required; and appear at all Meetings of the Directors, with all the books, papers, and

necessary documents. 4. That any legally qualified Medical Practitioner in the United Kingdom, may become a Member of the General Medical Annuity Fund by the payment of an annual subscription of one guinea, the same to be paid in advance, and to be due on the first of July in every year. Subscriptions will be received from new Subscribers any time prior to the 30th day of June in each year, when the annual accounts will be made up; but every subscription must be renewed within three months after the first of July in each year. At the expiration of the fifth consecutive year of his subscription, any Member, or his widow or orphans, will become eligible to receive an annuity. Subscriptions may be paid in advance for any number of years; but no member, or his widow or orphans, will be eligible to receive an annuity unless the Member survive five years from the payment of his first subscription. Any member neglecting to pay his subscription within three months from the first of July, shall be written to by the Secretary, and reminded that his subscription is in arrear; and if the same shall not be paid within one month from the date of such notice of arrear, the subscriber shall lose, *ipso facto*, his title of membership; but he will be eligible to commence again as a new subscriber. If any Member shall publicly advertise any secret medicine, or publicly advertise to cure any diseases empirically, he shall cease, *ipso facto*, to be a Member of the General Medical Annuity Fund. Subscribers on paying their first subscription, must give in their Christian and Surname, and their residence, at full length, together with their age last birthday. 5. The payment of the Annuities will be made by the Treasurer half-yearly in advance; the names of the Annuityants will not be published otherwise than by their initials; and a certificate will be required half-yearly, stating that the Annuityant still requires the assistance of the Fund. For every one hundred subscribers there will be three annuities, not exceeding £25, to superannuated or disabled Members; and three annuities, not exceeding £15, to widows and orphans.

The following Gentlemen have been appointed Officers of the General Medical Annuity Fund: *President*, Charles Fox Favell, M.D. Sheffield. *Trustees*—C. Hastings, M.D. Worcester, H. W. Rumsey, Esq. Gloucester, Henry Terry, Esq. Northampton, and Robert Ceely, Esq., Aylesbury. *Treasurer*—Archibald Robertson, M.D. F.R.S., Northampton. (*Banker*—"The Northamptonshire Union Bank.") *Managing Director*—Edward Daniell, Esq. Newport Pagnell. *Elective Managers*—Richard Faircloth, Esq. Newmarket; J. G. Appleton, Esq., Hitchin, Herts; J. G. Crosse,

Esq. Norwich; T. Paget, Esq., Leicester; Francis Elkington, Esq., Birmingham; William Budd, M.D. Bristol; Charles Cowan, M.D., Reading; Edward Holme, M.D. Manchester; Peter Martin, Esq., Reigate; and W. Kent, Esq., Walsham-le-Willows, Suffolk. *Secretary*—Mr. Joseph Staines, Newport Pagnell.

REMARKS.—Looking at the objects of this Society, and the names of those gentlemen who have been appointed Officers of the Fund, we do not hesitate to recommend it to the charitable notice of our professional brethren.—ED. GAZ.

OBITUARY.

DIED, on Monday the 13th instant, at the residence of his father, Montague Gossett, Esq., Mr. Robert Gossett, surgeon, in his 26th year. Mr. Gossett was a man of very estimable character, and of great promise in his profession.

Proceedings of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, Oct. 13, 1845.

DR. THEOPHILUS THOMPSON, PRESIDENT.

Practice in Placenta Prævia.

MR. STEDMAN, in allusion to the discussion at the last meeting, referred to the case of a woman in whom the placenta was expelled by the natural parturient efforts. The hæmorrhage ceased immediately the placenta was thrown off. The feet presented. He had seen two other cases in which the placenta was similarly expelled, and in each instance hæmorrhage immediately ceased. With respect to the old mode of practice in placenta prævia, he might observe, that it was not always so easy to pass the hand into the uterus, and turn the child, as some of the speakers seemed to think. Cases might, and did, occur, where it was desirable to resort to this proceeding, and in which it was successful; these were, however, generally instances in which the woman had borne children before, and the pelvis was capacious. With first children the proceeding was much more difficult. One argument in favour of the removal of the placenta, as practised by Dr. Simpson, consisted in the fact, that the hæmorrhage came from the placenta, when that body was situated over the os uteri.

Dr. WALLER observed, that generally in these cases there was no contraction of the womb; would the removal of the placenta produce this contraction, and stop the bleeding? We were generally called to these cases when there was hæmorrhage only, and

no contraction. He related a case of this description, in which a woman was reduced so low by the hæmorrhage, and in which there was no pain, that he performed transfusion to the extent of twelve ounces; she rallied somewhat, but still there was no pain; six hours after, transfusion was again performed, and she slept for six hours; labour-pains then came on, and she did well. With respect to the removal of the placenta, it was just as difficult to effect this as to remove the child;—why then, if there was no pain, should we not bring down the child after the placenta had been removed?

Mr. DENDY had found no difficulty, in cases of placenta prævia, in passing the hand through, or by the side of, the placenta. He suggested that, in cases where the placenta was over the os uteri, and a portion of it was so adherent that it prevented the os uteri from dilating, it would be good practice to entirely detach the placenta.

Mr. CRISP had been informed, by two practitioners, of cases similar to the one detailed by Mr. Stedman. In these instances hæmorrhage had continued for some time; the placenta was expelled, and there was no after-hæmorrhage.

Mr. HEADLAND referred to eight cases of placenta prævia, recorded very lately in the *MEDICAL GAZETTE*, by Dr. R. Lee, in which the old practice was, in every instance, successfully employed. If so successful, why should we depart from it? He related a case of placenta prævia, in which hæmorrhage continued after the placenta had been expelled into the vagina.

Mr. CRISP mentioned, that in previously recorded cases, Dr. Lee had lost fourteen cases out of thirty-eight. Dr. Simpson's loss was one in fifteen—by the old method, it was one in three. He related the case of a woman who, during the last month of pregnancy, suffered from frequent attacks of hæmorrhage, consequent upon the situation of the placenta over the os uteri. The child was at last turned, and delivery effected; but the mother perished. If the placenta had been detached in this case, the bleeding would have ceased, and the woman's life been saved.

Mr. HEADLAND said, that the eight last cases recorded by Dr. Lee, had occurred in his private practice, and aid was afforded sufficiently early; whilst the other cases, which were usually those of charity patients, had been under the care of midwives, or incompetent persons, and were not attended to sufficiently early. Most of the cases recorded by Dr. Rigby, of Norwich, had also occurred among the neglected poor. After an experience of twenty-five years, he, Mr. Headland, had only seen one fatal case of placenta prævia.

Dr. WALLER had found in his own

practice no such mortality as that referred to by Mr. Crisp.

Some discussion followed, in reference to the connection between the foetus and mother.

With respect to the question at issue, it was contended by Mr. Fisher, that it was desirable to take as facts those cases that were recorded, and then to explain, if possible, the phenomena presented to us.

Dr. BENNETT made some general remarks on certain anomalies in the discussion, after which the Society adjourned.

Monday, October 20th.

Purpura and its treatment.

Mr. DENDY related a case of purpura, occurring in a little boy, four years of age, of very debilitated constitution, and who, when two years of age, had suffered from an attack of "congestion of liver," attended with opisthotonos and other formidable symptoms. Five months since, the little patient became affected with a pain in the side, and immediately after purpura developed itself; for fifteen weeks the child was under treatment, and took tonics without any relief; five weeks since, he was brought to Mr. Dendy; he was then not constitutionally ill, and was able to walk. It appeared that he had lived almost entirely on bread and water, and the stomach was unable to retain any sweet or oily matter. Whatever might be the predisposing cause of the disease, he felt convinced that the exciting cause existed in the alimentary canal and portal system. With the view of improving the secretions, he ordered three grains of calomel to be taken every night at bed-time for fourteen nights; and during the day he prescribed five drops of Fowler's solution of arsenic to be taken three times a-day; the dose to be gradually increased until it reached twelve drops. Under this apparently opposite treatment, of extreme purgation and extreme stimulation, the patient recovered without any bad effects having developed themselves from either of the powerful medicines prescribed.

Mr. HEADLAND thought, that to consider purpura to be the result merely of disorder of the chylipoietic viscera, was taking much too narrow a view of its origin. He thought that the treatment which usually succeeded in the cure of this disease, indicated an impoverished state of the blood, arising from want of fibrine, or some other of its elements, in which respect the complaint resembled scurvy. His usual treatment, after improving the secretions, was the administration of lemon-juice, the recommendation of good air, and treatment which might be called, generally, anti-scurbutic. It would yield also to bark and steel, or

chlorate of potash. In one severe case of purpura occurring in a child from whom there was excessive hæmorrhage, consequent upon the removal of one of the milk teeth, the purple spots became pale, and the patient nearly sunk; turpentine administered internally appeared here to have a marked good effect.

Dr. THEOPHILUS THOMPSON observed, that purpura developed itself in different conditions of the system. In one, attended with congestion of liver, calomel, by putting the secretions right, would be of much service. In other cases, the disease appeared to have its origin simply in irritation of the mucous membrane, and then demulcents were indicated. Other cases, again, did best under the use of acids.

Dr. WILLSHIRE said, that purpura appeared to occur under two circumstances: in one there was a preponderance of the watery portions of the blood; in the other, the blood might be normal, but the walls of the smaller vessels allowed the fluid to permeate. In the first, saline purgatives might be useful by lessening the quantity of watery fluid.

Dr. WALLER had seen a case lately, dependent on hepatic congestion, which was cured by brisk purgatives, followed by tonics. He inquired the condition of the blood corpuscles in this disease.

Dr. G. O. REES remarked, that we knew little of the condition of the blood in purpura. When viewed under the microscope, in advanced cases, the blood appeared to be entirely broken up; in other cases, and these too of a severe character, the blood appeared normal. In some cases, the blood was buffed and cupped; in others, there was deficiency of fibrine. He thought that these facts indicated the presence of two stages in purpura, such as for instance were known to exist in Bright's disease, in the first stage of which there was, in the blood, a deficiency of albumen and a superabundance of blood corpuscles; in the second stage the opposite state presented itself. It should be recollected, that when we gave lemon-juice in this disease we were really giving soda, for lemon-juice was a super-citrate of soda, rendering the urine alkaline. He had seen cases do well under the employment of carbonate of soda.

Dr. CHOWNE considered that any debilitating cause might induce purpura. It did not, however, depend wholly on poverty of the blood, as it appeared sometimes to be a local disease, the constitution being robust, and the patient plethoric. The treatment must depend on the condition presented by each case.

Dr. A. B. GARROD had found various conditions of the blood in purpura; in some cases there was a deficiency of fibrine, in others excess of it; but we were ignorant

entirely of the essential condition of the blood in this disease.

At the next meeting a successful case of laryngotomy will be detailed.

FORENSIC PHYSICS.

IMPORTANT METEOROLOGICAL QUESTION.

A CURIOUS case is about to be tried in France, involving an important question connected with meteorology. About ten weeks ago, several factories were destroyed, at a place near Rouen, by a violent hurricane. The buildings were completely unroofed, and the destruction was so rapid that a great number of lives were lost. It is a remarkable meteorological fact that the storm appeared to spend itself upon this locality. The proprietors of the destroyed factories have alleged that the damage was caused by the electric fluid; and as they were insured against the effects of lightning, they have brought an action against the Insurance Company for the amount of the policy. The payment of this is disputed on the ground that the buildings were demolished by a storm of wind or hurricane, and not by electricity. The allegation of the Insurance Company is supported by the high authority of M. Pouillet, who has visited the spot and examined the premises. Should the case come to trial in the absence of direct proof of the agency of lightning, either from marks of combustion, or the direct evidence of eye-witnesses, this important question will probably be referred to a commission of scientific men; and the Court will probably be guided by their decision, as our Admiralty Courts are now guided, in questions connected with the collision of vessels at sea, by the opinions of experienced nautical men. In all other cases, except *navigation*, however, the common English practice is to call for the opinion of the person who happens to live nearest to the spot where the catastrophe occurred! The above case shows how unexpectedly questions requiring great scientific knowledge may arise in relation to the civil rights of individuals.—*Comptes Rendus*.

AMPUTATION OF THE WOUNDED PART IN CASES OF TETANUS.

CUTTING off the wounded part has been recommended by Larrey. I was present when Mr. Obrey amputated a limb where compound luxation of the thumb had caused tetanus; but he might as well have left it on. I myself have lately put it to the test in Steevens' Hospital in the case of a man whose arm had been greatly lacerated; but he died in the ordinary period as if nothing had been done: it made matters neither better nor worse.—*Professor Colles's Lectures*.

ROYAL COLLEGE OF SURGEONS.

Gentlemen admitted Members.

FRIDAY, Oct. 17.—G. S. Clement.—A. B. Wall.
—C. E. E. Welchman.—J. Taylor.—R. Edwards.
—J. Nagle.—T. J. Blake.—R. Harper.—H. A.
Newell.—J. J. R. Dalliston.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

THURSDAY, Oct. 16.—Thomas Godwin Salt,
Rugely, Staffordshire.—William Henry Young,
Sandal, Wakefield, Yorkshire.—Francis Horsfall,
Wakefield, Yorkshire.—Andrew Davies, Haver-
fordwest, Wales.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Oct. 18.

BIRTHS.	DEATHS.	Aver. of 5 yrs.
Males... 659	Males... 384	Males... 491
Females . 651	Females . 387	Females . 472
1310	771	963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	109
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	127
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	161
EAST—Shoreditch; Bethnal Green; White- chapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	170
SOUTH—St. Saviour; St. Olave; Bermond- sey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich (Pop. 479,469)	204
Total	771

CAUSES OF DEATH in the Week ending Oct. 18.

Col. A. Weekly Averages of 5 Autumns; Col. B. of 5 Years.

ALL CAUSES	771	A.	B.
SPECIFIED CAUSES	766	1020	963
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	223	201	184
<i>Sporadic Diseases, viz.—</i>			
2. Dropsy, Cancer, &c. of uncer- tain seat	65	109	106
3. Brain, Spinal Marrow, Nerves, and Senses	113	155	159
4. Lungs, and other Organs of Respiration	193	323	292
5. Heart and Blood-vessels	28	27	24
6. Stomach, Liver, and other Organs of Digestion	68	68	71
7. Diseases of the Kidneys, &c. ..	10	6	6
8. Childbirth, Diseases of the Uterus, &c.	12	12	10
9. Rheumatism, Diseases of the Bones, Joints, &c.	7	6	6
10. Skin, Cellular Tissue, &c.	0	1	1
11. Old Age	28	74	70
12. Violence, Privation, Cold, and Intemperance	19	27	26

The following is a selection of the number
Deaths from the important special causes:—

Small-pox	12	Convulsions	23
Measles	71	Delirium Tremens	1
Scarlatina	20		
Hoooping-cough ..	39	Bronchitis	31
Croup	7	Pneumonia	49
Thrush	5	Phthisis	96
Diarrhœa	25	Dis. of Lungs, &c.	5
Dysentery	4		
Typhus	22	Teething	11
		Gastritis	0
Hæmorrhage	1	Enteritis	14
Dropsy	10	Peritonitis	2
Debility	14	Tabes Mesenterica	13
Sudden deaths ..	5	Dis. Stomach, &c.	7
		Dis. of Liver, &c.	6
Hydrocephalus ..	29		
Apoplexy	12	Childbirth	8
Paralysis	21	Dis. of Uterus, &c.	2

REMARKS.—The total number of deaths was
249 below the autumnal and 192 below the annual
average. The deaths from Zymotic diseases
are above the averages. The mortality from
Measles is on the increase, being 40 above the
autumnal average (deaths 71). In all the dis-
tricts, the mortality is below both averages.

ROYAL OBSERVATORY, GREENWICH.

METEOROLOGICAL SUMMARY

For the week ending Saturday, Oct. 18.

	Max.	M.n.	Mean.
Height of Barometers	30.31	29.97	30'
" " Thermometer ..	64°	41°	52.9°
Self-registering do.	84.8 ^b	50.8	
" in the Thames water	51.8	50.8	

^a From 12 observations daily. ^b Sun.

RAIN, in inches, 0.01: sum of the daily obser-
vations taken at 9 o'clock.

Meteorological.—The mean temperature of the
week was 2.5° above that of the climate of London
for the year, but nearly 10° below the mean
summer temperature. The extreme diurnal
range in the self-registering thermometer was
49.5°. On an average of 25 years, the mean
temperature of the week has risen 2.7°.

NOTICES TO CORRESPONDENTS.

Dr. A. J. Hannay's paper will be inserted in an
early number. The correction shall be made,
and a proof sent.

The communications of Dr. Dick, Mr. Erichsen,
Dr. Camps, and Dr. Robinson's lecture on the
Study of Pathology, in our next.

We have received a letter from the professional
gentleman who gave evidence in the case of
assault on a pregnant female, reported at page
1083 of our last number. We will endeavour
to find room for it in our next.

Mr. J. Grantham's paper on the Therapeutic
Effects of Nitrogen in Typhus Fever will be
inserted.

We have been obliged to postpone Dr. Jones's
paper on the Diseased Liver of Rabbits until
next week.
Professor Faraday's Lectures on the Metals will
be shortly resumed.

Received.—Dr. A. J. Hannay.—Dr. T. Mayo.—
Dr. Lever.—Mr. J. G. Crasse.—Mr. F. Culder.
—Mr. E. Copeman.—Mr. W. Brown.

Erratum, in our last, p. 1075:—for iotromachia,
read iatromachia.

Lectures.

CONTRIBUTIONS TO

MICROSCOPICAL MORBID
ANATOMY,*Selected and Translated from the German
Work of*DR. JULIUS VOGEL, of Göttingen,
Entitled "Erläuterungstafeln zur pathologischen
Histologie."

By W. S. KIRKES, M.R.C.S.L. &c.

[Continued from page 883.]

THE following two cases afford good examples of the practical advantages which may be sometimes derived from information obtained by the use of the microscope.

CASE I.—The subject of the first case was a nun who, for some time past, had experienced a gradually increasing difficulty in deglutition, and was at length unable to open her mouth, owing to the presence of a hard deep-seated tumor, which was found situated behind the angle of the lower jaw. Various remedies, both general and local, were resorted to, for the purpose of removing this tumor, but without success; and at length a small fistulous opening formed itself just beneath the ear, from which at each effort of mastication or articulation a small drop of fluid exuded. It became a matter of importance to determine, if possible, the true nature of this obscure tumor; and for this purpose the fluid which exuded from the fistulous opening was several times submitted to examination beneath the microscope. The portion first examined consisted of a few drops of an opaque yellowish-white semifluid matter, of a distinct alkaline reaction, and an ammoniacal odour. Beneath the microscope it appeared composed of an entirely amorphous material, within which were contained a few blood corpuscles, numerous drops of fat, and some scattered crystals of cholesterine; besides which, and especially, there were observed in it a large quantity of cells, most of which were pale and of a large size, none being less than one-hundredth of a line in diameter. The majority were roundish and globular, some were caudate, others elongated into fibres, and others of an irregular form; they all possessed distinct nuclei with nucleoli. In some places these cells appeared inclosed within larger or parent cells; very few were granular. In no part of the material could ordinary pus corpuscles be found. These various cells were little if at all affected by acetic acid: by this reagent, however, a large quantity of an amorphous substance was

coagulated. On the next day another portion of the fluid was examined, when, beside the above-mentioned constituents, a number of ordinary pus corpuscles were observed, derived in all probability from the walls of the fistulous passage. Several subsequent examinations were made, and the same results constantly obtained, so far as regards the large compact cells which were always found in the fluid. The presence of the pus corpuscles was uncertain, occasionally being discovered, occasionally not. Inasmuch as these cells were of a kind which is never met with in the fluid of an ordinary abscess, or in simple induration, and inasmuch as they corresponded very closely in form and in most other characters to the cells described as constituting the chief elements of medullary cancer*, the tumor whence they were derived was considered to be of a malignant character, probably one of medullary carcinoma; and an unfavourable prognosis was in consequence pronounced. The sequel of the case proved the correctness of this prognosis, for the patient gradually sank, and died in about a month afterwards, without the occurrence of any symptoms indicating an affection of any internal organ. The case unfortunately could not be rendered complete by the opportunity of a post-mortem examination, but it was satisfactory in showing the correctness of a prognosis founded almost entirely on information obtained by the employment of the microscope.

CASE II.—In the second case, the information afforded by the use of the microscope led to a favourable, and, as the result proved, a correct opinion being pronounced respecting the nature of an ulcer of suspicious character. A woman, aged 50, of small square stature, bad habit of body, and cachectic aspect, had an ulcer on her left breast of six months' duration. The breast itself was large and flaccid. The ulcer, which was nearly the size of a walnut, was situated about an inch to the left of the nipple, and had penetrated rather deeply into the substance of the gland. The margins of the ulcer, and the parts immediately around, were very firm and hard; the remainder of the gland quite soft. The left axillary glands were slightly enlarged. The right breast was healthy. It accordingly became a question whether this was a simple chronic ulceration, with induration of the surrounding parts, and requiring simple treatment, or whether it was one of a malignant kind, which might be removed by amputation. To determine this question, the matter discharged from the ulcer was submitted to a careful examination. It was

* Illustrated especially by Figs. 35, 36, and 37, in the number for September 19th.

of a yellowish colour, tolerably thick in consistence, and possessed most of the general characters of pus laudabile. When examined beneath the microscope, numbers of ordinary pus corpuscles, both separate and arranged together in groups, were distinguished in it (fig. 43, *a a**). Between these

FIG. 43.



pus corpuscles were also numerous flat cells, possessing the form and other characters of tessellated epithelial cells, which in all probability they were (*b*). Another portion of the fluid was examined the day following, when, in addition to the above constituents, it contained a few elongated fusiform cells (*f d d*), such as are commonly met with in ordinary cellular tissue and in granulations. The results of the above examinations were considered sufficient to prove that the ulcer was one of a perfectly innocent kind, and to lead to the adoption of a simple plan of treatment. The rapid healing of the ulcer which took place under such treatment confirmed the correctness of the opinion.

Observations on the typhous-material.†

[Many of the German pathologists of the present day, Vogel amongst the number, maintain that during the progress of typhus a certain morbid material, possessed of peculiar characters, and having a tendency to undergo certain metamorphoses; is poured out from the blood into the texture of organs and parts. Rokitsky, indeed, goes so far as to regard this morbid product as bearing a very close analogy to the material of medullary carcinoma. The parts which seem most liable to become the seat of deposition of this morbid material are the mucous membranes, especially that of the small intestines; but it is stated that also the substance of organs, as of the lungs, may, during the progress of typhus, become infiltrated

with a material closely resembling that found deposited in the small intestines. The frequency with which the intestinal canal becomes the seat of extensive disorganization in the progress of typhus, in Germany and in France, has afforded abundant opportunities for a close examination into the nature and cause of this disorganizing process; and the conclusions which have been most generally arrived at by those German pathologists who have especially studied the subject, are to the effect, that this morbid process is attributable to the deposition of, and subsequent metamorphoses undergone by, a peculiar product, which they name the typhous-material. So far as the intestinal mucous membrane is concerned, the condition which immediately precedes the deposition of this typhous-material seems to be one of inflammatory congestion, not however of an ordinary character, but modified by the peculiar state of the system, and by the altered condition of the blood occurring in typhus. This inflammatory action, although at first general, and affecting uniformly a more or less extensive surface of the intestinal mucous membrane, appears in a more advanced stage to localize itself especially in the situation of the solitary and aggregated glands of the small intestines; these glands are usually found the more affected the nearer the lower portion of the ileum they are situated, so that the process of disorganization is commonly most marked in the immediate neighbourhood of the ileo-cæcal valve. The most important subsequent change commonly undergone by the typhous-material after its deposition, is its conversion, together with the mucous membrane covering it, into a dirty brownish-yellow slough, which is sooner or later thrown off, and then the formation of a typhous ulcer results. Vogel has given the particulars of several examinations of typhus, and has described the microscopic appearances of most of the parts, but especially of the typhous-material taken from the intestinal canal, and from the mesenteric glands, which latter structures are usually found affected secondarily to the intestines, being enlarged, firm, of a deep red colour, and, according to Vogel, frequently containing the typhous-material.—Tr.]

Typhous plaques.

The following is a tolerably good description of the typhous *plaques*, or elevated Peyer's patches of glands, as they are observed previous to the formation of sloughs.

CASE I.—In a fatal case of typhus, the *plaques* at the lower portion of the small intestines were of considerable size, being about two inches long, one inch broad, and from half a line to a line in thickness; they had the elliptical form, and were covered

* Magnified 220 diameters.

† The few remarks which Vogel makes on schirrus, melanosis, and other malignant tumors, contain little more than may be found in Müller's work on Cancer, and have been therefore omitted.

with mucous membrane, which was velvety, and supplied with a vascular network visible to the naked eye. When portions of this mucous membrane were examined beneath the microscope, the capillary vessels were observed filled with blood, which appeared as a red perfectly homogeneous fluid, none of the individual corpuscles being distinguishable: it was still fluid, however, and could be squeezed out of the vessels by slight pressure, whereupon the unaltered individual corpuscles became apparent. The vessels were from 1-100th to 1-200th of a line in diameter; the mucous membrane, within which they ran, was colourless, and presented a coarsely granular aspect. The epithelium was desquamated, but the cylindrical cells were found, both singly and arranged in groups, immersed in the surrounding mucous fluid. The mucous membrane and intestinal villi were in places tinged of a brownish-yellow colour by bile. Neither the membrane nor villi were much acted on by acetic acid; a few nuclei, about 1-400th of a line in diameter, and provided with nucleoli, being here and there brought into view by this reagent. When portions from the middle of the typhous *plaques*, about half a line below the mucous membrane, were examined beneath the microscope, they were observed to be traversed by blood-vessels from 1-100th to 1-80th of a line in diameter; these vessels were filled with blood, which was still in a fluid state, and its corpuscles unaltered. These portions themselves were composed almost entirely of a granulo-amorphous substance, between which were observed a few fibres of fibro-cellular tissue, either separate or woven together into bundles. On treatment with acetic acid, a number of cell-nuclei came into view. Immediately beneath the *plaques* was a layer of whitish cellular tissue [the lowest stratum of the submucous tissue], which, under the microscope, presented the ordinary appearance of fibro-cellular tissue. Almost all these fibres disappeared on treatment with acetic acid; a few only remained, and these became more distinct (nucleus-fibres?). Next beneath this layer of cellular tissue came the muscular coat of the intestine, there being no foreign substance between; the individual fibres of this coat were flat, and about 1-500th of a line in diameter; they were rendered pale by acetic acid, whereupon their elongated nuclei came into view. Outside this coat was the peritoneal covering; its blood-vessels were very large, and visible to the naked eye, most of them being rectilinear, and running parallel to the axis of the intestines. This peritoneal coat, when stripped off and examined beneath the microscope, was found to be composed of fibro-cellular tissue, the bundles of which ran in a direction parallel to

that of the axis of the intestines. Between these fasciculi were observed blood-vessels, and numerous elongated caudate cells. The diseased thickening, therefore, was confined to the mucous membrane, and the immediately adjacent submucous tissue, and seemed to be the result of the deposition of a granulo-amorphous material within the healthy tissue of these parts.

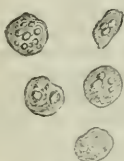
In the particulars of the next three cases are contained accounts of the microscopic characters of the typhous-material, obtained from the mesenteric glands and from Peyer's patches.

CASE II.—A young girl, aged 15, was admitted into the hospital in a state of fever, having been ill fourteen days. The lungs were less affected than is usually the case in typhus; but the abdominal organs were especially implicated, as shewn by the profuse diarrhoea and tympanitic state. The patient's strength rapidly failed, and death ensued on the eighth day after admission. On examining the body the brain and spinal cord were found perfectly healthy; the lungs were sound, with the exception of being somewhat congested in their lower lobes; the spleen was somewhat softened, but the intestinal canal presented the most important pathological lesions. The lower portion of the small intestines was much thickened, all its glands, both those of Peyer's patches and the solitary ones, being infiltrated with typhous-material; the glands of the colon were also swollen and thickened; the mesenteric glands were much enlarged. A few of these enlarged mesenteric glands, about the size of beans, were carefully examined; they contained a soft, medullary, and very friable substance. Examined beneath the microscope, this substance appeared as an amorphous, slightly granular mass, of a brownish-white colour, within which a large quantity of small-sized cells were deposited. These cells had an irregular roundish form; the majority were below 1-300th of a line in diameter; a few measuring from 1-150th to 1-200th of a line; some were distinctly nucleated. By treatment with acetic acid the amorphous substance became transparent, and gradually disappeared, upon which very small cells (cell-nuclei?), with sharp outlines, came distinctly into view, being unaffected by the acid. Both cells and blastema were dissolved by ammonia, and by caustic potash. The glands of the colon contained a substance exactly similar to that found in the mesenteric glands, and in those of the small intestines.

CASE III.—In the case of a soldier who died of typhus, most of the Peyer's and solitary glands of the small intestines were found infiltrated with typhous matter; there was no appearance, however, of ulceration,

the intestinal mucous membrane covering the infiltrated glands being perfectly entire, though highly reddened and vascular. The typhous-material was deposited in the sub-mucous tissue, between the mucous and muscular coats of the intestine [its ordinary seat]. When examined beneath the microscope, it appeared on the whole as an amorphous substance, though in some places there was a distinct cell formation: the majority of these cells contained many nuclei [or young cells?]; they are represented by fig. 44.

FIG. 44.



CASE IV.—In the case of a young man who died of typhus the mesenteric glands were found very considerably enlarged, being equal in size to small apples. When cut into they appeared composed of a greyish-white, uniformly compact, lardaceous substance, which readily admitted of being reduced to a pulp. When examined beneath the microscope this substance was found to consist of a heap of granules, contained within a confused amorphous-basis substance; around some of these granules (or nuclei, which they were) cell-walls were developed. These granules were not dissolved by acetic acid; on the contrary, they were rendered more compact and more distinct by this reagent, and many of them were then observed to be provided with nucleoli, which afforded a further proof of their being cell-nuclei: the amorphous basis-substance was rendered paler by the acetic acid. Through treatment with caustic ammonia the entire mass became very pale, and was reduced to a pulp: there appeared some very indistinct traces of vessels.

In the same body Peyer's patches of glands were found greatly swollen, and converted into the typhous *plaques*, some of which had gone on to ulceration, whilst over others the intestinal mucous membrane was still entire. Those patches which were not yet ulcerated were on the average about one inch in their longitudinal diameter, from eight to ten lines broad, and about half a line in thickness; they presented the usual elliptical form peculiar to the patches of glands. The mucous membrane by which the patches were covered, as also that lining the other part of the intestinal canal, appeared somewhat loosened [or succulent], and was pale in colour, except at some of the folds, where it was turgid with vessels visible to the naked eye, and still more clearly when ex-

amined with the microscope. The epithelium was desquamated. The mucous membrane itself was very soft, and beneath the microscope appeared slightly granular; by acetic acid it was rendered harder, somewhat brawny, and coarsely granular; it seemed as if the acid coagulated some mucus-like substance. The swelling of the glandular patches or *plaques* appeared to result simply from a thickening of the mucous membrane, for no deposit of any foreign substance, no peculiar typhous material could be perceived. The muscular coat, also, was somewhat thickened, having a diameter of one-fourth of a line, and more. The margins of the ulcers which had become formed were overhanging and somewhat jagged, their bases uneven. The material which formed the base was soft and lardaceous, and appeared somewhat granular beneath the microscope; the fluid with which it was soaked became converted by acetic acid into an amorphous or slightly fibro-granular coagulum. The deeper this substance forming the base of the ulcers was examined the firmer and more lardaceous did it become, whilst under the microscope there was found mixed up with it bundles of fibro-cellular tissue, derived doubtless from the submucous cellular tissue, within which the substance was deposited.

CASE V.—In the next case the disease had proceeded to extensive ulceration. The patient was a young man, aged 17; the abdominal organs were especially affected, as was indicated by the excessive diarrhoea and tympanitic state of the abdomen: he died on the 5th day after admission into the hospital, with symptoms of perforation of the intestines. On examining the body both lungs were found covered on the surface with a gelatinous-looking exudation, which consisted of serum infiltrated into the tissue of the pulmonary pleuræ: the lungs themselves were tolerably healthy, though somewhat congested with blood in the lower lobes. The abdomen was much distended, and contained in its cavity a large quantity of sero-purulent fluid: almost all the viscera, and especially the coils of intestine, were smeared over with a gelatinous-looking exudation, and with layers of coagulated lymph, whereby the several parts were more or less agglutinated together. The mesenteric glands were considerably enlarged; almost all the Peyer's patches of glands in the small intestines were in a state of ulceration: one of these ulcers had proceeded to perforation of the intestine. The intestinal mucous membrane had entirely disappeared from the situation of these various ulcers, and in place of it was found a yellowish-white lardaceous substance (typhous material). Upon examining portions of this substance beneath the microscope they appeared as imperfectly granular structureless

masses, of a brownish-white colour, becoming softened and transparent by acetic acid and by ammonia, exactly like coagulated fibrinous substance. Within many parts of this amorphous substance were found irregularly-shaped cells of from $\frac{1}{300}$ to $\frac{1}{400}$ of a line in diameter, and numerous granules of fat.

[On the subject of the typhous process, the following observations have been recently made by Dr. Engel* :—

Usually from the second to the eighth day is the period within which the typhous material begins to be deposited; when once the process has fairly commenced, it seldom recedes, except in some anomalous forms of the disease. The product found in the intestines may be either in a fluid or solid form. The fluid matter is a viscid opaque greenish-brown material, which when allowed to remain at rest for some time deposits an abundant sediment of epithelial cells, crystals of ammonia-phosphate of magnesia, and brownish flocculent coagula, whilst the fluid itself remains of a brownish or reddish colour, and contains a considerable quantity of albumen: it undergoes no other change but that of decomposition. The solid portion of the typhous product appears in the solitary and Peyerian glands of the small intestines, in the follicles of the large intestines, and in the mesenteric glands; it assumes the forms of these various parts in which it occurs, has a soft pulpy consistence, a greyish-red colour, and appears shortly after its deposition as a finely granular substance, mixed with blood-corpuscles, and seems to be chiefly composed of albumen. There is nothing, however, in the colour, form, or other characters of the typhous product, which would enable it to be recognised independently of the situation of its deposit, and the circumstances under which it is found. This solid deposit is capable of undergoing various changes; thus it may suppurate, or it may become organised into cells; or, again, it may break up, and be cast off (in the form of a slough) leaving an ulcerated surface behind. In the great majority of cases the formation of ulcers sooner or later takes place after the deposition of either the solid or fluid kind of the typhous material, upon the occurrence of which ulceration the deposition of the solid matter entirely ceases, and that of the fluid almost so. The typhous ulcer is round when seated in the place of a solitary gland, elliptical when it corresponds to one of Peyer's patches, and of an irregular form when enlarged by the coalescence of several adjacent ulcers. The margins are smooth and even, somewhat undermined; the base smooth in the ordinary variety, but uneven in anomalous forms of typhus. The ulcer in ordinary typhus is

simply an ulceration of the intestinal mucous membrane, without any specific secretion; there is seldom found any fresh deposit of typhous material in the neighbourhood of a fully-formed ulcer. When the ulcer proceeds to a cure, a gradual reparation of the lost substance takes place, by a thinning of the margins, and an exudation from the base, and eventually a typhous cicatrix is formed. Should the large size of the ulcer, or the feeble strength of the patient, render this process of cure in one or more ulcers impracticable, then does the ulcer proceed to perforation. Among the anomalies sometimes observed in this diseased process, are: first, a protracted stage of the congestion, which usually precedes the deposition of the typhous material; the mucous membrane of the intestine is beset with numerous fine black points, a brownish halo appears round the solitary glands, and Peyer's patches have a greyish colour: secondly, an unusual length of time occupied by the process of infiltration, whilst the material deposited does not break up and fall off in the usual manner, or does so very imperfectly; the Peyer's patches remain swollen and coloured, and a simple serous fluid exudes from them on pressure; the mesenteric glands are swollen, though without containing any perceptible typhous material. There may also be an anomaly in the metamorphoses undergone by the typhous product, the changes commencing first in the upper part of the intestine rather than, as is usually the case, in the neighbourhood of the ileo-cæcal valve, where the Peyer's patches are found comparatively uninjured. These various irregularities commonly occur in individuals of naturally indifferent health, whilst it is in young healthy subjects that the ordinary form is met with. Anomalies in quantity of the product are considered to be present when only two or three of Peyer's patches are infiltrated, or when, on the contrary, the material is found deposited along the entire extent of the intestine from the commencement of the ileum to as far as the rectum. When the quantity of the product is anomalously small it is usually also soft, and undergoes conversion into a puriform material: when this is the case intestinal perforation most frequently occurs.

In some cases of typhus (which may be either epidemic or sporadic) where before death the blood in the body undergoes changes closely allied to those of decomposition, namely, conversion into a thin pale-reddish dirty-looking uncoagulable fluid, which readily admits of imbibition, and rapidly putrifies, very little typhous deposit into the intestinal follicles or mesenteric glands takes place. The fluid typhous material is more like water containing dirty flocculi than actual exudation. The solid

* Schmidt's Jahrbücher, No. 7, 1845.

infiltrated material, which does form, is of a dirty greyish or reddish colour, very soft, often nearly fluid, and the mucous membrane covering it has a soft succulent character: this material becomes converted into a purulent, or sanious matter, which destroys the subjacent tissues, and thus frequently leads to perforation. None of the stages of ulceration, so characteristic of the normal typhous process, are observed here; everything indicates a state of decomposition of the blood.

In most points the above account corresponds very exactly, occasionally almost verbatim, with the excellent description of the typhous material, and the typhous ulcer, furnished by Rokitsky*; it also agrees sufficiently with Vogel's account, although in neither of them does sufficient stress seem to be laid on the sloughing of the typhous product and of the mucous membrane covering it.—Tr.]

HEMIPLEGIA.

CASES have been recorded in which paralysis has occurred on the same side as the lesions in the brain. Mr. Hilton has endeavoured to explain this exception by referring it to a disposition of fibres in the decussation; but, as Dr. Bennett has justly argued, there is strong reason for doubting whether disease in the brain ever causes a direct influence; for of the many thousand cases of cerebral hæmorrhage, tumors, &c. which have been recorded, we are acquainted with twenty-one only in which paralysis is said to have resulted from disease in the same side of the brain as the palsied side of the body; and, on analysis of these, more than one half are imperfect and doubtful. As the instances, therefore, of this occurrence are so few, may we not consider that the palsy, even in them, was produced in the usual manner, and that the lesion which attracted attention had no reference to the complaint? Numerous instances have occurred of abscesses, softening, and other alterations of the brain having been found, but in which no paralysis had been observed during life; and a still greater number are on record, in which there was well-marked paralysis, but no appreciable lesion of structure after death. It is by no means improbable, therefore, as paralysis may be induced without leaving any traces, that, in those few cases where the palsy and the lesion of the brain were in the same side, it was really caused by undetected changes in the opposite hemisphere of the brain; and, as is sometimes the case, that the disease found in the hemisphere of the paralysed side had not occasioned the loss of motion.—*Copland's Dict. Pr. Med.*

* An able review of this is contained in the 15th volume of the Brit. and For. Med. Rev.

Original Communications.

REMARKS ON THE

EFFECTS OF OBLITERATION OF THE CAROTID ARTERIES UPON THE CEREBRAL CIRCULATION.

By NORMAN CHEVERS, M.D.

THERE are many important facts in medicine and surgery, which, although they have been very distinctly broached by writers both in ancient and modern times, are not by any means clearly and generally known to the profession at large. Of this kind is the subject upon which I propose to make some observations.

It has, from a very early period, been a matter of inquiry with physiologists whether occlusion of one or both of the common carotid trunks is liable to produce any material effect upon the circulation through the brain; and innumerable experiments have been performed upon the lower animals for the purpose of deciding this question, but with remarkably varying results. Cases have been reported—some very recently—which clearly prove that occlusion of one carotid artery may produce fatal lesions in that part of the brain to which the obstructed vessel passes; and there can be no doubt that the narrators of those instances, and perhaps many others in the profession, are perfectly well aware that cases of this description are not to be regarded as accidental, but remain as evidences that such obstruction to the cerebral circulation is attended with dangers of an apparent and definite kind. Still, I apprehend, it is the opinion of surgeons generally that a ligature may be applied to one of the carotid arteries without incurring the slightest danger of cerebral disease—certainly an erroneous and a dangerous conclusion.*

* The whole of Mr. S. Cooper's remarks, in the Surgical Dictionary, upon ligature of this artery, are intended to prove that "the carotid may be tied without injuring the functions of the brain;" and so strongly have Sir A. Cooper, M. Munce, Mr. James Miller, and several other surgeons, enforced the same principle, that the reader of their observations is necessarily led to the conclusion that they considered that cerebral lesions would not, in any instance, be induced by the operation. The writer of the article "Aneurism," in the Cyclopædia of Practical Surgery, speaks very decidedly on this point, observing that "the sources of supply are so abundant after the ligature of the carotid, that there is not the slightest danger to the parts, either within or without the cranium, from which the main stream has been diverted; and no one now entertains the slightest fear for the intellectual and other functions of the brain," &c. (Vol. i. p. 263). It is, of course, an unquestionable fact, that the vessel may generally be secured without injuring the cerebral circulation; but, unfortunately, the

The experiments which have been made upon the lower animals for the purpose of ascertaining the real nature of the effects produced upon the brain by tying the carotids, have been exceedingly numerous, and their results have been singularly conflicting; the dissimilarity of results occurring not only between the experiments of different physiologists, but frequently, also, in the operations of the same investigator. The effects, too, of tying one or both of the carotids in the human subject have been extremely contrary; and this diversity of results has necessarily led to some uncertainty, and probably to not a little error, with regard to the operation as a measure in practice.

The importance of the subject is so great that I have thought it worth while to bring together, as far as possible, the whole of the conflicting facts which have been adduced in illustration of the disputed question; as it is evident that a comparison of this kind is the only mode by which any satisfactory conclusions upon so doubtful a subject can be arrived at. I fear this comparison will be found to leave the matter still undecided as a physiological question, but trust that, viewing it in the light of a point in surgery, some definite and important results may be adduced.

History of the experiment of tying the carotid arteries in the lower animals.

From a very early period in the existence of the science of anatomy, the fact that obstruction of the circulation through the common carotid arteries is liable to produce injurious effects upon the brain, appears to have been well understood, and this truth has never been altogether lost sight of. The fact that the Arabians termed the carotid arteries the "apoplectic veins" proves that the subject had received the consideration of those philosophers; but, indeed, the researches of Morgagni show that experiments upon these vessels in the inferior animals had been long practised, even at a time anterior to the Christian era.

It appears, from the account of *Rufus of Ephesus*, that the result of compressing the arteries was known to the ancients previously to the time of Galen. He remarks, "Arterias per collum subeuntes carotidas, id est somniferas, antiquos nominasse, quoniam compressæ hominem sopore gravabant, vocemque adimebant;" but adds, that it was found out in his age that the effects were produced by the compression of the sensitive nerves which lie near the arteries, and not

from interference with the arteries themselves.

Galen says that, in experiments upon the carotid arteries, "the greater number, both of physicians and philosophers, included the nerves in their ligatures with the arteries; and that the effects, such as loss of voice, &c., which they incorrectly called sleep, were ascribed by them to the arteries. But *Galen*, denying that sleep is thus produced, denies also that any other function suffers injury from tying the arteries.

Avicenna remarked, that when these vessels are tied up, sense and motion are immediately lost. *Morgagni* adds, that *Carolus Stephanus* and *Baglivi* agreed with *Avicenna* in this opinion.

Valerudus observes, that "the carotid arteries being obstructed, or from any cause shut up, we immediately grow stupid, and fall asleep;" and states that he saw this experiment made by *Columbus* at *Pisa* in the year 1554, on a young man, in a large circle of gentlemen, equally to their terror and to the amusement of the operators, who persuaded them that it was done by the force of incantation.

Emettus tied the carotids and jugulars in a dog, which afterwards enjoyed the most perfect health and vivacity for some weeks; but, upon frequently repeating the experiment—though none of the dogs were seized with apoplexy, or died—it happened that for the space of two hours the animals seemed sleepy.

Valsalva tied both carotids in dogs three times, with variable results. In the first case the vivacity and vigour of the animal were impaired, but it retained full power of motion in all parts of the body. Afterwards, however, swelling of the lips, head, and anterior part of the body, with profuse discharge from the mouth, and great weakness of the whole body, supervened. The animal died on the sixth day. In the second there was the same drooping of the head and weakness of the muscles; the animal remained in this state, refusing food, for six days, when secondary hæmorrhage occurred. This dog recovered. The third animal was averse to food, and appeared almost rabid, barking at every one. It died in three days.

Drelincourt found that incomplete obstruction of the carotids of a mastiff produced lethargy, which passed off when the head was raised and one of the carotids opened.

Dionis found that the operation rendered the dog sleepy for a time, but that it recovered after some days*.

Lamur, on the contrary, found that tying both carotids in a dog produced no sopor.

frequent immunity of patients from such a consequence appears to have led to the belief that cerebral lesions never result from this operation—a mistaken and unsafe inference which cannot be too strenuously disallowed.

* Morgagni's Letters, Ep. xix. art. 21-31, where the opinions of the earlier writers upon this subject are given at great length.

Van Sweiten tied both the carotids of a dog, but could not perceive that the animal suffered any injury from the operation: it was quite brisk and sprightly eight days afterwards.

Bichat's experiments upon this subject led to no uniform results. Sometimes the animal appeared stupified; at others, presented no change in its faculties. "In general," he says, "the obliteration of the carotids is not suddenly fatal." Two of the animals, however, upon which he operated only survived two hours*.

Dr. Kellie tried this experiment repeatedly, and found that, although the animals were kept alive for several days afterwards, they appeared to suffer no inconvenience whatever.

Mr. James Spence made some experiments upon the lower animals, which led him to decide that two of the principal arteries of the neck may be tied with impunity.

In 1831, *Professor Mayer*, of Bonn, published† the results of a series of experiments upon animals, which he had undertaken with the hope of setting this question at rest. "To determine the effects of ligature of the arterial trunks proceeding to the brain, Professor Mayer applied a ligature to one or both of the carotid arteries in eighteen different cases in rabbits, dogs, pigeons, in a horse, a goat, and a marmot; and with very different effects, according as the circulation of one or both vessels was interrupted. Though, where one carotid was tied, there appeared slight insensibility, and even loss of power, these symptoms were temporary; and, after two or three hours, the animal presented no remarkable change. It was different, however, with the ligature of both carotids; most of the animals so treated died‡." Both common carotids were tied in 9 rabbits and 2 dogs; in 1 of these no remarkable effect was produced: in 3 very severe symptoms ensued, but the animals ultimately recovered; in 3 the operation was fatal. Among the symptoms stated to have been produced are the following: diminished cardiac and pulmonary action, sinking of the temperature, lethargy, stertor, wavering of the head, lolling of the head on one side, tremor, decussating palsy and insensibility

of the eye and ear, giddiness, inability to stand, convulsions, trismus, tetanus, chorea, strabismus. In the 4 other cases the operation produced similar results; but these experiments were exceptionable, as in 3 the brain is stated to have been injured, and in 2 out of the four the par vagum was enclosed in the ligature. The effects produced by the operation in a goat were similar to those observed in the rabbits, death taking place in four days. In the pigeon, ligature of both carotids was followed by weakness of the eyes, giddiness, shaking of the head, inability to maintain the erect posture, great diminution in the number of respirations, sinking of temperature, death, with convulsions, in four days. Both carotids were secured in the marmot while the animal was asleep; it did not wake. The temperature of the body rose, sleep continued, the contraction of the body became more rigid, death took place on the third day, with great tetanic rigidity. The same operation performed upon a horse was followed by palsy, madness, and death, with convulsions, in 58 minutes.

All physiologists are well acquainted with *Sir A. Cooper's* experiments (published in the *Guy's Hospital Reports* in 1836) in tying the vessels and nerves of the neck in dogs and rabbits. That gentleman mentions but two instances in which he secured both carotids only (in rabbits); in one of the animals the respiration was merely quickened for a few minutes; and in the other the heart's action was increased. The fact that in dogs and rabbits the carotid arteries are merely of secondary importance, being chiefly employed in supplying the external parts of the head, and conveying a comparatively small amount of blood to the brain, evidently led *Sir A. Cooper* latterly to attach far less weight than some of his commentators have assumed to the success of experiments upon the arteries in these animals as a test of the safety of the operation in the human subject.

M. Jobert de Lamballe, finding a great discrepancy of opinion in works with regard to the effects of tying the carotid arteries, instituted several experiments upon animals. The result of these was, that the tying of the carotids was followed, not by the production of cerebral mischief, but by indications of a true pulmonary apoplexy; and moreover, that this operation might be performed with impunity upon the dog, sheep, rabbit, and calf; and was fatal in the horse. In this animal the vertebral arteries, which are large on entering the osseous canal, become almost filiform before they penetrate the cavity of the cranium*.

It will be perceived how extremely conclusive
* *Mémoires de l'Académie Royale de Médecine, and Med. Chir. Review.*

* *Recherches sur la Vie et la Mort*, p. 160, 2d Part.

† *Acta Academiae Cæs. Leopold Carol. Nat. Car.* vol. vi. p. 2: communicated on the 26th January 1831.

‡ Review of Professor Mayer's work, in the *Edinburgh Med. and Surg. Journal*, Vol. xliii. p. 487, 1833. It will be seen that I have been indebted to that article for several interesting extracts. It contains a large amount of information upon this subject, tending to develop the fact that "ligature of a single carotid artery may occasionally derange much the circulation of the cerebral vessels." p. 484.

flicting the above results of experiment are, and how impossible it would be to form an absolute decision with regard either to the safety or the danger of the operation from the data which they afford. The experiments and authorities of Galen, Van Sweiten, Lamure, Kellie, Spence, Jobert, and Sir Astley Cooper, certainly tend to the conclusion, that obstruction of these arteries in the lower animals produces little or no ill effect upon the brain;—those of Avicenna, Valverdu, Drelincourt, Dionis, and Mayer, show, apparently with equal precision, that this operation is liable to produce sopor, or cerebral symptoms of an extremely dangerous character: while the results adduced by Emettus, Valsalva, and Bichat, are of a contradictory and uncertain nature. A great many other experimenters and writers (among whom may be mentioned John Bell, Dr. Parry, Dr. Bird, Mr. S. Cooper, and Mr. James Miller) have discussed this subject, but without arriving at a satisfactory conclusion upon the main question in the dispute; indeed, it has generally happened that the appearance of a set of observations by a writer who has perfectly convinced himself of the correctness of one of the views, has at once been the signal for the advance of another author, equally earnest in declaring that the whole of his observations have led him to embrace the opposite conclusion. The fault here appears to have been in forming a decided opinion, either *pro* or *con*, upon experiments which will, in all probability, always continue to be uncertain and variable in their results. I think, however, that the details of the experiments quoted above, and a general review of the subject, render the following conclusions perfectly admissible.

That in dogs, rabbits, and various others of the lower animals, the operation of tying both the carotid arteries has been found uncertain in its results; in some instances producing slight, severe, or fatal cerebral symptoms, and in others appearing to occasion no injurious effects upon the brain.

That this diversity of results might be considered to be attributable to the different modes in which the operations were performed, the fatal consequences depending upon some error in the manner of securing the vessels, did it not appear that the worst results have occurred in the experiments of very cautious anatomists, who were not likely to perform the operation in a slovenly manner; and were it not also observed that a similar difference occurs in the results of the operation upon the human subject, where, of course, every precaution is employed.

Although it may be decided that, in some of the above experiments, the symptoms of cerebral oppression and thoracic disorder

were, probably, owing to injury done to the internal jugular veins and pneumogastric nerves, it may be concluded that, in a large proportion of the cases, the head and chest symptoms resulted, as the experimenters believed, solely from obstruction of the carotid circulation. Indeed, this is rendered almost a matter of certainty by the fact established in Sir A. Cooper's experiments, that, upon tying the vertebral arteries of animals, the effects produced upon the brain and respiratory organs are precisely similar in general character to those occasioned in some of the instances where the carotids are secured*;—sufficient evidence to prove that these symptoms may occur from diminished supply of blood to the brain quite independently of interference with the par-vagus and jugular vein.

It is, therefore, most probable that the difference in the results of this experiment in the lower mammalia have depended rather upon peculiarities in the physical condition of the animals themselves, than upon the particular manner in which the operation has been performed.

That, whatever the result of the operation upon the human subject may be, the success of tying both carotid arteries in many of the lower animals affords no authority for the performance of that operation in man, as some surgeons have conceived that it does. This is evident from the fact already mentioned—that, in those animals, the carotids have far less share in the arterial supply of the brain than they have in the human subject.

But that, on the contrary, the fact of this operation occasionally producing the most serious results in animals, in whom these vessels are of but secondary importance, is to be received as an evidence that, in man, the occlusion of both carotids must be attended with considerable peril.

Effects of obliteration of both primitive carotid arteries in the human subject.

I find five cases upon record in which, either by surgical operation or in consequence of disease, both of the primitive carotid trunks became obliterated at different periods, and the individuals survived without suffering in any very remarkable degree from cerebral disorder. A brief sketch of the leading features of these cases will not be out of place.

(1.) Dr. R. O. Mussey tied both primitive carotid arteries, at an interval of twelve days, in a man twenty years of age. These operations were performed for the cure of a vascular tumor of the scalp which had existed since infancy; they, however, failed, and the tumor was removed by incision; it is men-

* Guy's Hospital Reports, vol. i. p. 463.

tioned that the left temporal artery and vein appeared to be $\frac{5}{8}$ of an inch in diameter; more than twenty arteries, none of which seemed to be less than a middle-sized goose-quill, were observed running into the tumor. The patient recovered from the operations without any bad symptoms; the functions of the brain were not interfered with.

Eight years after his first report of this case, Dr. Mussey writes, that ever since his patient's recovery "he has enjoyed very good health; occasionally he has had symptoms of cerebral plethora, indicated by pain, or a sense of fullness in the head, and a congestion of the vessels of the conjunctiva, from which important relief or a speedy cure has been gaffed by a single bleeding." During the whole time he has acted as a hired labourer in the author's family.*

(2 and 3.) In the sixth volume of the Calcutta Transactions, Mr. J. R. Preston, of the East India Company's service, relates that he applied first a ligature to the right common carotid artery; and then, about five weeks afterwards, one to the left;—in a case of cephalæa and partial palsy; and further states, that he performed the same two-fold ligature at an interval of eleven weeks, in a case of epilepsy and hemiplegia, yet without rendering the patient worse in either. Nay, Mr. Preston maintains that, but for this operation, his patients must have been either worse, or probably have been cut off by their respective diseases.†

* Amer. Jour. of Med. Sciences, vol. v. p. 316, Feb. 1830, and Id. for Dec. 1837.

† Trans. of Med. and Phys. Society of Calcutta, vol. vi. p. 409, and Edinburgh Med. and Sur. Journal, xliii. p. 483.

Extraordinary as the practice adopted by Mr. Preston in the above cases may appear to be, the plan upon which he seems to have acted has been not unfrequently pursued by others. Dr. Caleb Parry practised compression of the carotid arteries in mania, headache, vertigo, convulsions, and hysterical complaints, (Duncan's Medical Commentaries, vol. xiii. p. 423); and in 1812, Dr. Chisholm detailed at the Royal Society, a case in which he considered that he had relieved a nervous and mental disorder by this means, (New Med. and Phys. Journal, vol. iv. p. 348.) Dr. Bland employed compression of the carotids with success in two cases of coma from congestion of the brain in children. In the first of these cases twenty-five seconds was the longest period during which the pressure was maintained; in the second, thirty seconds. (Med. Chir. Quarterly Journal, vol. i. p. 498.) Dr. Dechang has recently succeeded in relieving several patients suffering from neuralgia by these means (Ann. de la Soc. de Med. d'Anvers's Mag. 1845). Compression of these vessels has been thought efficacious in some cases of epilepsy. In 1837, Dr. Allici stated that, acting upon the knowledge of this fact, he, in a case of hydrophobia, compressed these two arteries simultaneously, at the commencement of a convulsive paroxysm. In an instant the convulsions ceased, and the patient fell into a kind of fainting fit. Alarmed at this, the family refused to allow the doctor the methodical employment of this powerful treatment, (Clinique des Hôpitaux des Enfants, and Med. Chir. Rev., vol. xx. p. 265). M. Strobelin has employed this

(4.) A child, four years and a half old, of scrofulous temperament, was operated upon by Professor Moller, of Copenhagen, who, on the 13th of September, 1831, tied one common carotid artery; and on the 28th of January, 1832, secured the other. The operation was successful*.

(5.) But perhaps the most interesting and important example upon record of obstruction of the vessels supplying the brain, is one related by Dr. Davy. The subject of this case was an officer of rank, about 55 years of age, who first began to suffer in health, after an attack considered to be rheumatic, in 1831. In September, 1835, he was taken suddenly ill, with a tendency to syncope and vertigo frequently recurring; but, after this, his general health grew better; he experienced vertigo seldom, and syncope never. It was now observed that he had no pulse at either wrist, or in the brachials. His disease was now clearly perceived to be aneurism of the arch of the aorta, with an obstructed state, it might be inferred, of the great vessels arising from it, for no pulse could be felt any where in the course of those vessels, either in the neck, temples, axillæ, or wrists. This gentleman expired suddenly, while travelling on the 11th of January, 1837. Upon examination of the body, the aorta was found ruptured, near its base, within the pericardium. The arch of the aorta was the seat of a large aneurism filled with coagulum. All the great vessels arising from the arch were completely closed up at their origins. The upper portion of the innominate was open; the right carotid and subclavian were also open, but rather diminished in size; the left carotid, subclavian, and vertebral arteries, as far as they were examined, namely, to the extent of two inches, were impervious, being plugged up with lymph. The intercostal arteries were observed to be large†.

In this extraordinary case, it will be observed that the individual survived for at least fifteen months, with a far greater degree of obstruction to the vessels supplying the brain than was produced in the animal in which Sir Astley Cooper secured the two vertebral and the two carotid arteries—the experimenter probably conceiving that

plan in cases of hysteric convulsion, and states that he has almost always succeeded in modifying the form of the attack. He has also been equally successful in two cases of epilepsy (Brithwaite's Retrospect, from Archives Gen. de Med. March, 1841). Of whatever value these parts may be in a therapeutic point of view, they are physiologically important, in proving that (1.) obstruction of these vessels has a powerful effect upon the brain, and (2.) that in compressing the arteries, there is not produced sufficient impediment in the internal jugular veins to occasion dangerous cerebral congestion.

* Forlep's Notizen, vol. xxxvi.

† Recherches Pathological and Anatomical vol. i. p. 426.

this was the greatest amount of obstruction in which nature could be expected to restore the circulation by collateral channels. But, in this case, it is evident that nearly the whole supply of blood to the upper extremities and the head must have been conveyed by the slender vessels anastomosing with the intercostal branches, and by the epigastric and internal mammary arteries.

Dr. Davy relates another somewhat similar case*, but the details are unfortunately imperfect. A soldier, ætat. 36, suffered from paroxysms of dyspnœa, during which he experienced temporary loss of vision, and also occasionally from syncope. There was no pulsation in the left carotid, and very little in the right. Upon examination of the body post-mortem, the aorta was found dilated and diseased; the left carotid and subclavian arteries were completely obstructed by dense white matter, probably altered fibrine, but the state of the innominate and right subclavian was not noticed.

Dr. Ballei has related a case in which one of the carotid arteries had become entirely obstructed, the other being considerably lessened in size, without producing any apparent ill effects.†

I find only one unexceptionable case in which interruption of the circulation through both carotid arteries produced fatal cerebral symptoms.‡

Mr. Key tied the right carotid artery in a woman, æt. 61, suffering from aneurism of the arteria innominata. In about an hour and a half after the operation, she appeared asleep, the breathing being natural, only that it was attended by a kind of snore, which was habitual to her; but this gradually became fainter. In about two hours she was found to be expiring, and in a few seconds died—four hours after the operation. It was found, upon examination, that the left carotid opened from the arch of the aorta by an orifice scarcely large enough to admit a small probe; it was scarcely one-tenth of its natural size, a membrane appearing to have formed across it. The vertebrals were rather small than otherwise. The brain was healthy, its vessels sound, and containing the ordinary quantity of blood; there was a little serous effusion between the membranes.§

* Ibid, p. 433.

† Trans. of a Society for the Encouragement of Medical and Chirurgical Knowledge.

‡ MED. GAZETTE, vol. vi. p. 703.

§ It is to be regretted that, in the account of the following case, (as quoted in the Gazette Médicale), the cause of death is not mentioned; it was probably the same as in the last case, but this cannot be at all confidently assumed. M. Rossi applied ligatures simultaneously to the subclavian and right primitive carotid arteries, for aneurism of the innominate. The patient lived six days after the operation.

It was found that the left carotid and right

In the following case the operations were succeeded by cerebral symptoms.

Professor Kuhl, of Leipsic, tied the *left* common carotid artery in a robust man, ætat. 53, for the cure of a very extensive aneurismal disease of the scalp, the result of a severe blow on the occiput received twenty-five years previously; the disease appearing to proceed from the left occipital artery and its ramifications. The patient was seized with convulsions and faintings during the operation, and was removed to his bed in a state of insensibility. Towards evening, he complained of repeated throbbings of greater or less violence in the artery which had been tied. Profuse hæmorrhage from the tumor rendered it necessary to secure the *right* common carotid on the forty-first day. During this operation (which had the immediate effect of stopping the hæmorrhage) the patient was affected with slight convulsions. Immediately afterwards, his face became pale and his tongue cold; none of the functions of the senses were at all impaired. During the night the patient enjoyed tranquil sleep, which was only once or twice interrupted by a convulsive movement of the right arm. On the following day, many of the symptoms were relieved, but he complained of a distressing spasmodic motion in his right arm; and at the same time of a heaviness in his head, and a difficulty in swallowing. With the exception of pain and heaviness in the head, and indistinctness of vision, the patient did not suffer any further from cerebral symptoms. His recovery was long delayed by hæmorrhages and suppuration; but, at the end of the fifteenth week after the second operation, he was reported as perfectly restored to health and strength.*

It will be observed that, in Dr. Mussey's case, the extraordinary varicose state of the arteries of the scalp had existed from infancy, and, it is probable, that in this man the collateral supply to the brain had become unusually large, the carotids being chiefly employed in supplying the tumor; thus placing the individual's carotid circulation nearly in the physiological condition of that of one of the lower animals, alluded to above. This case, therefore, if standing alone, could not have much weight in support of the operation of tying both carotid arteries. Professor Moller's operation was performed upon a very young subject, where the power

vertebral arteries were obliterated; so that, for six days the brain was supplied only by the vertebral on the left side. (Gazette Médicale de Paris, Jan. 27th, 1844. From *Bulletino delle Scienze Med.*)

In this case, however, the impervious state of the vertebral artery, in addition to the obliteration of the carotids, rendered cerebral lesion almost inevitable.

* Translated in the MEDICAL GAZETTE, vol. xvi. p. 816.

of nature in adapting the collateral circulation to its increased duties was probably greater than it generally would be in the adult: the interval, too, between the two operations, was long, more than four months. It is probable that, in Dr. Davy's cases, the obliteration of the vessels occurred very gradually. Still, in both of these instances, cerebral symptoms were present, although not in an extreme degree; in Professor Kuhl's patient, these symptoms were of a far more dangerous character. It is to be regretted that the ultimate issue of Mr. Preston's cases has not been recorded. Upon the whole, I cannot think that when all of the above cases, successful and unsuccessful, are considered together, they at all establish the safety of tying both carotid arteries, even when a considerable interval is allowed to elapse between the two operations. Still they, of course, do prove that individuals may survive the obliteration of both vessels.

Altogether, it would probably be well to consider this operation as a measure of extreme danger, the result of which is merely not absolutely hopeless, and to decide that it is one which should never be had recourse to except in cases of the most imminent peril.

I have already shown that we are justified in denying the correctness of the conclusion, that, in the human subject, the carotids may be safely tied one after the other, if a sufficient interval be allowed between each operation, so long as that conclusion is derived solely from experiments upon the lower animals; such a deduction can only be correctly drawn from observing the results of this operation in man.

That the application of ligatures to both common carotids simultaneously is not of necessity *instantly* fatal, is proved by the following cases:—

In a patient suffering from a bronchocele, supposed by Professor Langenbeck to be of a rare variety which he terms "aneurismatic bronchocele," hæmorrhage occurred so profusely that the Professor found it necessary to apply ligatures to the common carotid on both sides. The patient died on the following day. On examination of the body, the right hemisphere of the brain was found resting on a bed of exuded matter; the vessels were not unusually full on this side, but they were so on the left side, where no exudation existed. The internal surface of the carotid was found inflamed from its origin all the way to the brain*.

With a view to arrest the growth of a large tumor occupying the situation of the parotid gland, Professor Mott tied both carotid ar-

teries nearly simultaneously. The patient survived about twenty-four hours.

At present, we have not any grounds for believing that a human being can recover from the effects of *sudden* obliteration of both carotid arteries; and, as we have already seen, the results of this operation upon the lower animals cannot be received as favouring the probability of such survival*.

Effects upon the cerebral circulation of obliteration of one common carotid artery, in the human subject.

It is true that the larger proportion of the individuals in whom one of these arteries becomes occluded, whether by surgical operation, or in consequence of disease, recover without appearing to suffer from any very serious derangement of the cerebral functions; and this fact has justified surgeons in securing the artery whenever the danger of fatal mischief appears to call for such an operation; but, on the other hand, it is to be observed, that a certain, and by no means inconsiderable number of those in whom the circulation through one of these arteries is permanently interrupted, perish from disease of the brain, which disease is evidently the direct result of the alteration thus produced in the cerebral circulation.

I find *fourteen* instances in which obliteration of one of the carotid arteries was distinctly followed by great interference with the circulation through the brain; which in *eleven* of the cases produced fatal results. These cases, taken together, have so important a bearing upon practice, that I shall not hesitate to give a brief account of the particulars of each.

(1.) The first case which I shall detail occurred within my own observation, rather more than a twelvemonth since. A strong-looking, middle-aged man, a stone-mason, was suddenly seized with hemiplegia of the *right* side; about six weeks previously to his death. He sank gradually, and died with typhoid symptoms. Upon examination of the brain, there was found ramollissement, with considerable starry injection, of the cortical substance of nearly the whole *left* centrum ovale and corpus striatum. There were no traces of apoplectic effusion. The arteries of the brain, especially on the side occupied by the softening, were much dilated, and considerably diseased.† The heart was

* "Although," says Mr. Crosse, "some animals will bear a ligature to both carotids simultaneously, the human frame cannot sustain so great and so sudden an interruption to the supply of blood to the sensorium."

Mr. Crosse met with a case shewing the fatal tendency of a ligature if applied to both of these arteries simultaneously. (Trans. of the Prov. Med. and Sur. Association, vol. v. p. 66-7.)

† Similar dilatation of the arteries of the circle of Willis, on the diseased side, was observed in a man who died from apoplexy of the *left* hemis-

* London Medical and Surgical Journal, August, 1828, p. 178, from Neue Biblioth. für die Chirurg. u. Ophth.

large and flabby, and its cavities were somewhat dilated. The whole arch of the aorta was immensely dilated. The orifice of the *left* carotid artery was nearly obliterated from great and equal tumefaction of its inner coats. A probe could, with difficulty, be passed from the artery above into the aorta; but, as the instrument carried a portion of old adherent fibrinous clot before it, it was evident that the vessel had become perfectly impervious to blood. The primitive trunk, up to the point of its division, was completely filled with adherent friable coagulum of long standing.

(2.) Dr. Todd has given the particulars of the case of a gentleman, *ætat.* 37, who was suddenly attacked with syncope, followed by symptoms of a severe internal thoracic lesion. Seventy-two hours after the commencement of the attack, Dr. Todd found the patient lying on his back, heavy and drowsy, and occasionally snoring slightly, with all the aspect of a man labouring under the effects of an oppressed or sluggish state of the brain; his mental faculties were also sluggish; the pupils were inactive, the *right* perceptibly larger than the *left*. There was paralysis of the *left* side of the face, and of the *left* upper and lower extremity, but there was an involuntary twitching of the arm and shoulder, like subsultus tendinum; the sensation of the palsied parts was not affected. The paralysis must have come on very shortly before this report was made, as it was not present a few hours previously. The paralysis became slightly diminished a short time before his death, which occurred suddenly on the eleventh day. Upon inspection, the *right* side of the brain was found decidedly paler in all its structures, than the *left*; the vessels of the circle of Willis were pale and empty, especially the *right* carotid and its branches; there were numerous patches of white softening in the centrum ovale and other portions of the cerebral substance on this side, the parts chiefly involved being especially those supplied by the middle cerebral artery. Death had ensued from the bursting of a dissecting aneurism of the ascending aorta into the pericardium. The *arteria innominata* and the *right* carotid artery had become completely obstructed by the blood from the aneurismal sac, which had insinuated itself between their coats.*

where; the *left* carotid having been tied twenty years previously, (*Guy's Hospital Reports*, vol. i. p. 53.) This state of the cerebral vessels of course results from the greater part of the supply of blood to the carotid on that side being conveyed by them; its existence, in such cases, is an evidence that the ordinary course of the circulation through the carotid has long been obstructed. It can scarcely fail to be followed, sooner or later, by apoplectic or other severe lesions in that part of the encephalon.

* *Medico-Chirurgical Transactions*, vol. xxvii. p. 301.

(3.) Dr. O. Fairfax relates a case in which hemiplegia of the *right* side occurred after tying the *left* common carotid artery. Dr. Fairfax considered that the paralysis probably took place at the moment of tying the ligature, but it was not remarked until an hour afterwards. The body was not examined*.

(4.) Professor Sedillot tied the common carotid artery to arrest hæmorrhage in a man wounded behind the *right* ramus of the lower jaw. Three hours afterwards the patient was found in a state of complete hemiplegia of the *left* side of the body and *right* side of the face. The intelligence of the patient was so far destroyed that he scarcely comprehended questions addressed to him. He died on the ninth day after the operation. The vessels were injected previous to opening the body. The arteries distributed to the *right*, middle, and anterior lobes of the brain, were much less injected than those on the *left* side. These same lobes were also appreciably softer than those on the *left* side, but had apparently undergone no other change. It is remarked, in the account of the case, that the hemiplegic symptoms had, apparently, resulted from that side of the brain having been deprived of its due supply of arterial blood†.

(5.) The first case in which Mr. Abernethy tied the common carotid artery, in the human subject, was that of a man who was gored in the neck by a cow, and had the *left* internal carotid artery wounded. The patient seemed to be doing well for a few hours; but, on the same night, he became unquiet, feverish, and delirious, and was several times affected with convulsions, which were more violent on the *left* side than on the *right*. Soon afterwards the *right* side of the body was observed to be motionless, while the *left* continued to be affected with convulsive tremors. His strength gradually declined, and he died about thirty hours from the time of the operation, after a severe convulsive fit. The pia mater was injected; there was serum between the pia mater and the arachnoid. The brain presented marks of inflammation; its vessels were full, but not turgid‡.

* *Dublin Journal*, vol. xxiv. p. 522.

† *Gazette Médicale*, Sept. 3d, 1842, and *Edinburgh Med. and Surg. Journal*, Vol. 59, p. 221.

‡ *Surgical Observations*, p. 193. London, 1804. Mr. S. Cooper has remarked that this case fell under his own notice, and the inference which he drew was, that "the man died more from the great quantity of blood which he lost, and the severe mischief done to the parts in the neck, than from any effect of the ligature of the artery on the brain." Such was certainly not the opinion of Mr. Abernethy:—the single fact of this man being attacked with hemiplegia of the side opposite to that upon which the carotid was tied, within a few hours of the operation, is, I apprehend, alone sufficient evidence to prove that the cerebral mischief was principally due to

(6.) A case is related by Mr. Girdwood, and quoted by Mr. Miller*, where the *right* carotid artery was tied in a woman *ætat.* 42, the subject of aneurism by anastomosis of the face. The operation was followed by a thrilling sensation in the tumor, with severe headache. On the second day after the operation, the patient got drunk with whiskey; this excess was followed by paralysis of the *left* side. Death took place eight days after the operation. The account of the autopsy is admitted not to be very precise, no notes of the appearances having been made at the time; it is, however, stated that there was extensive organic lesion, chiefly of old standing, in the brain. It is very possible that, in this case, there may have been disease of the brain of ancient date, although it is not mentioned that there had been observed, previously to the operation, any of those symptoms which would be expected to attend extensive lesion of that description; but it is perfectly evident that the changes in the brain which proved fatal were immediately determined by the operation, although promoted by the subsequent excess. The time at which the hemiplegia occurred, and the fact that the side of the brain principally affected corresponded with the vessel which was tied, render it fair to conclude that the closure of the artery and the paralysis bore to each other the relation of cause and effect.

(7.) In a case recorded in Rust's Journal†, the *right* common carotid artery was tied in a man, *ætat.* 49, suffering from medullary fungus of the palate. Two hours afterwards the patient began to complain of an unusual sensation in the whole of the right side of the head, attended with some difficulty in deglutition. Towards evening, this sensa-

interference with the carotid circulation, however much the other injuries received may have tended to hasten the catastrophe.

* London and Edinburgh Month. Journ. of Med. Science, Jan. 1st, 1842. p. 11.

† Professor Barovero, of the Hospital at Turin, tied the *right* carotid artery in a man, the subject of a tumor situated behind the angle of the jaw. The internal jugular vein was tied with the artery; the nerve was untouched. On the third day, the patient had some fever, with spectral delirium, and palsy of the *left* side of the mouth and the *left* hand. Fever, in an abated form, without delirium, continued to the tenth day, after which he began slowly to recover strength; but on the sixtieth day, symptoms of gastric fever occurred, speedily assuming a tertian form; in the course of a few days, loss of sensation and sopor; death on the sixty-ninth day. The brain and vessels were found in a state similar to that of chronic inflammation, and the outer part of the right hemisphere was covered by a fluid similar to a puriform exhalation. (Edinburgh Med. and Surg. Journal, Vol. 43, p. 483.) As the jugular vein was tied, in this instance, I have not numbered it with the other cases, and shall not take it into account when referring to them; still, it is too much to the purpose to be altogether omitted from this detail.

‡ Quoted in the *Lancet*, for July 28th, 1838.

tion disappeared, and was replaced by severe pain in the left side of the head. The dysphagia had increased; the face was red; the pulse equally frequent at both wrists, full, and hard. The symptoms continued without much alteration for a week, when, at the morning visit, the surgeon found the patient unable to move the *left* hand and foot. The paralysis continued without modification, and the man sank and died on the 26th day after the operation: the ligature had previously separated. On examining the body, the artery was found free from lesion, but several portions of the *right* hemisphere of the brain, including the centrum ovale, the ventricle, and corpus striatum, were excessively softened. The left hemisphere was free from lesion. The abdominal and thoracic viscera did not present anything worthy of notice.

(8.) Another similar case is reported in the same work. The *right* carotid artery was tied for aneurism of the innominate. Half an hour after the operation, the patient began to feel a sense of lightness in the head, which soon terminated in severe pain, extending across the forehead. Towards evening, the headache increased, the pulsations of the aneurismal tumor became more violent, and a tendency to vomiting manifested itself. During the night the patient continued to vomit, and complained of increased pain in the head. On the third day after the operation symptoms of paralysis appeared in the *left* side of the body, and the patient soon fell into a state resembling that produced by concussion of the brain. He died on the fifth day after the operation. After death, no lesion was discovered which could account for the existence of the paralysis. The viscera of the chest and abdomen presented nothing abnormal.

(9.) M. Magendie applied a ligature to the *left* common carotid of a woman, *æt.* 25, who was labouring under an enormous tumor in the site of the left maxillary sinus. No remarkable accident occurred until the sixth day after the operation, when she was attacked with loss of consciousness, which continued for some time; inclination of the head to the left; separation of the eyelids of the *right* eye, the pupil remaining contractile; very slow pulse, with paleness, and respiration sometimes stertorous, sometimes easy, with every mark of approaching dissolution. During the unavailing employment of stimulants and counter-irritants it was observed that the *right* arm was paralysed, and that, in the right leg, though it was not paralysed, the motions were deficient in energy and precision. Some difficulty of deglutition, also, which was observed, was found to depend on palsy of the pharynx, and the laryngeal voice was extinct, all her feelings being communi-

cated by signs. Two hours afterwards she was attacked with epileptic paroxysms, in which the head was convulsively thrown back, both arms forcibly contracted, frothy saliva, pupil excessively dilated, and the pulse became very rapid. After this she recovered consciousness, and, on the ninth and tenth days, deglutition became practicable. Some time afterwards the voice returned, and the right arm recovered its motions. Three months, however, elapsed before the shoulder and arm could move, very imperfectly. The intellect of the patient was enfeebled and much impaired, she seemed to be less conscious of her situation, and she was less apprehensive as to the future*. It is interesting to observe how nearly the symptoms of this patient corresponded with those produced in some of the animals upon which Meyer experimented.

(10.) The subject of the first case in which Sir A. Cooper tied the primitive carotid artery was a woman, 44 years of age, suffering from aneurism of that artery on the *right* side. The operation was performed on the 1st of November. On the 8th the *left* arm and leg became paralytic. Sir A. Cooper found them benumbed, and she moved them with great difficulty; her pulse was weak, and she laboured under considerable constitutional irritation. Sir Astley thought that the powers of these parts would be restored as her health improved. Her head was free from pain. 11th. The arm moved more freely, but not with so much ease as the other. 12th. The power of the arm almost recovered. The report makes no further mention of the state of the limbs. The patient died on the 21st day, not from cerebral disease, but from inflammation of the aneurismal sac and parts adjacent, causing fatal compression of the larynx and pharynx. Permission to open the head could not be obtained. As Sir Astley remarks that "the paralysis came on whilst she laboured under great constitutional irritation, lessened as it decreased, and returned when the irritation became greater," he probably did not attribute it to alteration in the condition of the cerebral circulation†.

(11.) Dr. Zeis, of Dresden, tied the *left* common carotid in a child, 18 months old, for a vascular nævus of the cheek. A few days after the wound was completely cicatrised (which it appears, from comparing dates, was about nine weeks after the operation) the child was suddenly attacked with convulsions, and hemiplegia of the *right* side. These symptoms were followed by increasing debility, emaciation, exhausting perspirations, and death, which took place sixteen weeks after the operation. For

several days before death, she laboured under some spasms, alternately of the flexor and extensor muscles of the right extremities. The nævus had completely disappeared. The body was not examined*.

(12.) Mr. A. Macaulay tied the *left* common carotid artery, for the cure of an aneurism, the consequence of a wound, in a gunner, 36 years of age. The operation was shortly followed by headache. On the third day the patient suffered from great drowsiness, and on the fourth the *right* side of the body was much more feeble than the left; there was also much languor and drowsiness. These symptoms continued for some days, but gradually disappeared, and the man was enabled to return to his duty in about two months†.

(13.) A man in whom Mr. Vincent tied the *right* carotid for aneurism, was attacked with complete hemiplegia of the *left* side in half an hour after the operation, and continued in that state till his death on the seventh day. In commenting upon this and Sir A. Cooper's and Magendie's cases, Dr. Todd observes, "It is remarkable that, in all these cases, the paralysis was situated on the side opposite to that on which the artery was tied; a fact which alone would indicate that the cause of the paralysis was seated in the brain."‡

(14.) In a case operated on by Langenbeck, immediately after the application of the ligature the patient became motionless, with closed eyes, without speaking, except when addressed several times in succession; he sank gradually, and died in thirty-four hours after the operation.§

In the course of the present inquiry, I have perused nearly all the recorded cases in which the carotid artery has been tied, and find that, in very many of the patients who did not die of brain disease, cerebral symptoms of a very decided kind occurred, such as drowsiness, giddiness, dizziness, delirium, paralysis of the corresponding side of the face, severe pain in the head, alarming faintness, vertigo, (not attributable to loss of blood,) &c. Indeed, in most of the cases, some one or more of these symptoms has presented itself.

It will be noticed that the period at which the severe cerebral symptoms followed the obliteration of the artery varied in the cases narrated above. In one of the instances it was doubtful how long the artery had been obstructed when the brain began to suffer;

* Zeitschrift für die gesammte Medicin, iij. Brand; 1 Heft.; and Brit. and For. Med. Rev. Vol. 6, p. 234.

† Edinburgh Med. and Sur. Journal, Vol. 10, p. 179.

‡ Cyclopædia of Anatomy and Physiology, art. Carotid Artery.

§ Quoted in Cyclopædia of Anat. and Phys. from Arch. Gén. de Méd. t. 19, p. 118.

* Quoted in Edinburgh Med. and Surg. Journ. Vol. 43, p. 484.

† Medico-Chirurgical Trans. Vol. i. p. 1.

but, in twelve others, paralysis of the side opposite to that of the obstructed artery, or other symptoms of cerebral lesion, supervened within eight days. In the remaining case the signs of brain disease appeared much later.

It is quite apparent that in some of the above cases symptoms of head affection came on very rapidly, evidently from the earlier effects of the interference produced by the operation in the cerebral circulation; and that, in the others, they resulted from disease of the brain, gradually developed in consequence of the altered condition of the arterial supply.

It is impossible to decide what particular state of the cerebral vessels predisposes the brain to become diseased in consequence of obliteration of the carotid; but it appears that, although in most of the instances of this kind the fatal mischief has been consequent upon deficient arterial supply to the hemisphere, in some of the other cases it has probably arisen from increased pressure of blood upon the arteries of the affected hemisphere, in consequence of the supply to the carotid being diverted through the vessels of the circle of Willis.

In the above cases, the ill effect upon the brain, of obliteration of the carotid artery, does not appear to have been generally attributable to the age of the individuals who suffered, or to any evident fault in their constitutions; the ages of the patients, as far as they can be ascertained, varied from 15 months to 49 years. Some of the cases were traumatic; in others the vessel accidentally underwent spontaneous obliteration; in one it was tied for the cure of congenital deformity; in the remaining instances the operation was had recourse to for the removal of various forms of local disease. In none of these patients does there appear to have been present any indication by which it could be judged that they would be more liable than others to cerebral disease in consequence of carotid obstruction. The fact that such a result is determined in some cases and not in others appears to be altogether inexplicable; thus, in one instance, (Dr. Day's first case) we observe that an individual advanced in life, with an impaired constitution, and the subject of general arterial disease, survived for at least fifteen months after the origins of all the large vessels supplying the head had become perfectly occluded; while, on the other hand, we find that in several much younger persons, some of whom apparently had fair constitutions, fatal cerebral lesions resulted, in less than a week, in consequence of obliteration of one of the carotids.

I would, in conclusion, submit the following deductions, which are derived partly from the above facts, and partly from an

analysis of most of the recorded instances, in which one of the carotid arteries became obstructed, whether by operation or disease:—

That by far the larger proportion of those in whom the primitive carotid artery, on one side, is obliterated, recover*.

But that a considerable number of the individuals, so circumstanced, become hemiplegic, and perish from disease of that hemisphere of the brain which corresponds to the obstructed artery.

The conclusion that obliteration of one carotid artery is never liable to be followed by impairment of the cerebral functions, must therefore be discarded.

That the larger proportion of deaths, after ligation of the carotid, occur from affections of the respiratory organs†.

That nearly the whole of the patients upon whom the operation of tying the common carotid artery is performed, suffer, more or less, from symptoms of irritation of the respiratory organs, arising either from compression of the trachea and nerves of the neck (this has frequently occurred from alteration in the condition of the sac, in cases of carotid aneurism, where the artery has been tied either above or below the enlargement), from irritation of the pneumogastric nerve, or from cerebral disease.

That in the majority of those who die with brain symptoms, consecutive upon obliteration of the carotid, it is evident that the cerebral lesions discovered post-mortem depend upon the arterial obstruction, and that there are no grounds for assuming that the fatal result is occasioned either (1) by an obstructed state of the internal jugular vein‡, or (2) by inflammation conveyed backwards along the pneumogastric nerve to the brain, for the following reasons:—

(1.) The form of disease, found in the brain after death, in several (four) of the cases related above was of a kind which is generally considered to depend upon local anæmia, not upon congestion.

In some of these instances, signs of deficient supply of blood in the side of the brain

* Mr. Thomas Inman found that, in 40 cases where the carotid artery was tied, there were 11 deaths.—*Lancet*, Oct. 5th, 1843.

† I have thought it unnecessary to enter at much length upon this part of the subject, although it is of great importance, because it has been amply discussed by Mr. James Miller, in the *Edinburgh Monthly Journal of Med. Science*, for January 1842. I was sorry to find that the author of that interesting memoir endeavours to prove that cerebral disease is not liable to result from obliteration of the carotid.

‡ It will be observed that I have not included Professor Barovero's case, in which the vein is admitted to have been tied with the artery, among those in which cerebral disease is to be considered to have resulted from tying the carotid. It is merely given incidentally by way of illustration.

to which the obstructed artery passed were strikingly apparent.

The parts of the cerebral substance which were principally involved in disease were those supplied by the chief branches of the obstructed vessel.

Obliteration of the internal jugular vein was not observed.

(2.) There were not remarked any morbid appearances to indicate that inflammation had been conveyed backwards along the nerve to the brain.

The part from which the par vagum arises is not shown to have been involved in the disease.

That cerebral disease may be established in these cases quite independently of implication of either the vein or the nerve, is further proved by the facts that the paralysis has been known to occur almost immediately after the artery has become obstructed, before inflammation could possibly be established in the surrounding parts: and that organic lesions of the brain present themselves in cases where the vessel has become gradually obliterated by processes which are confined to its interior, and do not at all involve adjacent structures.

That, although persons in whom the carotid is tied may suffer from slight cerebral symptoms, and yet perfectly recover, those who become completely hemiplegic have barely a chance of surviving*.

It would be interesting to ascertain the ultimate results upon the brain of ligature of the carotid artery in those who recover from the immediate effects of the operation. There are not, at present, sufficient data to lead to any definite conclusions upon this point. The subject of the second case in which Sir A. Cooper tied the carotid artery died, twenty years afterwards, of apoplexy from rupture of a large branch of the middle cerebral artery on the side where the vessel had been secured.† But remote consequences of this kind can, of course, have no influence upon practice.

The facts adduced in this paper, it is submitted, prove that the danger of cerebral disorganisation should have its weight in the consideration of cases where it is proposed to secure the common carotid artery; not, indeed, as rendering at all doubtful the pro-

priety of the operation in the majority of the cases in which it is at present had recourse to, but as strongly discountenancing it in nearly all instances where the disease for which it is employed does not positively threaten the patient's existence, and in every case where other means of treatment can be employed.

It is probable that, in some of the cases where it is thought necessary to secure the primitive carotid artery previously to removing tumors of the neck and head, it would be far better that the surgeon should make up his mind to contend with an active hæmorrhage, than that he should submit his patient to the chance of fatal hemiplegia, even although he believed that chance to be a remote one.

These facts may also suggest to the surgeon the propriety of warning the patient's friends (before proceeding to tie one of these arteries) of the possibility that the operation which he proposes may be followed by palsy of a dangerous character.

Upper Stamford Street,
August 1845.

SINGULAR PROPERTY OF CAMPHOR.

THE specific gravity of camphor is usually given at from 0.985 to 0.996, and it therefore floats on water. In all chemical works this substance is said to be lighter than water. According to Dr. Gregory, Dr. Christison has a fine specimen of Borneo camphor (*Dryobalanops Camphora*), consisting of small fragments, which are heavier than water. The common camphor, which is obtained from Japan (*Laurus Camphora*), varies much in specific gravity, according to temperature—a fact which does not seem to have been hitherto noticed. Small pieces, which have been for some time digesting in water, float readily at a temperature of 60°; but when the water is cooled to near the freezing point, they sink. The following are the results of some experiments on the subject. At from 32° to 33°, the pieces of camphor readily sank in water, and remained at the bottom of the vessel. At 45° the pieces were in a mean condition, having an equal tendency to rise or fall. At 54°, they entirely floated. It is difficult to give an explanation of these facts, unless we suppose that the substance contracts and expands in a much greater ratio than water, by a few degrees difference of temperature, for it floats when the water has the least density, and sinks when it has the greatest.

Thus it sinks at from 32° to 33°, the density of water being	1.000
Mean condition 45°	.9998
Floats at 54°	.9992

These changes in the density of water are taken from a table given by Muncke in his *Handbuch der Naturlehre*.

* Mr. Macaulay's patient (12) does not appear to have been quite hemiplegic. Sir A. Cooper's patient (10) died from another cause, possibly before the cerebral derangement which caused the paralysis had terminated in confirmed structural disease, or there may have been ramollissement of the brain at the time of her death. In Magendie's case (9) the progress of recovery is only traced to the time at which very imperfect power had returned to the paralysed limbs, and the report terminates at a period when there was still great reason to believe that the patient would fall a victim to cerebral disease.

† Guy's Hospital Reports, Vol. i. p. 53; and Med. Chir. Transactions, Vol. i. p. 222.

PRACTICAL OBSERVATIONS
ON THE
VARIOUS FORMS OF DYSPEPSIA.

By ROBERT DICK, M.D.

Author of a Treatise on the "Derangements, Primary and Reflex, of the Organs of Digestion, with an Addition," "Treatise on Diet," &c.

[Continued from p. 1027.]

DIGESTION *continued*. DERANGEMENTS
OF PRIMARY AND SECONDARY ASSI-
MILATION.*

THE chyme being now joined by the bile and pancreatic juice, is converted into chyle. I say *joined* by the bile and pancreatic juice; for in the duodenum, fixed down as it is, no tossing about of alimentary matters can take place, as happens in the stomach. And perhaps this fact furnishes an indirect ground of presumption, that the union of the bile with the chyme is one of ready affinity. Still, of the changes effected by the commixture of the fluids we are nearly wholly ignorant, or rather we are ignorant of the *mode* in which those changes are effected. From Tiedemann and Gmelin's researches, it would seem that the following constituents of the bile, picro-mel, osmazome, gliadin, and cholic acid, do not appear in the evacuations. These matters, then, most probably form some union with the chyme, assist in its conversion into chyle, and, as component parts of chyle, are reabsorbed. In short, they and the chyme are converted into albumen.

Chyle is of a whitish colour, is alkaline in its reaction, is said to smell like semen; separates, soon after removal from its vessels, into coagulum and serum, the former of which consists of chyle-fibrin and chyle-globules; the latter of a serum composed of a solution of albumen, in which chyle-globules float. A cream-like stratum of fat collects on the top. The chyle-globules, according to Dumas, have a diameter 1-7199th part of an inch. As the fluid ascends the thoracic duct, it assumes more and more of a reddish hue, until it nearly acquires that of arterial blood; but the globules are said to disappear. Here, in short, commences the second, or we might say

the third, stage of primary assimilation. The first stage, as we have seen, was a *reducent* one, and consisted in the formation of a constitutional hydrate of the aliment. The second stage consisted of the union of the chyme with the bile and pancreatic fluid. The third stage of primary assimilation occurs during the progress of the chyle up the thoracic duct. The chyle becomes momentarily, in this progress, more highly animalized, more nearly approximated to the blood, into which exposure to oxygen in the lungs (which presently takes place) probably immediately converts it.

To sum up this part of our subject, the digesting powers of the stomach essentially consist in—1. the conversion of saccharine matters into albuminous and oleaginous; 2. the conversion of albuminous principles into oleaginous; 3. the conversion of oleaginous into albuminous. Consequently the conversion of saccharine matter is the most fundamental and vital of all, and that which of necessity must last fail.

The principal part of our aliment consists of the azotized substance or principle, protein, in its various modifications of fibrin, albumen, and casein, which, however, are all reduced to, and enter the lacteals as, soluble albumen. This is the species of food which Liebig names *alimentary*, in contradistinction to the non-azotized substances, sugar, starch, gum, fat, which he calls *respiratory*. Perhaps we might with equal propriety name the latter *calorific* food, a principal use of it being to maintain animal temperature.*

The whole process of secondary assimilation, or that by which the waste of tissues is replaced or prevented, is at present a complete mystery, and in all probability will ever remain so. The ultimate act or acts of nutrition can never be made a subject of thorough microscopic observation; and even granting, which is most improbable, that the atomical movements of this process should ever be detected by the microscope, until we know and *discover* the hitherto *totally*

* In our last paper, for 'albuminuria,' p. 1025, col. 2, l. 16, read 'albumen'; for 'chloride of iodine,' p. 1026, col. 1, l. 5, read 'chloride of sodium.' Delete 'feebly alkaline,' p. 1026, col. 2, l. 18 and 19. For 'chloric acid,' read 'hydrochloric acid' throughout.

* Besides the oxygenation of carbon, Dr. Prout points out another very important source of animal heat. "The *solidification* of the fluid albuminous principles of the blood into gelatinous, albuminous, and fibrinous tissues, in the extreme capillary vessels, is probably one immediate source of animal heat." (Note, p. 482 of last edition, 1843, of *Stomach and Renal Diseases*.)

unknown law or agency by which those atomical movements are regulated (mere consequences, mere indications, after all, of a subjacent unseen, unknown principle)—until, I say, we could do what I have stated, our very furthest advances in microscopic discovery would be absolutely nothing, compared to the gulph which would even then be found still to separate the visible mechanism from the unseen agency. The speculations, however, of physiologists on this subject, are curious and entertaining, though, on the smallest reflection, they must be seen to be incapable of furnishing the slightest solution of the essential part of the subject of inquiry. As a man who wants vision has no sense or idea of colours, so it appears probable that for that agent, influence, ingredient, quality (call it what you will), in living organisms, which constitutes vitality, or on which vitality depends, man *wants the fitting perception*. If so, then is the cause or the essence of vitality a thing *necessarily* not “dreamt of in our philosophy,” for the best of all reasons, that its and our nature keep us, and will continue to keep us, mutually ignorant.

As the primitive fibres of muscles and nerves are of smaller diameter than the capillary blood-vessels, as even the red globules are of larger diameter than those, it follows that the nervous and muscular fibrillæ are without vessels. The globules evidently pass along in the vessels: but we must infer, though we cannot observe, that something transudes. What can this be but the fibrin and albumen which are held in solution in the liquor sanguinis? These, it is supposed, permeate the capillaries, and unite themselves to the tissues. That this, however, is the actual mode in which the contents of the blood-vessels reach the tissues, is a mere supposition, from a conjectured necessity that this, or something like this, must take place. With this subject, moreover, certain great difficulties are connected. While albumen, fibrin, fat in a soluble state, and certain azotized and phosphoretted matters, exist ready formed in the blood, and may be supposed to be attracted from it to the several tissues; yet gelatine is not found in the blood. Where, when, how, is it produced? Of this we have not the smallest idea.

Indeed, while there is much obscurity, much absolutely unknown, in connexion with the assimilating processes which aliment undergoes up to the moment when it is converted into blood, all that takes place beyond this point—those processes, to wit, by which blood is converted into the tissues of the body—are, at present, as entirely hid from us as are the changes going on in the centre of the globe. The albumen is probably decomposed partly into gelatine: in this process carbon is freed, and, by uniting in some way with oxygen, is supposed to generate and maintain animal heat. Here, however, it may be remarked, in passing, occurs another of the singular difficulties connected with the whole subject. In what manner do the carbon and oxygen unite? We know of only two modes of union—carbonic oxide, and carbonic acid:—these, besides being both gases, are likewise both destructive to animal life, with which, therefore, their diffusion through the whole venous portion of the blood would seem incompatible. To be sure, however, Dr. Prout seems to speak of the formation of gelatine as taking place in the extreme capillary vessels, but this can scarcely be, since gelatine, as has been already stated, is not discoverable in the blood. Albumen is further converted into oleaginous principles, more especially into those forming the nervous masses. Part of the albumen, no doubt, becomes effete, and probably quits the system in a crystallized form—in all likelihood as urate of ammonia. The conversion of the soluble albumen of primary assimilation into the solid albumen of the tissues, is probably a simple one of dehydration, during which, however, as we have already observed, an important indirect effect, namely, the production of heat, is brought about, in consequence of the less capacity for caloric, of soluble than solid albumen.

Oil, in the process of primary assimilation, is converted into albumen. It appears, even after its separate deposition in the cellular tissue, to be readily reconvertible to albumen.

The conversion of sugar into albumen is only partially understood. The change of sugar into oil, *in the stomach*, is probably, Dr. Prout thinks, analogous to the change which takes place out of the stomach; by which sugar is

spontaneously converted into alcohol, or weak oil.

Derangements of the assimilating process.—Derangement of the assimilating process may proceed from one or both of two sources—something improper in the nature of the alimentary ingesta, or some functional or other fault in the digestive organs, as debility, erithism of the gastric mucous membrane, defective or abnormal secretions, &c. The effect of one or more of these causes is to render chymification imperfect, and it is reasonable to suspect that this primary imperfection vitiates in a greater or less degree all the subsequent stages of digestion, since it is impossible that other than imperfect chyle should result from chyme that is so. But the more imperfect reduction of the food by the stomach is not the only evil. Usually, when the stomach, by a fault of its own or of the food submitted to it, fails in its reductent or chymifying action, its secretions are or become deranged. Morbid secretions are eliminated, which cause the most sinister changes in the matters destined both for excrementition and recrementation. The morbid secretions referred to, consist, among others, of the butyric, acetic, carbonic, and even the oxalic acid, as well as of the lactic, which last, if present at all, ought to be only in moderate quantity. Besides these acids, there are probably other injurious principles which escape recognition. It is possible, too, that hydrochloric acid itself, though a normal agent, may be separated in excess. Supposing, then, such a derangement of chymification, the addition of even a healthy bile to the chyme in the duodenum, will not repair the evil. But the bile may be also morbid. As has already been stated, we are not fully informed of the exact constitution, chemical reaction, and physiological uses of the bile. It follows that we must also be ignorant in some degree what constitutes its abnormal conditions. It is undoubtedly sometimes extremely acid, so much so as to cause inflammation of the hepatic ducts and even of the duodenum and intestines. In some tropical fevers it is alleged to be positively acid. We have, in short, no ground to doubt that it, perhaps more than any other secretion or excretion (the urine alone, excepted, which yet perhaps it should not be), is liable to derangement: it is

equally probable or certain that its derangements most materially influence both chylification and alvine excrementition.

We shall not speak of salivary, mucous, and pancreatic derangements, for we know little or nothing of their nature; but we may be assured that such derangements are; and that they also cannot but exert an untoward influence on chylification and every subsequent stage of assimilation.

We have now to suppose this stream or volume of morbid chyle presenting itself to the lacteals, and seeking admission, as it were, through them into the circulation. Do the lacteals exert an eclectic power, rejecting mal-assimilated matters? We have reason to believe they do so in some degree, but in some degree *only*. There can be no doubt that they often absorb matters seriously injurious to the animal economy.

Dr. Prout is of opinion that the vitalization or animalization of the chyle, that change which fits it for contact with, and performing part of, the living organism, begins in the lacteals; every particle of chyle, to use Dr. P.'s words, "being brought into immediate contact with the living and exquisitely organised structure of the lacteal apparatus." He believes, however, that if the chyle is imperfect, if it be crude, acid, saccharine, or otherwise abnormal, it may indeed be taken up by the lacteals, but that the vitalizing process will be withheld from it, in consequence of which it operates as a species of foreign matter in the circulation, causing more or less irritation in various ways, until it is eliminated by the liver, skin, or the kidney as urate of ammonia, or in some other form.

But while the lacteals allow abnormal chyle to pass, they as well as the mesenteric glands are sometimes found tumid and vascular. It is easy to conceive that in cases in which, from derangement of the stomach, the chyle is highly charged with hydrochloric, lactic, or other acids, which the soda of the bile has failed to neutralise, its passage through the lacteals must be accompanied with irritation, while the *completing* effect which these vessels and the thoracic duct produce on the chyle during its transit along them, will be, more or less, interfered with. And, as we have observed, Dr. Prout attributes

to failure of or interference with the organising, vitalising, or completing function of the lacteals, many of those derangements which lead to abnormal states of the urine.

A knowledge of these abnormal conditions of the urinary excretion, and a facility of recognizing them, is, even now, of no small importance both pathologically and therapeutically; and this importance is likely to increase. The progress recently made in this department of chemico-vital pathology has been considerable, though a large and valuable field of inquiry yet remains for cultivation. Meantime Dr. Prout seems to be of opinion, that the appearance in the urine of saccharine and congenous matters on the one hand, or of urea, to which the saccharine principle is complementary, on the other, indicate peculiarly some morbid decomposition of the particular modification of albumen called gelatine. Hence he supposes that the oxalic acid diathesis, or a super-abundance of lactic acid in the system, gives ground to suspect disease of the cutaneous membrane, into the composition of which gelatine largely enters.

A case has recently presented itself to me, in which the association of chronic skin disease with marked excess of urea in the renal secretion seemed to confirm this view. The daily amount of urine is even larger than usual, and its specific gravity not more than 1026·8; yet, immediately on being voided, the addition of nitric acid to it produces a speedy copious deposit of crystals of the nitrate of urea. At the same time it must be observed, that in other cases, we shall seek in vain for this alliance of sugar, or of oxalic or lactic acid on the one hand, or of urea on the other, with disease of the gelatinous tissues. The supposed connexion ought, however, to fix on the subject the attention of the profession.

If, in case of disease, there is a profuse action of the liver accompanied with a deposition of the phosphates, and these not to be accounted for, from anything peculiar in the alimentary ingesta, we have some reason to suspect decomposition of the cerebro-spinal nervous tissues, or at all events the existence of a diathesis in which some serious disorganization of those tissues may suddenly take place.

There can be little doubt that no small amount of the heartburn, flatulence, irritation, gastrodynia, and feverishness, which in dyspeptics characterize the period of digestion, are owing to the undue development of the various acids, (the chloric, lactic, acetic, butyric), in the primary assimilation, and that many of the disorders of secondary assimilation may be prevented by the well-timed administration of alkalies. These ought to be given from two to five hours after meals, and, as Dr. Prout observes, the dose ought to be small. "Even in the worst case," observes Dr. P. "from ten to twenty, or thirty grains, of the carbonate of potass will be quite sufficient." This seasonable administration of alkalies will not only prevent, as now stated, derangements of primary and secondary assimilation, but will also hinder renal irritation, for which alkaline diuretics might be otherwise required.

Having adverted to diuretics, it may be proper here to state that in all cases in which they are administered, they ought to be largely diluted with water, so that being almost totally insipid and inert, they will not stimulate the bowels, but remain there so long as to allow of their being absorbed into the circulation. Dr. Golding Bird, in giving the same direction, rests the propriety of it on what I conceive to be fanciful grounds. Citing the old experiments of Dutrochet, in regard to liquids of different gravities, separated by a piece of animal membrane, he observes: "a tolerably strong solution of the tartrate or acetate of potass will altogether escape the absorbents; indeed, so far from being absorbed, they will actually excite an exudation of water from these vessels into the stomach and small intestines, these becoming diluted by exosmosis." (Urinary Deposits, p. 285.) Dr. Bird is quite right as to the laxative and non-diuretic effect, which a too concentrated solution of tartrate or acetate of potass will produce, but we apprehend, that, in the effect referred to exosmosis has no share whatever. The saline solution passes much too rapidly along the bowels to admit of exosmosis, an operation requiring time and rest.

The purgative result in this case is most probably a purely chemico-vital phenomenon, depending on the specific action of neutral salts on the mu-

cous and other glands of the intestines, by which these are stimulated to an extra-ordinary ejection of their peculiar excretions.

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[To be continued.]

MICROSCOPICAL OBSERVATIONS ON THE NERVES,

By PROFESSOR PURKINJE.

Translated from Müller's Archiv. für Anatomie, Physiologie, und Medicin, 1845.

By WILLIAM W. GULL, M.B. L.M.

Lecturer on Physiology at Guy's Hospital.

[Concluded from p. 1069.]

PART II.

If the spinal cord, together with its membranes and the arches of the vertebre, be removed, upon the posterior part of their bodies, which form the anterior wall of the spinal canal, there will be seen a plexus of veins described by Breschet and others. This, as Breschet has observed, is rather a system of venous sinuses, which is in direct communication with those of the cerebrum and cerebellum. If we follow out this analogy further, it would appear that the whole fibrous membrane of the vertebral canal upon which this venous plexus is spread out, is nothing else than a continuation of the dura mater of the brain, which as it passes downwards divides into two laminæ—an inner one, which separately surrounds the cord, and is properly called its dura mater; the outer layer, which is accurately applied to the bones, cartilages, and ligaments of the canal as a periosteum: between these laminæ the venous plexuses are situated. As in the dura mater the nerves belong to the whole and yet undivided membrane, so it seems that after its division in the spinal canal they are distributed to the outer layer only, the inner layer receiving no part at all. I found in the outer lamina, both where it lies directly upon the structures of the spinal column, and where it covers in the plexus of veins, numerous bundles of nerves, with fine filaments, which seem to communicate with the sympathetic system through the intervertebral foramina; this, however, requires a more careful examination. They have the character of the vegetative or ganglionic system,

and therefore cannot have their origin in the cerebral or spinal nerves. It is at present very difficult to determine their function, but it seems probable that in certain conditions they may give rise to sensation, and produce a consciousness of the degree of fullness of the venous sinuses, and so produce a reflex action in motor nerves.

Are these nerves, and those of the pia mater of the cord, the seat of those peculiar and undefined sensations, which are felt during copulation, in the regions to which these nerves are distributed? Certain morbid feelings may also have their origin in these plexuses; such, for example, as the sensation of cold water trickling down the back, chilliness, hæmorrhoidal pains, and other similar sensations. The existence of such symptoms might *à priori* have shown that these parts must be provided with plexuses of nerves.

Careful observations are, however, yet wanting upon their distribution and connexion with the rest of the system.

After thus examining the periosteum of the walls of the spinal canal, it remained to direct my attention to the periosteum in other parts of the body. For this purpose I took the periosteum of the tibia, where it lies free anteriorly, and I found it largely supplied with a rich plexus of fine single nerves: other parts require a further examination. These nerves appear to be peculiarly sensitive, as shown by the great pain when the shin is accidentally struck. If it shall hereafter be found that the periosteum of all the bones, and also the aponeuroses, are supplied with such sensitive nerves, it may be admitted that they produce the consciousness of tension in muscles, or at least that the feeling of weariness after extreme exertion, also rheumatic and gouty pains, have their seat in them; and that besides the ordinary motor nerves to the muscles, we must look for special sensitive ones. If the acetic acid should be employed for the discovering of nerves in other parts of the body, I have no doubt that it will enable us to trace out their minutest ramifications in the organic tissues. By its use I examined the following structures:—

Arteries.—If, without the application of any reagent, the fine nervous threads on the arteries of the brain can be fol-

lowed to the third and fourth ramification, yet we may succeed in doing this incomparably better if the artery has been previously made transparent by moistening it with the acid. After such preparation I found in the rete mirabile of the ox an exceedingly rich tissue of nerves, which here spreads over the ramifications of the arteries.

A special examination of the whole arterial system, in this way, would disprove or confirm, extend and more accurately determine, the present opinions of anatomists. It is quite certain that particular parts of the arterial system are very richly supplied with nerves; others, on the contrary, experience an entire want of them; it is also equally certain that the present general statements of anatomists upon the nerves distributed to the vascular coats can no longer be maintained.

Cornea.—It is known that Schlemm and Bochdalek have traced the ciliary nerves into the substance of the cornea. By the use of acetic acid, the human cornea, the cornea of the cow, sheep, dog, and rabbit, after appearing a little opalescent for a short time, become perfectly transparent; and when examined from within, a rather complex network of nerves will be seen running from the circumference to the centre. The elementary filaments of this network combine in a complex manner with each other, presenting the appearance of looking through a kind of continuous basketwork. None of the filaments seem to be lost in the substance of the cornea, nor do any pass to the conjunctiva.

The serous membranes of the chest and abdomen.—As inflammation of the serous membranes of the walls of the chest and abdomen is usually attended with severe and lancinating pains, it seemed to me probable that these structures should also be provided with a tissue of nerves with fine filaments. And since it had further been proved that the membranes which surround the brain and spinal cord possessed such, it was to be expected that the coverings of viscera so important to life as those of the chest and abdomen should not be without a similar guardian system. I therefore examined these membranes in the manner described, yet I could not discover the slightest trace of nerves in them. It must not be concluded from this failure that none

are present; it is rather to be expected, that after continued examination, and further practice in looking for them, some may be yet discovered.

Organs of generation.—I have not examined the serous membrane of the uterus and its ligaments, with reference to the presence of nerves of the above character. In the tunica albuginea of the testicle they are first seen near the epididymis.

In the male organs many organic fibres may be seen to accompany the arteries; a very rich-net work of cerebro-spinal nerve fibres exists upon the ligament of the penis; in its spongy tissue it was with difficulty that I discovered fine filaments having nodulated enlargements upon them.

The heart.—The nerves which are spread over the outer surface of the heart belong to that class which is characterized by nodulations. They are found almost exclusively directly under the serous membrane. I could not trace them into the muscular tissue, except in the neighbourhood of the larger arterial branches. Close to the trunk of the coronary artery, in the calf and pig, I found the small ganglion first described by Remak. In the endocardium of the pig I also found a very rich net-work of nerves with knotted filaments: these are the more readily discovered here, as the interior of cardiac cavities in the pig is tolerably smooth: the inquiry is more difficult in man, because of the prominent muscular bands which leave only a small part of the surface free; yet here they may be distinctly seen when the preparation is very fresh. On the inner surface of the cavity of a sheep's heart, I first saw with the naked eye, directly under the serous lining, a net-work of grey, flat, gelatinous fibres, which were in part continued to the columnæ carneæ, and into other nervous bundles; whilst other fibres crossed over the fissures between the muscular columns on the walls of the cavity, forming as it were little bridges. By microscopical examination, I found that these fibres were composed of globules, similar to those in the ganglia, closely pressed together, and thus appearing polyedrous. In the interior of each globule two or three granules exist, but unlike the nucleus and nucleolus of the globules of true ganglia. Each grey fibre is formed

by rows of these globules, of which there are from five to ten in a transverse section. The fibres are covered with an elastic tissue, which when treated with acetic acid shews transverse markings similar to those of the muscular tissue of the heart. It is difficult to determine whether these are really fibres, or only markings of the membranous envelope, which, as in the cells of vegetables, surrounds the granular contents. This latter opinion seems to me the most probable, because on a transverse section no free extremities of the fibres can be seen; at all events they cannot be compared to those nervous filaments which surround the ganglionic globules in the ganglia, although at first sight they have that appearance; nor could I ever succeed in discovering true nervous filaments which would have given to them a distinct ganglionic character.

At present, were I disposed to class this new tissue with cartilaginous formations, yet I do not understand what can be its function, from its softness in comparison to the largely developed muscular mass of the heart; but it seems most probable that it is an arrangement for motion, and that the membranes surrounding the granules are muscular. I found similar granular fibres in the cow, pig, and horse. On the other hand, I could not discover any in man, the dog, hare, or rabbit. In the hearts of all the ruminants which I have examined I have found, close upon these fibres, and also quite isolated, rounded aggregations of elongated granules inclosed by a delicate membrane. Were they not so constantly present, they might readily be mistaken for the ova of some parasite.

ON THE CHARACTERS OF THE BLOOD IN CANCER.

BY WILLIAM CAMPS, M.D.

In four cases of cancer of the stomach observed by M. Andral, the fibrine was found to exist, in its normal proportion, in three cases; and in the fourth case to be far below that, having only the low proportion 1-9.

In two cases of cancer of the liver, the result was quite different, for in these the fibrine was found to be in

excess; in one of these cases having the proportion 3-7, and in the other, 5-0.

In the first of these cases, the tumor, occupying the right hypochondrium, appeared to be in a state passing from hardness to softening; it was sometimes very painful, and then attended with slight fever. The second case was marked by totally different characters. This patient had a large, very painful, fluctuating tumor, occupying the region of the liver, and very rapidly developed, attended with constant fever. Independently of the space occupied by this tumor, the liver itself had acquired a considerable increase of size. Presenting all the well-marked characters of an inflammatory affection, it was thought the patient suffered from an abscess of the liver. This patient died suddenly, and quite unexpectedly.

The autopsy shewed the cause of death to be a large effusion of blood into the cavity of the peritoneum. The blood had issued from a cancerous excrescence occupying the free margin of the liver, which was completely softened and ulcerated. This excrescence had constituted the tumor observed during life. Numerous broken-down encephaloid masses were found in the parenchyma of the liver, and in some of the ramifications of the vena portæ.

I find there is one case of cancer of the liver, where an analysis of the blood was made, recorded in Dr. Day's Translation of Simon's Animal Chemistry, published by the Sydenham Society. This is described as a case of cancer of the left lobe of the liver, and of the pylorus, accompanied with atrophy of the spleen, occurring in a man 53 years of age.

Analysis.

Water	887.2
Solid constituents	112.8
Fibrin	3.0
Albumen	55.1
Blood corpuscles	45.8
Extractive matters and salts	8.9

In a case of cancer of the ovary, accompanied with fever and sharp lancing pains, the fibrine was observed by M. Andral to be raised to the proportion of 4-5. The autopsy shewed the cancerous mass to be in part softened, with numerous vessels scattered in various directions through it. Around it were traces of slight peritonitis.

In two cases of cancer of the uterus, the fibrine was observed in very different proportions; for whilst, in the one case, it was in the high proportion of 5-6, in the other it existed only in the proportion 1-8. In the former of these two cases, the entire hypogastric region was swollen and painful, accompanied with constant fever. In the latter there was complete absence of fever, the patient being in an almost constant prostration of strength from excessive and frequently recurring hæmorrhage from the seat of the affection.

In the different cases of cancerous affections noticed by M. Andral, the blood-corpuscles were observed to present a progressive diminution in proportion to the other constituents of the blood, as is the case whenever the organism is exposed to the influence of causes producing a state of exhaustion.

In order to ascertain whether traces of the morbid product in cases of cancer could be found in the blood, MM. Andral and Gavarret examined, by means of the microscope, portions of this fluid taken from the bodies of persons who had died from various cancerous affections, and in many cases they found well-marked globules of pus in the blood. In one case especially of osteo-sarcoma, with subsequent production of a large cancerous mass in the anterior mediastinum, they found a very large quantity of globules of pus in the blood contained in the right ventricle of the heart. But besides these globules of pus, they found other bodies offering a peculiar aspect, differing from these as well as from the globules of the blood. These were lamellæ, elliptical in form, granular on their surface, much larger than the globules of pus, and more regular in their form than the lamellæ of albumen. These lamellæ were not only found, mixed with the globules of pus, in the right ventricle of the heart, but in great number in the ichorous fluid taken from the substance of the cancerous mass in the anterior mediastinum. They have observed similar lamellæ in other cancerous masses, although not in the blood, except in the case mentioned above.

In all the cases where the fibrine was found to be in excess, it will be observed that there were present evi-

dent symptoms of an accompanying inflammatory affection, to which, it may be inferred, this increase above the normal proportion of the fibrine is due, rather than to the development of the accidental morbid product, constituting the disease under consideration.

Green Street, Grosvenor Square,
Oct. 1845.

PATHOLOGY OF CROUP.

DR. DUNCAN considers that whenever croup is the result of the extension of disease from the lungs upwards; in other words, where there existed antecedently pneumonia or bronchitis, the operation of opening the air passage would be unsuccessful, and ought not to be performed; when, on the other hand, it is the result of the extension of disease from the pharynx downwards, it would often be the means of saving life, and ought, under favourable circumstances, to be resorted to. In the former case the complication of pulmonary inflammation renders the result hopeless; but in what is called secondary croup, or that extending from the pharynx downwards, the lungs, as he has had many opportunities of observing, are often perfectly free from disease. When the croup is developed, auscultation yields no assistance in ascertaining the condition of the lungs, because the loud stridor, which accompanies respiration, drowns every other sound within the chest; but percussion is usually of great use, because the diminished resonance, from the hepatized portion, is not interfered with by the change in the character of respiration. This, however, is not always the case, both because pneumonia in children is apt to assume the lobular form, involving very small isolated patches in the midst of healthy structure, so that no dulness is elicited on percussion, or, as has been almost uniformly observed in the pneumonia of the present season, an emphysematous condition of one part of the lung is developed along with pneumonia of another adjacent, so that a compensation is established between the increased resonance of the one and the diminished resonance of the other. We must not, therefore, always look for dulness as a characteristic of the pneumonia of children. When it exists, of course it is important, but the absence of an appreciable degree of dulness in children is no proof of the non-existence of pneumonia.—*Dublin Hospital Gazette*.

CHANGE OF AIR.

DR. M'WILLIAM relates, that when at Cape Palmas, he met at the Governor's House a missionary who was proceeding to *Sierra Leone* for the benefit of his health!—*Expedition to the Niger*.

MEDICAL GAZETTE.

FRIDAY, OCTOBER 31, 1845.

It is, we think, obvious, that all attempts to reform the medical profession, in order to be effectual, must be directed to the improvement of the system of education which is at present pursued. More than one curriculum for each grade of the profession is not needed. The candidate who intends to become a physician, surgeon, or general practitioner, should have no petty inducement in the shape of a less amount of study, or a lower scale of fees, to select either of the three kingdoms in preference to the other. Let there be a rivalry in the talent and ability of teachers, as well as in the means of teaching; and whether the preponderance of pupils be hereafter in favour of England, Scotland, or Ireland, we believe that no man who has the honour and respectability of his profession at heart, will complain. *Palmas qui mereat ferat.* The case, however, is widely different where any indirect allurements to pupils are held out, as by a relaxed system of study, lower fees, and a shorter period for graduation. These are the means whereby medical education becomes deteriorated,—the noble profession of teaching is converted into a mere trade, regulated by a money competition; and a low class of practitioners is raised up, to the pauperization of those who have already earned their professional status by a proper course of study.

There are various kinds of competition connected with medical education, all tending to its debasement:—1. The competition of schools; and 2. The competition of licensing bodies. Our readers will, we are assured, consider it unnecessary for us to argue, that the

teaching of any branch of medicine is placed on an entirely different basis to the exercise of a mere handicraft or trade. In the latter case, competition may tend to public good without inflicting private injury; but it is not so with regard to the professor in a university or medical school. He must, under such a system, either consent to teach gratuitously, or give place to some man less qualified than himself, whose poverty may induce him to occupy “a chair,” upon the lowest terms. We decline treating this question upon the cold formal principles of the political economist, who would probably leave such matters to regulate themselves. The evil effects of this kind of competition on the medical profession, have been plainly shewn by many of the appointments which have been made in Poor Law unions. The charge on the parochial rates has been lessened; but the treatment of the poor, as we have endeavoured to shew in our two last numbers, has either fallen into the hands of incompetent persons, or it has been undertaken at a heavy sacrifice by those who were really competent. The proper performance of duties which involve a high responsibility, can never be ensured by a system of this kind,—a fact demonstrated by its not being universally carried out even in medical appointments. Some members of our profession have lately been appointed under the new Act, Commissioners in Lunacy: we have no doubt that had these offices been put up to competition, many medical men would have been willing to take them at one-third of the salary which has been fixed by law; but such a method of filling responsible offices in respect to the operation of the Lunacy Act, is very wisely rejected; and for the sake of maintaining a little consistency, we should like to see it abandoned in other cases.

The advertisements of the day give

us some intimation of the degree to which the system of competition by a low scale of fees for lectures or courses of study, is carried on; and there are few who have attended to the subject of medical education, who are not aware of the great injury which is thus inflicted upon the profession. Some very strong, but, we believe, very just, remarks, have been lately made on this subject in a contemporary journal*: "Lecturing," the writer observes, "has been brought into discredit and contempt, and rendered ridiculous and absurd, in consequence of the assumption of the duty by such numbers, and the unlimited permission given to all who please to discharge it, without the slightest proof of fitness being required. In Dublin there are, we believe, seventy or eighty lecturers, of whom there may be some five-and-twenty earning a paltry pittance by the pursuit; the rest are quite satisfied to save their expenses, and some persevere at a very considerable annual loss (!) It is a fact that some, and more than some, a very considerable number, actually pay for the privilege of lecturing to empty benches (!)" Let any one reflect, whether teaching thus carried out on free-trade principles to a ruinous extent, is likely to benefit those who desire to enter the profession? It may answer the purpose of the teachers to procure for them a certain degree of reputation, and thus lead to an augmentation of practice, but as a system of medical education, it utterly fails. We have little doubt that the Council of Health will put a check upon this pernicious system, by requiring, before granting a license, some good evidence of the capability of persons, professing to teach any branch of the profession,—as well as of the full possession of means by every medical school, for

carrying out to a practical extent, the great objects of a medical curriculum.

Their interference, however, must not end here:—the profession has a right to expect that some check will be put on the competition which has existed in the sale of diplomas. Unless this be suppressed, we do not see why the new Bill should place any restrictions on those who have obtained degrees at Foreign universities. The licensing bodies of the United Kingdom cannot reasonably claim a monopoly in conferring licenses, unless they agree among themselves to a uniformity of qualification, and a common system of examination for their candidates. If the Colleges of the three kingdoms are to be allowed to compete with each other in lessening the amount of study, and reducing the fees for their diplomas to a minimum, it is not to be expected that the character of the profession will be much benefited by the proposed change. We fully anticipate, however, that the new Council will exert its power to remove both of these great obstacles to the improvement of medical education.

Reviews.

A Clinical Introduction to the Practice of Auscultation, and other modes of Physical Diagnosis: intended to simplify the Study of the Diseases of the Lungs and Heart. By H. M. HUGHES, M.D. Assistant-Physician to Guy's Hospital, &c. Small 8vo. pp. 246. Longman: London, 1845.

IN the volume before us, Dr. Hughes has given the most complete and practical exposition of the means of diagnosis derivable from auscultation and percussion, with which we are acquainted. Although the publication of a work of this description requires no apology, we may as well cite the grounds upon which the author informs us his intention of writing this treatise originated, as they give a fair idea of

* Dublin Medical Press, Oct. 5th.

the character and design of the work. It was suggested, in great measure, by the occurrence of conversations of the following kind between the author and his pupils.

“ ‘I want, Sir, to learn something about auscultation,’ a pupil has said to me: ‘what book would you advise me to read?’ ‘The book of nature, Sir; go to the bed-side, and to the inspection-room.’ ‘Yes! but I know nothing about it, and I want some little information beforehand.’ ‘Certainly! Read Andral, Bouillaud, Laennec with Forbes’s Notes, Hope, Stokes, Williams.’ ‘Oh! but I have not time to read half of them, or perhaps really to study one of them. I only just want something to give me a little insight into the matter, and then I mean to work away in the wards,’ ‘Then look over Martinet’s Manual, or get Sharpe’s little compilation, or Spittall, or Cowan’s Bedside Manual, or Dr. Newbiggin’s translation of the exquisite little work of Barthe and Roger.’ ‘Well! I have got one of those you mention, but I can make nothing out of it. There is such a profusion of terms, such lots of bruits and râles, that I cannot get on at all. I wish you would write a book that beginners could make use of; it is really much wanted for pupils, and for other persons who have been out of the way of clinical instruction for some years.’ ”

The author’s aim, then, appears to have been to present to the student a concise, intelligible, and correct account of the various means by which the several forms of thoracic disease are at present diagnosticated. He lays claim to no large amount of originality in the details, but pledges himself that he “has given no directions of which he has not, by long practice, proved the utility; and that he has made no statements which, from whomsoever they may have been originally derived, are not the results of his own observation.” We conceive that Dr. Hughes has carried out his design with great success; his descriptions are conveyed in plain, strong, and intelligible language, and the characters and modifications of all the thoracic sounds most usually encountered in practice are faithfully expressed.

Of course no work of this description can be regarded otherwise than as a guide to the practical study of auscultation in the sick-room. The student can learn to recognise the physical evidences of thoracic disease by the ear alone: but, before entering upon this course of study, he requires to be, in

some measure, prepared to recognize the sounds which he is about to hear, and to have become acquainted with the nature of the mechanical causes upon which they depend; he requires, also, a well-arranged text-book, which he may consult at the bed-side itself, whenever the teacher is not present, to explain to him the perplexing signs which are at that moment under his notice. These requirements are certainly very satisfactorily met in Dr. Hughes’s Treatise.

We fully coincide with the author in his strenuous manner of insisting upon the absolute necessity that the student should avail himself of the opportunities of studying auscultation which are open to him during his hospital attendance. In very few instances, indeed, can the use of the stethoscope be acquired in private practice. The practitioner who, for the first time, applies his ear to the chest of a patient suffering from thoracic disease, can, of course, gather nothing but perplexity and anxiety from the act,—he hears sounds which he can neither characterize nor understand; he is confused by a throng of symptoms which he cannot explain; he imagines vague evils where none exist, or assumes upon the soundness of parts in which disease is working rapid destruction; still, it is for him—even thus unprepared and uninformed—to make an immediate diagnosis, and to treat the disease; while, upon the proof of the correctness of that diagnosis, and the success of the remedial means which it has suggested, his reputation will, and his self-esteem should, depend. This will of course be necessarily a painful dilemma, and its frequent occurrence must always have sufficient force to prevent the medical man from being able to make his own patients the subjects of that long and deliberate course of observation which the study of auscultation imperatively demands. On the other hand, the hospital student begins to use the stethoscope under the most advantageous circumstances. A large number of varied cases are constantly open to his inspection; for the correct diagnosis and treatment of these he is in no way responsible—in their issue he has no stake; his frequent failures in distinguishing the true nature of symptoms,

are merely useful lessons, and his errors and uncertainties are continually subject to the corrections and explanations of others more experienced than himself. His study is, therefore, attended with every facility, and may be pursued without distraction, and with perfect tranquillity of mind.

A work of this kind is, of course, not well adapted for quotation; we shall, therefore, merely extract a few passages for the purpose of giving an idea of the author's style and material. In speaking of the circumstances which occasionally interfere with the use of mediate auscultation, Dr. Hughes observes—

“In reference to œdema, however, another caution is required. This arises from the frequently observed fact, that the escape of serum from the cellular membrane, by the pressure of the instrument itself, gives rise to a sound very similar to one frequently proceeding from within the chest. The sound referred to is *pleuritic rubbing*, one form of which, possessing a jerking, or interrupted character, the noise produced by the escape of the serum from the cells under the pressure of the stethoscope, so exactly resembles, that if the patient continued to breathe during the whole of the examination, the two sounds would be distinguished with the greatest difficulty, if, indeed, they could be at all distinguished from each other. An obvious distinction of course exists in the fact, that the rubbing of the pleura is only present during respiration; while the œdematous creak, so long as any serum remains to be squeezed out of the cells, persists though the breathing be temporarily suspended. The sound so precisely represents certain forms of the rubbing existing in disease of the pleura, that I have, in the presence of pupils, occasionally illustrated the latter sound by pressing the stethoscope upon an œdematous thigh. If, indeed, the œdema be soft, and the integuments flabby, the peculiar sound to which I have referred is not always produced by pressure, or it is of a much less sharp and decided character than when the swelling is firm and tense. On these two accounts, then,—first, because the infiltration of the integument obstructs the sounds proceeding from the chest; and, secondly, because, on pressure, it gives rise to another sound, which may easily be confounded with one of intra-thoracic origin; the serum of œdema should be carefully pressed out of the cellular membrane before auscultation is attempted. (pp. 88-9.)

That a really practical manual of auscultation for students, has been long required, cannot be doubted. Dr.

Hughes has, we conceive, been perfectly successful in supplying the desideratum. We recommend this volume to the student as an inseparable companion to the stethoscope, throughout the whole period of his hospital studies.

Lectures on the Theory and Practice of Surgery. By the late ABRAHAM COLLES, M.D. Edited by SIMON M'Coy, Esq. F.R.C.S.L. Small 8vo. 2 vols. pp. 396 and 360. Machen, Dublin. 1844-5.

AMONG the crowd of medical works that are daily issuing from the press,—entirely, as it would seem, for the purpose of announcing the infinite accomplishments of their authors,—it is very gratifying to meet occasionally with one in which a practitioner of enlarged mind and sound judgment has recorded the whole experience of a long life with the sole intention of conveying instruction to others. Of this kind is the series of lectures before us. It would be difficult to point to any work in which the opinions are given more plainly and unaffectedly, or with greater intrinsic evidence of conviction and good faith on the part of the author, than in these lectures of Dr. Colles: we feel convinced as we read, that the able surgeon who delivered them drew his opinions from extensive and acute observation; that no statement has been heightened for the purpose of gaining éclat, or softened down with the intention of conveying a false impression. Veracity characterises them throughout, and the very errors of the lecturer claim our respect, for it can generally be perceived that each questionable view is founded upon a consideration, although a mistaken one, of facts, not upon hasty conjecture; and that, whether right or wrong, the speaker has honestly believed the truth of every one of the opinions he has enunciated.

It is to be regretted that these lectures have appeared so late: it is not mentioned when the notes were taken, but it is very evident that they must have been delivered at least ten or twelve years ago; and in fact, they scarcely contain any opinion or principle that might not have been announced twenty years since. The Professor seems to have formed his course almost entirely upon his own observa-

tion, backed by the most consistent opinions of those who were authorities during the earlier period of his career, and to have varied it very slightly indeed to include new facts developed by advancing research. Indeed, allusions to the opinions of others occur very rarely throughout these lectures; occasionally reference is made to the doctrines or the inventions of a surgeon who flourished some fifty years ago, and whose name survives only in the pages of John Bell, or of the *Surgical Dictionary*; but we do not see that the discourses convey the least evidence that any surgical observations have been made by the Professor's later contemporaries since the time of Dupuytren. Still, this does not at all prevent the work from being a very fit one to place in the hands of students in the present day. If no new doctrines are inculcated, very few of the old ones advanced are otherwise than of approved value: indeed, the whole work is replete with sound observation and able reasoning. Its faults are chiefly those of omission; and in the medical treatment of most of the diseases it is certainly greatly deficient: but this is not surprising when it is remembered that Professor Colles obtained the ground-work of his knowledge at a time when surgery was considered an art entirely separate from the science of medicine; when a surgeon of note would not hesitate to confess that "he had not been educated in the practice of physic!"* and when medical reviewers treated such a declaration as a matter of course. Still, we repeat, the perusal of this work will be found most advantageous by students who are already thoroughly acquainted with the principles of surgery as taught in the present day, and who can perceive that many of the subjects treated of in these Lectures must also be studied in more recent works.

The editor and reporter of the Lectures has, here and there, introduced a sensible remark, or illustrative case, in the form of a note; and, although it is occasionally evident that the correcting hand of the lecturer was required, he has, upon the whole, performed his task in a very able manner. We have marked a considerable number of the isolated facts given in this work for insertion as extracts; we shall there-

fore now merely give a single quotation as a specimen of the Professor's style of teaching.

"There are some means by the employment of which you will be able occasionally to relieve strangulated hernia without operation; and they should, in most cases, be tried before having recourse to the knife. You should begin, in these cases, by bleeding the patient, not merely for the purpose of making him faint—although that is of the first importance—but likewise to reduce or moderate inflammation. I never saw a recent strangulated hernia where bleeding was not necessary. Cases, apparently very similar, will end differently; so that if your patient, whom you have bled in the first instance, should afterwards die, you are not to think that it was the bleeding which killed him; you must never judge from one or two such cases. My advice to you is, never to let a case of strangulated hernia come across you without having recourse to bleeding, and this should be carried to fainting: take blood in a full stream, and from an orifice so large that you would be almost afraid to make such a one in a vein" (apparently a favourite expression of the Professor's). "When you make your patient faint, you will often be able to return the hernia. The warm bath is advised, and is sometimes useful; but as the only intention in using it is to make the patient faint, you must make it as hot as he can bear it comfortably, but no hotter. Purgatives should never be given, in recent strangulated hernia, by the mouth; purgative clysters may be of service by relieving the fulness of the large intestines, and relieving the tension; but you need not persevere in them; for, after the first or second injections, they cease to give relief. Tobacco injections are the very best things after bleeding*. Formerly, the smoke of tobacco was used for this purpose, but the objections to it were—the difficulty there often was to get the machine to work well, and the distension it caused was very distressing; the infusion is therefore now substituted. You get a drachm of tobacco-leaves, and infuse it for ten or fifteen minutes in boiling water (how much?); when cool, inject one-half, and if, in a quarter of an hour, you observe no effect from it on the system, inject the other: the effect you look for is fainting, depression, cold perspiration, &c. I have seen many cases where the surgeon persevered for a considerable time to try to put up the hernia by the taxis, without success, and which went up of its own accord after the tobacco enema. Warm applications are objected to on the ground of their increasing

* *Edinburgh Medical and Surgical Journal*, Vol. viii. p. 79: 1812.

* A few unfortunate cases have caused most English surgeons to be very chary in the use of strong tobacco injections in hernia.—*Ed. Gaz.*

the volume of the hernia. Now I believe warm applications do very little good or harm : but as to rarefying the air in the protruded bowel, I believe that neither warm nor cold applications can have any effect on the contained air. Take care how you apply too great a degree of cold, or for too long a time, to the scrotum when it is inflamed, and its colour purplish, or when the bowels are down two or three days, for the vitality of the parts is reduced, and you might bring on gangrene. I have heard that dashing a tumbler of cold water over the patient without giving him notice of your intention has succeeded in getting up a strangulated hernia. Petit tells a story that he had such a case where he saw nothing that could be done except to operate, and pressed the boy's friends to let him perform it, but the patient's mother would not consent; and while they were arguing she got a tub of cold water, dashed it over the boy, and the hernia went up of itself. I have seen taking up the patient by the heels, and holding him by them for a short time, succeed in getting up a hernia when nothing else would, but it is a practice by which, if you fail, you will be likely to get into disgrace." pp. 277-79.

We have concluded our perusal of these lectures with a very high opinion of the judgment and surgical acumen of the late Professor Colles, and can confidently recommend the work as one replete with sound doctrines and practical facts.

The India Journal of Medical and Physical Science. Edited by C. FINCH, Esq. M.D. New Series. Nos. I to 4. Calcutta, 1845.

THE India Journal is now a periodical of some standing,—having been regularly issued since the year 1833,—and the ability of the several editors who have conducted it, and the value of the communications with which its pages have been enriched, must, long ere this, have rendered it a work of considerable importance to our East Indian brethren. It now, for a fourth time, appears under new auspices, and we feel satisfied that the care and ability with which these opening numbers have been edited will convince the profession in India that the early promise of their journal continues to be fulfilled. We are always happy to welcome the results of the literary industry of colonial surgeons, and especially of officers in the public services. Men engaged in active duties abroad have but few inducements to write, beyond those which

spring from an honest wish to increase the store of professional knowledge; hence, their works are seldom unnecessarily obtruded, and are usually written with a practical and matter-of-fact terseness and brevity, and an absence of theoretical prosiness, which make them highly relishing to the editorial taste, and render them worthy of all imitation.

Several valuable works have emanated from our East Indian fellow-labourers, but, upon the whole, the torrid sun of the East has not proved very favourable to the development of germs of literary talent. The peninsula of India has long contained a large body of highly educated medical men, actively engaged in the fulfilment of their official duties, and with an ample field for observation before them, but the absence either of will or of opportunity appears to have kept the larger proportion of their number silent regarding the valuable original medical facts with which their minds must necessarily be stored. Doubtless, many an able surgeon has continued, throughout the whole of his Indian career, to collect fact upon fact, and deduction upon deduction, in the hope that, during the years of competence and leisure to which he has earnestly looked forward, when the time of retirement from his official duties should arrive, opportunities would be afforded him of forming his materials into a system for the instruction of others; but this hope must, too often, have proved vain,—the labourer has been stricken down in the midst of his toil, and his knowledge has perished with him. Probably in the sand of many an obscure Indian cemetery repose heads which could have framed, and hands which might have indited, works equal, or perhaps superior, to those which have gained deserved reputation for Annesley, O'Shaughnessy, Webb, and many other able illustrators of the diseases of India. The attention of surgeons in the East cannot be too strongly directed to the opportunity which their periodical journals afford them of placing their observations upon record while to-day is theirs. An undue anxiety to flourish in print should always be most earnestly deprecated and assailed; but the obligation which binds every medical man to promulgate his really useful and original observations, for

the good of science, is not one which choice or fancy should be allowed to control; it is simply and clearly a duty which honesty and justice alike demand.

These four numbers of the India Journal contain several interesting articles. The original communications which appeared in the first three parts are few, but of considerable importance. The principal are, "Observations on the Prevalence of Sloughing Ulcers in the Tenasserim Provinces," by Assistant-Surgeon John Tait; an Essay on "Hydrocele treated with an Injection of Oxymuriate of Mercury," by Surgeon W. Raleigh; a valuable series of papers on diseases of the eye, by Assistant-Surgeon Joseph R. Bedford, whose previous writings in the English periodicals have received well-merited approval; and a case of hydrophobia, by the Editor, Dr. C. Finch. The fourth number contains a large body of interesting communications, some of which have found a place among our selections. We trust that this number may be taken as an evidence that the readers of the Journal are becoming anxious to enrich it with their best observations.

We shall continue to watch the progress of the India Journal with much cordial good-will.

Proceedings of Societies.

MICROSCOPICAL SOCIETY OF LONDON.

21, Regent Street, Oct. 15th, 1845.

J. S. BOWERBANK, Esq., F.R.S. &c.
IN THE CHAIR.

Fossil Xanthidia in Chalk.

A PAPER by H. Deane, Esq. being a continuation of a former communication, read at the last meeting of the Society, "On Fossil Xanthidia found in Chalk," was read. After a brief summary of the former paper, in which he stated, that various species of the genus *xanthidium* had been found by him in the Folkstone chalk, Mr. Deane went on to state, that this new discovery, by affording the means of isolating and mounting these bodies in various ways for examination, suggested to him the possibility of ascertaining their true nature. Their minuteness and other obvious circumstances prevented their chemical examination, and consequently, they could only be operated

upon mechanically. Their shape is that of a flattened sphere, the major part of them closely resembling some of the gemmules of sponges, most of them having a circular opening. The arms of all appeared to be closed at the ends, and not dilated, as has been supposed from the examination of some of the flint specimens. Under pressure in water between two pieces of glass they were torn asunder in the same manner as a horny or cartilaginous substance and the arms in contact with the glass were bent; some after maceration in water for several weeks they became quite flaccid, thus entirely disproving their silicious nature; on the contrary, there is every reason to suppose them to be of a horny or cartilaginous nature. Some other bodies resembling the husks of peas were also observed, which appear to be identical with the *pixidiculæ* in flints, but these although agreeing in colour he does not consider to have any relation to the *xanthidia*, but from their close resemblance to sponge gemmules to be some animal or animals in a progressive state of development.

Another paper by the same gentleman, "on a mode of isolating the silicious shells of infusorial animals found in the Ichaboe guano," was also read. After premising that the guano from Ichaboe was soon found to contain siliceous shells of microscopic animals, allied to those brought from Richmond in Virginia and from Bermuda, he stated, that the extreme difficulty of finding them in the ordinary mode, induced him to try whether by decomposing the guano by means of nitric acid more satisfactory results might not be obtained. The experiment was successful, and the following is the method he employed: take any quantity of pure Ichaboe guano, and work it by repeated ablution of distilled water, until the water is no longer coloured, observing after each addition of water, that it must be well stirred two or three times, and allowed to settle for some hours. When sufficiently worked, a small quantity of hydrochloric acid is to be added to the water last used; this dissolves some portion of the guano with effervescence, and causes a more perfect subsidence of that portion which it does not act upon. After this, allow sufficient time for the deposit to become well settled down; then, the clear liquor being poured off as closely as possible without loss of sediment, a quantity of strong nitric acid in the proportion of two fluid ounces to every ounce by weight of the guano employed is to be added. A strong effervescence takes place, which is to be assisted by its being kept in a warm place, at a temperature of about 200° for six hours, during which time the greater part of the guano will be dissolved. After allowing it to stand

in a cool place for twenty-four hours, pour off the acid liquor, and wash the sediment with plenty of distilled water. The fine portion of this sediment will contain all the siliceous shells of the guano perfectly freed from extraneous matter.

Correspondence.

TEST FOR ORGANIC ADULTERATIONS IN DISULPHATE OF QUININE.

[DR. NEVINS has forwarded to us in relation to Mr. Mowbray's criticisms on his test, copies of two letters addressed to the editor of the *Pharmaceutical Journal*. We do not consider it necessary to reprint the first letter, since the part to which Mr. Mowbray's criticisms referred, has been already extracted*. We subjoin the second letter:—]

"It † has been mentioned to me, that in the test proposed last month for the presence of organic adulteration in disulphate of quinine, I omitted to notice an important fallacy, viz. that if diluted sulphuric acid is evaporated, *nearly or quite to dryness* with pure disulphate, a black frothy compound is formed. This is certainly true, and ought to be guarded against. In applying the test, a black colour will be produced almost as soon as the solutions begin to boil, if sugar or gum is present; but if the disulphate is pure, no effect, or at the most a *slight brown tinge* will appear, until the solution is so concentrated that *white fumes* of sulphuric acid are volatilized. The application of heat should be stopped on the first appearance of these fumes, or if continued, it will occasion the decomposition and charring of the quinine itself. If organic adulteration is present, a deep black stain will be observed long before the concentration has been carried to this point; and if merely a slight brown tint is present, the sample may be considered pure. One or two trials with pure quinine, and with the same sample purposely mixed with different proportions of sugar, will illustrate the above directions better than any description however long‡."

REMARKS.—The difference in the results obtained by our two correspondents appears to us easy of explanation. Mr. Mowbray employs concentrated sulphuric acid, which on boiling, carbonizes the purest specimen of disulphate of quinine, while Dr. Nevins dilutes the sulphuric acid with twice its bulk

of water, and finds that the disulphate is not carbonized until the evaporation is carried so far, that the water is in great part driven off. These facts are explicable on common chemical principles: by adding water to sulphuric acid, we destroy, to an extent determinable by the amount of water added, its carbonizing property *quoad* certain organic substances; hence, it is not in a condition to take away oxygen and hydrogen, on which this carbonizing action depends. The following results, derived from a series of recent experiments, will, we think, show that the process is insufficient to detect "organic adulterations" in the disulphate, and that it is only fitted under certain precautions to detect the admixture of sugar, gum, or starch.

Action of pure and concentrated sulphuric on disulphate of quinine and some organic compounds.

1. *Disulphate of quinine.*—The acid, allowed to digest in a small tube at the common temperature for 48 hours with a few grains of disulphate, had undergone no change: the salt was dissolved; on boiling, the liquid became dark coloured from partial carbonization. When the acid and disulphate were openly exposed in a porcelain saucer for the same period, there was no discolouration not even on boiling: sufficient water had been absorbed to prevent the usual carbonizing action. It was found that a small quantity of sugar might be added to this acid liquid without its presence being indicated by any change of colour. On increasing the sugar to one-fourth of the bulk of the disulphate, the liquid acquired a reddish colour, passing to a red brown, and this was not changed to a black colour until the sugar was added in comparatively large quantity. Gum and starch added in rather large proportion gave on boiling, with a portion of the acid liquid only, a straw-yellow tint.

Another specimen of pure disulphate similarly treated gave similar results.

Cold sulphuric acid was then poured on the crystallized disulphate, mixed with about one-fifth part of sugar in a porcelain saucer. In about half an hour the liquid had acquired a slight brown tinge, but after 48 hours' exposure, it was impossible to distinguish the contents of this saucer from the mixture of pure disulphate and sulphuric acid. On boiling, the liquid acquired a dark reddish brown colour.

When the quinine was mixed with one half sugar, and allowed to digest with the cold acid 48 hours, the liquid had become perfectly carbonized.

Two specimens of pure disulphate of quinine, boiled with sulphuric acid, were immediately and completely carbonized.

* Page 914.

† *Pharmaceutical Journal*, September 1845.

‡ If the acid and water have been added in the proportion and manner herein described, I have always found that the whole of the disulphate of quinine has been dissolved. If added in the proportions and manner employed in dispensing mixtures, the quinine sometimes remains partially undissolved.—J. B. N.

Sulphuric acid, diluted with *twice its bulk* of water, produced no change of colour in the cold, on the pure disulphate. On boiling it (Dr. Nevins' test), there was scarcely any perceptible change of colour. On adding a small portion of sugar, a red, and, on increasing the quantity, a brown and black tint was successively brought out. Similar results were obtained with gum and starch, although in equal quantities not in so decided a manner as with sugar.

Sulphuric acid does not easily clear all organic compounds; and if diluted with twice its bulk of water there are some which are not even carbonized on boiling. Sugar, gum, and starch, allowed to digest in cold sulphuric acid, gave the liquid a brown tint in half an hour, and it was perfectly blackened in 48 hours. When either of these substances was boiled with sulphuric acid, an immediate blackening took place.

2. *Citric acid*.—The powdered acid, digested with sulphuric acid 48 hours, had undergone no change of colour; in one experiment it acquired a light yellow tint; on boiling the liquid, it became of a light brown colour, but there was no decided carbonization. When the sulphuric acid was diluted with twice its bulk of water, there was no change either in the cold after 72 hours, or on boiling. The citric acid was merely dissolved.

3. *Tartaric acid*.—*Bitartrate of Potash*.—*Binoxalate of Potash*.—The results obtained with sulphuric acid, diluted with two parts of water, were precisely the same as with the citric acid. There was no carbonization either in the cold or on boiling, unless a portion at the edge of the tube happened to be suddenly heated to dryness.

4. *Gallic acid*.—This acid digested in cold sulphuric acid 48 hours, acquired a light yellow colour, but it was not carbonized. On boiling the mixture, the well-known crimson colour (not black), was brought out. In this respect gallic acid is the reverse of salicine. Salicine is turned of a crimson red by cold sulphuric acid, but carbonized on boiling.

5. *Benzoic acid*.—Cold sulphuric acid acquired a light pinkish tint by standing on the crystals 48 hours; on boiling, the benzoic acid was dissolved, and the liquid acquired a somewhat deeper colour, but there was no decided carbonization. When the gallic and benzoic acids were treated with sulphuric acid diluted with twice its bulk of water, the effects were much less marked.

The following experiment was then performed:—a few grains of crystallized disulphate were boiled in one part of acid diluted with two parts of water. The crystals were dissolved, but they were not carbonized. Tartaric acid was then added, until its bulk was equal to that of the disulphate em-

ployed, but there was no change of colour; the acid was merely dissolved. Citric acid and bitartrate of potash were substituted for tartaric acid with similar results. On adding a small portion of sugar, the liquid in a few minutes acquired a reddish tint, which became deeper by standing; but which did not acquire a black colour until the sugar was added in very large proportion. From these results it appears:

1. That boiling sulphuric acid easily carbonizes pure disulphate of quinine.

2. That cold sulphuric acid does not readily carbonize it.

3. That sulphuric acid diluted with twice its bulk of water, does not readily carbonize it, either in the cold (after 48 hours), or on boiling.

5. That cold concentrated sulphuric acid exposed in an open vessel, will not detect the presence of sugar in the disulphate, when the sugar is in small proportion.

5. That sulphuric acid diluted with two parts of water, will give a red, brown, or black colour, on boiling with sugar, gum, or starch, according to the quantity of those substances present.

6. That sulphuric acid either concentrated or diluted as above, does not carbonize several organic compounds (citric and benzoic acids—tartaric acid and bitartrate of potash), either on standing in the cold for 48 hours, or on boiling*.

7. That therefore sulphuric acid cannot be regarded as a test for "organic adulteration" in disulphate of quinine. It will only, under proper precautions, serve to detect the presence of a certain amount of sugar, gum, or starch, in the disulphate.

The process is obviously beset with many fallacies. By trusting to it, a specimen of disulphate largely adulterated with tartaric or citric acid, or cream of tartar, might be pronounced pure. It is true that there are other ways in which these impurities may be detected, but then it follows, that sulphuric acid cannot be a sufficient test for "*organic adulterations*," and to employ it for the detection of *sugar*, great care must be taken not to dilute it with too much water. On the other hand, if the water be in too small a quantity, the pure disulphate itself will become carbonized. After all, the plan recommended by Dr. Pereira appears to us to be the best. Precipitate the quinine by carbonate of potash, evaporate the liquid to dryness, and digest the residue in rectified spirit—this will dissolve the sugar, and leave the sulphate of potash.

* Tartaric acid and the bitartrate were not carbonized by digestion with cold sulphuric acid, but speedily on boiling. Tartaric acid differs in this respect from citric acid.

SIGNS OF PREGNANCY.

[We have received the following statement from the medical gentleman who gave evidence in the case of assault on a pregnant female, reported at p. 1083.]

SIR,—I was requested to see this person on the 12th of September. I objected much to do so; and it was only after much persuasion by a patient of mine that I consented, and not till after I told the keeper, in the presence of a witness of credit, that my going would not benefit him if the woman were really so much hurt as reports had made out, for that I would most certainly declare what I found, and further, that I would make use of no *finesse* whatever to see her, but would come away directly if any objections were made.

When I went, I told the woman that I was sent by the head-keeper, who had heard of her injuries, and also told her that she need not answer me any question if she objected, for I would depart immediately if she did so. I then asked if she were bitten, and where: she told me she was not bitten, but her illness was caused by fright only.

She told me she was seven months advanced in pregnancy, and that her last child was then nine months old. I then asked her what were the symptoms caused by the fright. Her answer was, that on the day of the assault, after coming home, she had severe pains and floodings, which had continued at intervals till the day I saw her, on the 13th of September, but that no miscarriage had taken place. I asked her if she would allow me to place my hand on her body: this she consented to do. I carefully examined the parietes of the abdomen with my hand, without any intervention of bed-clothes, or linen of any kind whatever, and could find no prominence at all. I then requested her to let me see her breasts: they were quite flaccid; and as she had but recently left off suckling her child, the presence of the areola could not be a test of pregnancy. I told her that it appeared very strange that there should be no enlargement of her body in her advanced stage of pregnancy. She replied, that the child had turned over, and had got out of its place.

I afterwards ascertained, that on the 25th of August—the assault having occurred on the 23d—she walked to Tapp's house, a distance of full three miles, and brought back her bundle of wood that the keeper had taken from her; that on the 30th of the same month, she walked to W— Market; and a few days after that to M—, distances of between three and four miles: and yet she declared to me that severe floodings had occurred directly after the accident, and had continued to the hour I saw her.

I told the magistrates that she admitted to me that she *was not bitten*; that I did not consider she was seven months advanced in pregnancy when I visited her (she told the magistrates she was eight months gone), because, although a very thin woman, there was no prominence whatever in her body; that if she had been attacked with such serious symptoms she declared she had been, abortion would have occurred before the 23d of September—the day the proceedings took place before the magistrates. After having attended numerous premature labours between the sixth and seventh month, brought on by over-exertion and other causes, I can assert that I never saw *but one* where the child was not expelled in a very few days after the escape of the liquor amnii, or severe losses attended with expulsive pains, as she declared she had suffered; and yet all these patients had been kept very quiet, while this woman was well known to have walked long distances; and her story was, that she had gone on with severe pains and floodings, and yet no abortion has yet occurred.

With regard to the signs of disputed pregnancy, I am as much impressed with the importance of them as yourself; and although the *enlargement* of the body is a fallacious sign—as it may be produced by ovarian disease, as well as many others—yet I cannot but think the *absence* of any *prominence* in a thin person, is a very good reason to doubt the existence of a pregnancy so far advanced as seven months.

With regard to my not entering into explanations of the evidence in the Times, it must be obvious that the columns of a daily paper are not the proper vehicles for such discussions, which, to the public, would appear indecent; besides, I had in my letter nothing to do with the lies of the woman, my purport being to point out the general unfairness of the report—and one more unfair I think could not have been written.

Her statement altogether is one of the most artful and exaggerated I ever before heard of. She reported that the child was coming away piecemeal, and it has turned out a most profitable business to her; and so speedy has been her recovery that people about her neighbourhood are quite persuaded that there has been a great deal of trick about her all along.—I remain, sir,

Yours, &c. ———

Oct. 19, 1845.

P.S.—I forgot to say that I told the magistrates there were no symptoms of miscarriage *when I saw* the woman on the 13th of September.

REMARKS.—While we willingly give our correspondent the opportunity of publishing this explanation, we must confess that it does

not appear to us to place the case in a more satisfactory light. In our remarks on the case, we said—1. That the medical witness had no *legal authority* for examining the female as to her alleged pregnancy. He admits that he went “after much persuasion (!) by a patient,” and told the woman that he was sent by the head-keeper; and so far the report is correct. If he had confined his examination to the alleged personal injuries (although for this he should have had a legal order, or have waited *until the prosecutrix sent for him*), we should not probably have criticised his conduct. Medical men have no right to make themselves *amici curiæ* in this fashion; and had the magistrates sent this case to trial, the witness’s conduct would have been treated with great severity by the counsel for the prosecutrix, and he would probably have received a reprimand from the Court. We have heard of an instance where a medical man was ejected *vi et armis*, by the offended husband of a female under similar circumstances. 2. Our second objection was, that his mode of examination was not sufficient to justify him in giving an opinion respecting pregnancy. The passing the hand over the parietes of the abdomen might enable him to say that the woman had not reached the seventh or eighth month of pregnancy, but our objection was as follows:—“Whether the woman was in the *fourth* or *seventh* month of pregnancy was of little importance, medically speaking; the aggravated assault might have been, in either case, attended with serious results.”* In the report the witness is made to say—“there did not appear to be any child.” “If there had been a child, I must have discovered it.” Here, then, the report of this part of his evidence, of which we find no contradiction in his letter, plainly leads to the inference that the woman was not pregnant; while the act of passing the hand over the parietes of the abdomen would convey no certain information of her condition, supposing her to be in the third or fourth month of gestation. The finding no prominence under these circumstances, amounts to nothing.

It is possible that the prosecutrix may have exaggerated her condition, and that the assault may have been less aggravated than she represented; but that there was some ground for her complaint is proved by the magistrates inflicting a fine, and the assailant being discharged from his situation. We did not publish the case until we had seen a letter from our correspondent in the public journal in which the report first appeared, complaining of its unfairness, followed by one from the reporter asserting its substantial correctness†. We designedly

suppressed the name of the medical witness, and the name of the place where the transaction occurred—our desire being, not to inflict personal injury on him, but to expose what we regard as an illegal interference of medical witnesses between plaintiff and defendant in assault cases.—*ED. GAZ.*]

ANCIENT TEETH.

SIR,—In reply to Dr. Allnatt’s letter in your last number, in which he states that my opinion is at variance with that of Julius Cæsar, as I imagine (from his succeeding remarks), as regards the food of ancient Britons.

Now, sir, I made no mention at all of their food; neither did I write of Britons alone, but as coupled with Romans and Saxons. I stated that I believed the “worn state” of the teeth of ancient Roman, Saxon, and British skulls, was owing to their probably masticating hard substances. I did not state I believed it owing, in the British skulls, to their eating corn, as any one would imagine from the manner in which Dr. A. quotes Cæsar’s Commentaries, where he says that the greater part of the Britons in the midland parts did not sow their lands; although Cæsar states that corn was grown in Britain when he first landed:—“*Nam et frumentum ex agris quotidie in castra conferebant.*” Lib. iv. c. 31. Also, “*Dum ea geruntur legione ex consuetudine una frumentatum missa.*” Lib. iv. c. 32, &c.

If Dr. A. uses an argument against the worn condition of the teeth of ancient Britons, the circumstance of their not eating corn, that is readily refuted; since how can this be applied to the Romans and Saxons, who, we know, were possessed of different kinds of corn? Moreover, in applying this to Britons, Dr. A. must forget that they were in the habit of eating fruit, nuts, roots, &c.,* which would be much more likely to wear the teeth.

Dr. A. refers to a diagram accompanying his original paper; even this tends against his opinion of the incisor teeth of these ancient skulls possessing a naturally flat square crown, as the central dentine of their crowns is apparently removed by decay, as in the sketch accompanying this letter, taken from a jaw of a Saxon skull, exhumed in Kent by the late Mayor of Sandwich, a short time since.

If the teeth were not much worn, the decay of the dentine, would not be visible on the crown of the tooth with the enamel of the tooth undecayed, as is the fact. Dr. A. states that the prominence of the jaws warrants a conclusion that the crowns of the teeth had not been worn away. To this I

* Page 1084.

† Times, Oct. 6.

* Richards’, of Cirencester, Description of Britain.



would say, that this prominence is by no means frequently to be observed in these skulls; besides, when it is present, it cannot affect the wearing of the molars. The circumstance of the molars being so much worn down, supports my opinion that the incisors are also worn, since what would wear the one set of teeth would wear the other, although probably not to so great an extent.

I would also use another argument to support the opinion that incisors existed in these people shaped as at the present day, viz. the anatomical fact (so beautifully described by Professor Quain, in his anatomical lectures at University College), that all parts of the skeleton are shaped so as best to be adapted to their particular uses. The use of the incisors is for cutting, that of the molars for grinding; for which respective purposes their conformation and arrangement were and are so admirably adapted.

I am, sir,

Your obedient servant,

ERNEST P. WILKINS.

5, Liverpool Street, Finsbury Circus,
October, 1845.

Medical Intelligence.

COLLEGE OF CHEMISTRY.

THE Laboratory of the College of Chemistry, under the direction of Professor Hofmann, of the University of Giessen, was opened on Monday, the 27th inst. with *twenty* pupils, the greater number of whom are daily engaged in conducting chemical investigations under the superintendence of the Professor and his assistant. The support which the new Institution has thus already received, is not only a proof that it was required in this

country, but it may be regarded as a guarantee of its success. Under the able direction of Professor Hofmann, the new College of Chemistry is likely to give a powerful impulse to the progress of chemical science in England, and speedily lead to important improvements in our arts and manufactures.

THE AFRICAN FEVER.

FROM information received since our last, we learn that a person engaged to superintend the Kroomen in clearing the hold of the *Eclair*, had been seized with fever (evidently from *fomites*;) but not in a severe form. No official account has been published of the state of those who were afflicted, but we have heard of no more deaths, and we may consider that the course of the disease has been arrested.

As an instance of the absurd ideas which exist relative to contagion and the Quarantine laws, it may be stated that when the Neapolitan Government heard that the *Eclair* had arrived off Portsmouth with the African fever on board, an order was immediately issued to refuse admission to all vessels arriving from any port in England between Portland and Dover, and that vessels arriving from any other English port shall perform twenty-one days' quarantine. Thirteen years ago, when a report was circulated that the Asiatic cholera had appeared in the small and remote island of Achill, on the coast of Ireland, the Neapolitan government enforced the full rigour of quarantine upon the whole commercial navy of Great Britain! Probably there is no place in the Mediterranean which by its absurd, frivolous, and vexatious restrictions, furnishes better arguments against the maintenance of quarantine laws, than Naples. Fear and superstition are allowed to have full sway in relation to all matters pertaining to medicine. But

little is to be expected from the common-sense of a country, where the burning of wax tapers before the gaudy images of saints, and the application of relics to diseased limbs, are made prominent methods of treatment even in respect to the inmates of public hospitals.

THE YELLOW FEVER.

THE yellow fever is stated to have made its appearance at Malta, in the 42d regiment, stationed in that island. It is also said to have broken out in a vessel in the port. The account, although it has the appearance of being authentic, requires confirmation: nevertheless, the Neapolitan Government, with its usual disregard of modern medical doctrines on the subject of contagion, has issued an order, that all vessels from Malta should undergo twenty-one days' quarantine.

THE POTATO DISEASE.

THE premature decay which has taken place in the potato crop, has induced the Government to appoint a scientific Commission to inquire into the subject in Ireland. Dr. Kane, Dr. Lyon Playfair, and Prof. Lindley, have investigated the matter, and have come to conclusions at which most persons had long since arrived: 1. That the cause of the decay has been a cold and wet summer. 2. That to prevent the extension of the decay, the potatoes should be dug up, allowed to dry, and then kept in a dry place. 3. That decayed potatoes may by contact or proximity affect those which are healthy,—a fact well known in relation to putrefaction in animal substances. Many tubers, however, which are to all appearance sound, are probably partly affected, and the water in which such tubers were boiled, has been observed to have a strong odour analogous to sulphuretted hydrogen, although the potatoes were wholesome and fit for food.

ROYAL COLLEGE OF SURGEONS.

MR. J. F. SOUTH has been appointed to the Professorship of Anatomy and Surgery at the Royal College of Surgeons London, vacated by Mr. Bransby B. Cooper.

QUEEN'S COLLEGE, BIRMINGHAM.

LORD LYTTLETON was installed in the office of Principal of this College on the 28th inst., in the room of Dr. Johnstone.

THE UNIVERSITY OF EDINBURGH AND THE FOURTH MEDICAL REFORM BILL.

PROFESSOR SYME has addressed a letter to Sir James Graham on the injury which will probably be done to the University of Edinburgh by the passing of the last Medical Reform Bill in its present shape. The granting of licenses to practise, will, under the new measure, be withdrawn from the University, and devolve upon the Royal College of Physicians and Surgeons. A

similar complaint was made by the Apothecaries' Society in England, and the Royal College of Physicians and Surgeons of Glasgow. There can, we think, be no doubt that it will be greatly to the benefit of the profession to reduce the number of licensing bodies as much as possible; some injury may be done by this, but then, as the Times justly observes, "in any remodelling of the medical profession which shall admit all Scotch licentiates to an equality of advantages with their southern brethren, such changes must be made as will inevitably, unless a most unfair distinction be made in favour of the Scotch universities, bring the Scotch and English schools to a nearer level of competition than they have hitherto maintained; and if practitioners are to be freed from the barriers of nationality which have hitherto separated them, some of the accidental local advantages which have fallen to the share of particular local institutions will, necessarily at the same time be interfered with. To translate the petitions from Scotland in favour of Sir James Graham's measure and Professor Syme's pamphlet into a few words, we may render them thus—'Give us a share of your good things, but leave us in the full possession of all which we now enjoy.' This is the exposition of a very natural feeling in any part of the world, to say nothing of North Britain. On the other hand, the different English medical and surgical institutions might, without any greater exhibition of selfishness, retort, 'If you are to have a share of our good things, we ought to have a *quid pro quo*.'"

EDINBURGH ROYAL INFIRMARY.

DR. J. R. CORMACK has resigned the office of Physician to the Royal Infirmary. The reason for this step is, that Dr. Cormack was not allowed upon his application to deliver clinical lectures, or private clinical lessons to a certain number of pupils. It seems that this has hitherto been the privilege of the senior physician. Without entering into the merits of the dispute between Dr. Cormack and the Managers, it appears to us that his request was a reasonable one; and that all physicians attached to a hospital should at their option be allowed to impart instruction in any way they please. We believe that no such restrictions exist in the large hospitals of this metropolis.

OBITUARY.

SIR MATTHEW TIERNEY.

THIS eminent physician, who was one of the oldest inhabitants of Brighton, died on the 28th inst. at his residence, after a short illness arising from an attack of the gout. The deceased was physician in ordinary to George IV., and also to William IV., and the Royal household when in Brighton. He

was born in November 1776, and was consequently in his 69th year. He was created a baronet in 1818, and obtained a second patent in 1834, with remainder to his brother. The deceased was appointed a Knight Commander of the Royal Guelphic Order of Hanover on the 7th of May, 1831.—*Times*.

DR. SKIRVING.

DR. SKIRVING, who had practised for many years at Nice, died there on the 26th ult. from a painful disease of the spine, which had almost confined him to the house for the last ten years. Dr. Skirving was a kind and judicious physician, as well as a man of most amiable manners. He possessed at once the confidence and esteem of his patients.

Selections from Journals.

TOXICOLOGY.

EFFECTS OF POISONOUS DOSES OF HYDROCYANIC ACID UPON ANIMALS AFFECTED WITH DISEASE OF THE NERVOUS CENTRES.

IN a recent number of the *Veterinarian*, Mr. W. A. Cherry has published some experiments with prussic acid upon horses, the results of which suggest one or two interesting physiological and medico-legal inferences. His first set of experiments was tried upon five horses, which were not affected with any organic disease, or lesion of the sensorium or nervous system, which could be supposed to have any influence upon the action of a poisonous agent. In these five cases the results were almost precisely similar. There was no perceptible difference in the effect of the poison, or in the period of its action, whether it was absorbed from the mouth or fauces, or as vapour from the surface of the bronchial tubes, or was injected (in the form of Scheele's acid) into the jugular vein. Six drachms (of Scheele's medicinal strength) was the quantity usually introduced into the system: the author has also given one ounce, but, by the larger quantity, he has not been able to trace any increased action. He therefore concludes that, for horses, six drachms is a full dose to produce death under ordinary states of health. The mere size of frame of the animal appears to have little or no effect on the quantity required to produce death. Mr. Cherry is, however, disposed to believe that the high development of sensorial power will be found to have an influence. From the time of administration to the greatest intensity of effect, he has found to vary from not less than *ten* and not *more* than twelve or thirteen minutes. Thence, to the cessation of all vital functions, an equal period

elapses, so that the actual time which is requisite to destroy life may be concluded to be not less than twenty, or more than twenty-six minutes. This he has found in all the cases in which he has administered it to horses in ordinary health. The above remarks render the following case very interesting. A small horse, with defective vision, while going at a fast trot, came in contact with the wheel of a cart; knocking down the horse, which lay insensible. On seeing the animal, about an hour after the accident, he was lying on the side; pupils much dilated; stertorous breathing; power and sensation impaired in the fore, and lost in the hinder extremities. The symptoms were so decidedly those of fatal injury to the base of the brain, that the narrator proposed to destroy the animal, and proceeded to inject into the jugular vein six drachms of hydrocyanic acid, the effect of which was to restore the lost vital powers. He gained both sensibility and power in the hinder extremities; the eye lost its comatose appearance, with the contractility of the pupils; the pulse, which had been almost imperceptible, rose; the breathing increased, but not very much beyond natural respiration. These symptoms remained the same for half an hour, when it being imperative to put an end to the animal's life, one ounce more was given by the mouth. This certainly increased the effect, but it did not destroy life. After waiting about twenty minutes longer, Mr. Cherry gave a *third* ounce, which at the end of another half-hour did not produce death, and there was every probability of the animal recovering from the poison. He was at last obliged to divide the spinal cord between the first and second cervical vertebræ. Thus, in one hour and twenty minutes, this little animal took *two ounces and three quarters* of the most subtle poison known, without destroying life, and with every probability of recovering from its effects. Upon examining the brain, extravasation was found at the base of the cerebrum and medulla oblongata. In another horse, which had for some time suffered from extensive disease of the cerebrum, and upper part of the medulla oblongata, death was produced in about twenty minutes by six drachms of the acid, four of which were thrown into the jugular vein, the other two being poured into the nostril eight minutes afterwards. That death was produced so much more quickly in this case than in any other he has met with, the author is disposed to attribute to two causes—first, the advanced state of disease, which might be increased in its effect by a larger flow of blood to the brain, and secondly, by the administration of the poison at two periods. How far the case of injury to the brain may show the good that might

be derived from hydrocyanic acid given as a remedial agent, in similar cases, is matter for further consideration and observation. It has often recurred to the author that the results there detailed might be turned to good account in inquiries of that nature.—*Veterinarian*, 1845.

[REMARKS.—It is, of course, well known that the rapidity with which poisons act is in great measure controlled, either by the power or the torpidity of the nervous system, by the force or the depression of the circulation, and the activity or the sluggishness of the absorbents. The difficulty with which narcotics are made to act upon persons suffering from tetanus, delirium tremens, &c. and the power of the system in cases of sthenic pneumonia in resisting the usual effects of tartar emetic and calomel, are familiar to every one.

But, in a medico-legal point of view, extreme cases are of great value, as shewing that under certain circumstances, where either the powers of the sensorium are unusually great, or where they have been rendered by any kind of disease or injury sluggish and unimpressible, the action of a very powerful narcotic poison may be very considerably delayed: while, under depressed states of the vital powers, and unsound conditions of the circulatory apparatus, ordinary or small poisonous doses may cause death with unusual rapidity. There are a good many recorded facts which lead to the belief that the degree of rapidity with which prussic acid causes death in the human subject, and the symptoms which attend the fatal event, are in great measure controlled by the condition of the nervous system of the individual, a condition which may not be at all in relation to the degree of bodily development, or the previous apparent condition of health. There can be no doubt that the existence of certain forms of cerebral disease, as well as the presence of any extensive lesions in the heart, lungs, or great vessels, will frequently determine a fatal issue in cases of poisoning, (whether the noxious matter be taken into the stomach or applied in a gaseous form), where recovery might otherwise have taken place. It is also necessary to remember, that persons to whom poison is administered, may be, at the same time, suffering from advanced disease either of the brain or heart: in such cases death may be attended rather with an aggravation of the cerebral or cardiac symptoms, than with the signs usually characteristic of poisoning by the matter administered; hence, in cases of suspected poisoning, where, upon post-mortem examination, severe and long-standing lesions of the brain or cardiac apparatus are discovered, the necessity of not at once deciding that death has occurred

from natural causes, but of still pursuing the investigation so far as to be able to decide, with something like certainty, whether a deleterious matter has or has not been taken into the system.—*ED. GAZ.*]

SURGERY.

SURGERY OF CICATRICES.

MR. THOMAS describes the process of reparation after destruction of the integument and cellular tissue, as consisting of two actions combined,—the secretion of plastic lymph, and contraction of the adjacent cellular tissue, which, from its beautiful extensibility, contributes so much to the healing process, although it necessarily causes, unless carefully watched, deformity, more especially after burns or sloughs. Comparing the natural cellular tissue with the substitute, he mentions the great disposition to contraction after any attempt to separate the bridge, continuing for a long period, but that the disposition would eventually cease. He relates the case of a little girl, aged 16, who was admitted into the Sheffield Infirmary, December 13th, 1843, suffering from extensive mercurial phagedena of the mouth, implicating the whole of the mucous membrane of each cheek, from the angles of the mouth to the last molar tooth, affecting the alveolar processes of the molar and bicuspid teeth on either side. The cheek was swollen and rather tense; the mouth most offensive, and rigidly closed, by the early contractions of the mucous membrane. Six months previously she had laboured under scarlatina and brain fever, for which she was salivated, and this sloughing had supervened. During three months after her admission, portions of the alveolar process of the lower jaw continued to be detached, but by the end of April the whole ulcerated surface was healed, but the mouth was most closely fixed, (the teeth overlapping their opponents) by a broad band, almost ligamentous in its resistance, extending from the inferior surface of the lower gum to the superior surface of the upper.

June 8th, the ligamentous bands were freely divided, and a silver gag was introduced between the incisions, (teeth?) separating them about an inch.

Up to September the gag was almost constantly worn; it was then ordered to be removed for six hours daily. In November there was gradual improvement, and the gag was ordered to be worn only for an hour night and morning. In the following February, the ligamentous bands were found to be stretched exactly to the point to which the mouth was gagged, after patient continuance of treatment for six months,—an instance of the great necessity of keeping up mechanical extension, not

only during the progress of cicatrization, but for months afterwards, both in such cases as this, and in all others, in whatever part of the body the lesion may occur.—*Provincial Med. and Surg. Journal.*

CHRONIC PAINFUL SWELLING OF THE
LOWER EXTREMITY OF THE RECTUM
—SUPERFICIAL FISSURE—TREATMENT
BY MATICO—CURE.

J. WALSH, aged 30, a servant, admitted into hospital, August 24th, 1845.

He states that he is suffering severely from "piles," under which he has laboured for a length of time; latterly, however, within the last month the pains have become very excruciating, being greatly aggravated when he goes to stool. He has a most anxious, distressed expression of countenance, avers that he has not closed his eyes in sleep for several nights, and earnestly implores that something may be speedily done to relieve him. Upon examination several large, swollen, and intensely painful tumors, of a purple hue, are found to surround the anus; there are two or three fissures with the usual cracked edges and ulcerated bases, and the opposed surfaces of two of the tumors have become red and denuded of cuticle. Upon being desired to force down, the mucous membrane of the gut is protruded of a highly red and inflamed appearance, and presenting very much the characters of "vascular tumor;" bowels generally confined; has never had much hæmorrhage from them.

August 24th.—Electuarius Lenitivum, Nocte, maneqe, ad alvi solutionem. R Folior. Piper. Angustifol. drachmas duas, Aquæ Puræ, uncias sex, Coque s. a. fiat. lotio: a piece of lint moistened with the lotion, to be kept constantly applied, internally and externally. 26th.—The tumors are smaller, and much less inflamed. Continue. 30th.—Tumors have become quite flaccid, and of a natural colour; the pain has entirely left him, and he sleeps perfectly well at night. The application was continued for some further time, and he then left the hospital perfectly well.—*Dublin Hospital Gazette.*

PATHOLOGY.

ON THE ORIGIN OF THE FIRM BODIES
FOUND IN THE CAVITIES OF SYNOVIAL
MEMBRANES. BY PROF. BIDDER.

DR. BIDDER offers a new theory in regard to the origin of the firm bodies which are occasionally met with in the cavities of synovial membranes. He was led to form this opinion from an examination which he made of a substance evacuated from the knee-joint of a patient, who had for a considerable

time been suffering from a swelling of the joint, and symptoms indicating the presence of a foreign body therein; a natural opening formed itself, through which a granular substance was evacuated; the individual granules of which this substance was composed were uniform in size and general characters; they were flattened and oval, about a line and a half in length, three-fourths of a line in breadth, and half a line in thickness; they were of a yellowish-white colour, presented no trace of a pedicle, and were held together in heaps of various sizes by a very small quantity of a greasy transparent fluid. They were highly elastic, and when cut into presented both to the naked eye and beneath the microscope a perfectly uniform surface, there being no appearance of laminæ, of a nucleus, of a surrounding capsule, or of any fibro-cellular tissue: they presented none of the characters of epithelial cells or of oval fat-cells. Neither ether nor acetic acid detected in them any trace of fat; they were unaffected by water, but by the action of alcohol were shrivelled up. From these facts it appeared to Bidder that the explanation offered by Meckel and Hyrtl respecting the formation of these bodies could not be regarded as the only one: these anatomists attributed their formation to pieces of fat, which are deposited on the outer surface of the synovial membrane, through which they make their way and pass into the cavity of the joint, where they lie free, and the synovial fluid of which they take up and convert into fat; but it seemed to Bidder very probable, that the epithelial cells were in his case, and so might be in others, the cause immediately concerned in the formation of these bodies; that the cells, under the influence of increased vascularity of the synovial membrane, are abundantly thrown off and accumulate in the cavity of the joint, where by a process of endosmosis, or in virtue of their own peculiar vitality, they increase in size by abstracting nutritive material from the synovial fluid in which they are immersed: this view would seem to be especially favoured by the large quantity of albumen which the little bodies contained, and by the uniform size which they all presented. Bidder adds, that Dupuytren's account of the hydatid-like way in which these bodies are formed should not be unconditionally rejected, neither should Meckel's description of their mode of formation in serous membranes.—*Oester. Medecin. Wochenschrift.*

PATHOLOGICAL ANATOMY OF ST UMPs.

IN March last Mr. Adams related to the Pathological Society of Dublin the appearances which he had observed in dissecting the stump of a man whose thigh was amputated ten years previously to his decease.

The operation had been performed by a circular incision; the man (a lunatic), æt. 34 or 44, had never worn a wooden leg, but was supported by crutches to move about. Mr. Adams and Mr. Smith examined the condition of the various structures of the part. Its exterior presented nothing remarkable; the muscles were much attenuated, and adipose tissue, for the most part, occupied the place of muscular fibre. The bone, when denuded of all the soft parts, was found to present a remarkable example of atrophied bone: it is so light that it floats on water, and its tissue is soft, and it yields to the pressure of the fingers. The portion of the shaft of the bone which remains, being about a third part of its length, is altered somewhat in form from its normal state; it is a little more arched forward, and flattened laterally. The lower extremity is rounded off, and the termination of the medullary canal is (as it were), hermetically closed by a compact bony layer. The investing cartilage of the head of the bone was found thin and imperfect, and the cervix of the femur was so much shortened that the neck can scarcely be said, in this specimen, to exist posteriorly. The space between the corona of the head of the femur and the inter-trochanteric line posteriorly, is so much diminished as to be converted into a deep fissure, giving to the specimen the aspect of a fracture which had been united by bone. But the history of the patient, and the appearance of the bone, when a section of it was made, convinced these gentlemen that the patient had never met with a fracture of the femur. The section exhibits the usual appearance the interior of the neck presents when interstitial absorption of this portion of the bone takes place, either as the effect of age, or atrophy from any other cause. The cancellated tissue is observed in the whole of this section to be much rarefied, and the compact structure, or shell of the head, neck, and shaft, are reduced to the thinness of paper. Mr. Adams remarked, however, that the bony basis of all stumps did not undergo this change; such may, very probably, be the case in all stumps which have not been actively exercised, particularly in cases where artificial limbs have not been substituted for the limb removed; he had found the radius and ulna in a stump he had dissected preternaturally heavy, and in this case the bones, far from becoming atrophied, had undergone an opposite change, their extremities having united below into a complete loop or arch, the convexity of which is downwards. In one of the two instances of this remarkable union of the bones, of which figures are given by Mr. Adams, amputation had been performed within two inches of the elbow-joint; in the other it was near the wrist-joint. Mr. A. was not aware that this

provision of nature to give bony firmness to stumps had been attended to by any writer except the Sandiforts, who give figures of this appearance of the bones formed after amputation below the knee, in the 4th volume of the *Museum Anatomicum*.

The arteries and veins in this stump were found, by Mr. Adams, to terminate in cul de sacs of somewhat conical form, and rounded off at their extremities. A small reddish plug of organised lymph fortified the termination of the artery. The interior of the artery had its lining membrane corrugated transversely. The nerves presented an appearance of relaxation or want of tension; the fibres of the nerves were more or less corrugated transversely, as to their length: the nerves were, as is usual in stumps, terminated near the cicatrix at the end of the stump by round bulbous extremities, each as large as a nutmeg; when sections of these bulbous extremities were made they presented a fibrous appearance, like an ordinary nervous ganglion—an appearance noticed by Cruveilhier, Langstaff, and Smith, and well delineated by the former in Liv. 6, Plate 5, Fig. 4. The termination of the artery and veins were, in Cruveilhier's case, connected with this bulbous extremity of the nerve, and the bulb itself was connected by a fibrous structure with the cicatrix. These bulbous terminations of nerves of stumps are believed to exist always, and, indeed, can be readily felt through the integuments of the living or dead. In certain cases where the stump becomes conical, and is affected with frequent spasms, Sir A. Cooper has advised that these bulbous extremities of the nerves should be cut out. Should any one ever perform such an operation on his patient, he should take care of hæmorrhage, and recollect the point so well delineated in Cruveilhier's plate, namely, the close connection of the cul de sacs of the artery and veins with the nervous bulb or ganglion.—*Dublin Hospital Gazette*.

SPECIAL PATHOLOGY.

CASE OF FUNGUS HÆMATODES OF THE CENTRE BLADDER. BY MR. F. A. BULLEY.

J. P., a labourer, aged 40, habits dissolute, June 5th, 1844, had been ill about two months; found him in bed, complaining of great pain in the scrotum, which was greatly distended with fluid, diffused through the cellular membrane. The febrile symptoms appeared of a hectic character. In the situation of the bladder, was a very firm elastic swelling; in the leg also was a soft elastic swelling, which had latterly become very painful, but the greatest pain was in the scrotum and groin; both legs were slightly anasarous; the cellular membrane

around the anus was swelled and anasarous also; urine passed latterly in small quantities, and invariably mixed with blood; complexion sallow. In the commencement of his illness, he suffered from an obstinate diarrhoea, which continued throughout.

Examination, twenty-four hours after death.—On opening the bladder, it was found partially distended with urine, containing a number of small light-coloured clots of coagulated blood. Posteriorly in the bladder, was a obliterated medullary tumor, as large as a middle sized cocoa-nut, formed apparently between the peritoneum covering the posterior part of the bladder and its muscular coat, extending from the fundus downwards to within three quarters of an inch of the prostate gland. At this part it pressed upon the rectum to a great extent, and was thus probably the cause of diarrhoea, and of the anasarous condition of the parts along the anus. On cutting through the tumor, three different stages of disease presented themselves; at the upper portion the medullary mass was in a state of softening, easily broken down, a quantity of pus seemingly diffused through its substance; below this, the section was precisely similar to healthy brain, wanting, however, the bloody points. There was here no approach to softening; below, the tumor was of a firmer consistence, fibrous, and almost resembling the texture of scirrhus, intersected by membranous septa. The terminations of the ureters were not discernible. These canals were so pressed upon in their lower half as to be much contracted; above they were dilated. The left kidney was intersected by this medullary deposit; the right was not removed for examination. A spot, about two and a half inches in diameter, was found in the left lobe of the liver of the same character; the lungs were studded with minute medullary deposit; the heart small, flabby, and pale. In the left auricle was a large piece of fibrin, having in its centre a mass of medullary matter, similar to that found in other parts of the body.—*Mr. Walford's Retrospective Address; Provincial Med. and Surg. Journal.*

MIDWIFERY.

CASE OF QUADRUPLE BIRTH, ALL THE INFANTS BEING ALIVE.

DR. WILLIAM CAMPBELL, of Edinburgh, attended, in her seventh pregnancy, a woman, æt. 32, of a sound constitution, vigorous habit of body, married to a journeyman tanner, and the mother of four male and two female children, all of which were uniparous, and produced after easy natural labours. In two hours and a half after labour commenced, two male children were born. After the birth of the second the pains

ceased, and continued suspended for six hours, when they recurred, and, in half an hour, two female infants were expelled,—the whole process occupying only nine hours. The membranes of all the ova were ruptured artificially, and the proportion of the liquor amnii discharged by each was as copious as is usually observed where the uterus contains but one ovum. There was no hæmorrhage before, during, or after delivery. The placenta, all of which were expelled almost immediately after the birth of the fourth infant, equalled, in the aggregate, the placenta of three uniparous fœtuses. Three of them formed but one cake, and the fourth was distinct from these, but connected to them by a long process of the membranes. Each of the umbilical cords was as thick as we usually find the funis of the uniparous fœtus; and in one of them there was but a single artery, which was large. The first male child presented the breech, and the second a foot; and the first female infant presented a foot, and the second the breech. The weight of the first male child was four pounds six ounces avoirdupois, and its length eighteen inches; and the weight of the second was four pounds five ounces and a half; the first female infant weighed four pounds seven ounces and a half, and its length was eighteen inches; and the second weighed four pounds three ounces, and in length measured seventeen inches. At the close of the sixth month of this woman's pregnancy, the lower limbs became œdematous to a great degree; there appeared above the pubes a circumscribed swelling, the size of a child's head, which caused much uneasiness; but this subsided shortly after delivery. During the last month of her pregnancy she was greatly distressed with dyspnoea; this was ascribed to the great encroachment of the gravid uterus upon the thorax. She quickened about the close of the fourth month; and foetal movement was not more troublesome at any period of the present than in her former pregnancies. Her size in the latter months of gestation became enormous, greatly exceeding that in any of her former gestations. The husband is three months younger than his wife, and appears to be phthisical. They subsist chiefly on fish, with only occasional repasts of animal food and vegetables. This woman's mother had eleven single births, and once twins; and her maternal aunt had twelve single births, and once twins. One of her husband's relations had plural births. The four infants, the subjects of the report, were alive and thriving thirteen days after birth. Dr. Campbell adduces many other remarkable instances of plural births from various sources.—*Abridged from the Northern Journal of Medicine.*

A woman in Galicia, the wife of a pea-

sant, produced four male children at a birth. She was æt. 35, of strong-built frame and sanguine temperament; she had menstruated regularly from her 22d year, and was married to her present husband at the age of 24; between which period and her 35th year she had produced three boys and one girl. The husband was æt. 36, emaciated and cachectic. The children all presented the feet, and were born at intervals of half hours, the fourth excepted, which was born a quarter of an hour after the third, and was in a state of suspended animation. In each amniotic sac were about two pounds of liquor amnii; each placenta weighed about three-quarters of a pound; and each foetus between three and four pounds, and varied in length from fifteen to seventeen inches. The mother recovered perfectly in five days. All the children died within six days from their birth, two from some unknown cause, and the remaining two from neglect.—*Oester Med. Wochensh.*, No. 7, 1844; and *Northern Journal of Medicine*.

Some time since, the Fife Herald announced the christening, at Anstruther, of a woman's four children "which were all born within a few minutes of each other," about two months before. The children were stated to be in good health.

EMPHYSEMA OCCURRING IN CHILD-BIRTH.

THE subject of this case, which occurred in the practice of Mr. Francis Davis, was a delicate lady, in labour with her first child. The labour had continued about fifty hours, when Mr. D. found the patient straining violently with the idea of soon finishing the labour. The labour went on favourably, and delivery took place in nine hours. The hemorrhage was very considerable, and some difficulty was found in restraining it. About a quarter of an hour after the placenta had been discharged, she complained of great difficulty of breathing, and Mr. Davis was astonished at seeing her face, throat, and breast, swollen to three times their natural size, and of a bright scarlet colour. She also complained of great pain in the throat, about two inches above the sternum, and the difficulty of breathing seemed rapidly to increase. On putting his hand on the throat, Mr. D. very distinctly felt a crackling, and could easily hear a peculiar noise, and upon subsequent examination he was satisfied that she had ruptured her trachea by her injudicious straining. Pulse 110: venesection to thirty ounces: two large basins of blood were lost before the breathing was relieved. In about twelve hours, the pain in the throat and difficulty of breathing having much increased, she was again bled to sixteen ounces, with much relief. On the next day the swelling had almost disappeared, she breathed perfectly well, and could draw

a full inspiration without the slightest difficulty. From this time she became convalescent, and her recovery was rapid.—*Prov. Med. and Surg. Journal*.

[We believe that emphysema has been known to occur under other circumstances of excessively forcible and prolonged action of the respiratory muscles,—as during the violent contractions attendant upon the spasms of tetanus. A case, very similar to the above, is recorded by Mr. W. Balfour, in the seventh volume of the *Edinburgh Medical and Surgical Journal*. This gentleman was sent for in haste to attend a woman, ætat. 25, in labour with her first child; the cause of the attendant's apprehensions being a swelling of the face that had come on instantaneously. It was the woman's first labour, and she acted on the belief that her own *voluntary* efforts were to propel the child. Accordingly she made the most gigantic exertions. Mr. B.'s assurances quieted the patient, and she was shortly afterwards delivered. Mr. Balfour then left; but was shortly afterwards sent for, and he now found the patient in a state of great unrest, with the countenance much swollen, especially the upper eyelids. Pointing to the bronchia, she complained of a sense of suffocation, of swelling about the neck, and soreness on the right side of the thorax, towards the upper and back part; the right arm, shoulder, neck, and face, exhibited unequivocal symptoms of emphysema. The eyelids were punctured, and so much air was extricated from them that the patient could, in a short time, look up. On the following day the tumefaction of the face had not increased, and the sense of suffocation had abated. From this time the emphysema rapidly diminished, and on the twelfth day after delivery the patient was enabled to leave Edinburgh. This was regarded by the author as a case of rupture of the right lung; the emphysema more probably arose from separation of the rings of the bronchus on that side.]

LUTE FOR STICKING LABELS OR SECURING JOININGS OF TUBES AND RETORTS.

ISINGLASS dissolved to saturation in strong acetic acid so strong that it sets into a solid on cooling. A little alcohol may be added to prevent decomposition. It should be kept in well-stopped bottles. To make use of it, it is warmed on a spatula or in a cup, and then spread on paper; the paper should be cut in slips and dipped in water before use. The adhesion of bladder is promoted by covering it with a layer of albumen.—*Berthier*.

Lectures.

CLINICAL LECTURES

Delivered at University College Hospital,

By DR. C. J. B. WILLIAMS, F.R.S. &c.

[Taken in Short-Hand by our own Reporter, and revised by the Professor himself.]

LECTURE VIII.—July 3, 1845.

Case of diseased liver, causing hæmatemesis and subsequent dropsy—History—Diagnosis—Treatment by paracentesis abdominis—Death—Post-mortem examination, with remarks—On the state of the chest, and signs during life—Cicatrix of the stomach—Cacoplastic induration of the liver—Microscopic appearances—Pathological inferences.

Cases of fits from affections of the brain—Attacks of insensibility from cerebral congestion, intermediate between apoplexy and epilepsy; distinction from complete apoplexy—Treatment by depletion and evacuations.

THERE has been a fatal case which we have briefly to notice, but I shall not dwell long upon it, because in the main features it is like other cases to which we have had to refer,—for instance, that of Bucknell, being a case of dropsy with diseased liver.

“M. Murphy, æt. 50, admitted on Saturday, June 29; of short stature, bilious temperament, and pallid sallow complexion. He was formerly an ironmonger's porter, but the last four years has been a bricklayer's labourer. He is married, and has one child. Habits and modes of life have not been regular; has been accustomed to drink spirituous liquors to excess; latterly has been more temperate, only occasionally taking a little gin and water. The last fifteen months he has been short of food. His general state of health has been good. In the year 1821 he was attacked with a fever like that of which his father died. He was ill six or seven weeks; was insensible some part of the time.

“About three years ago he first perceived, at the pit of the stomach, a little hard substance, which gradually increased in size, and began to be painful two years after. Soon after its first appearance he went to the Middlesex Hospital, had ointment rubbed upon the part, and took medicine, without any benefit. The tumor gradually increased. Since that, he has been seen by several medical men, and latterly attended at a dispensary for about two months, without benefit. Last September, whilst walking in the street, he suddenly

felt a sensation of weight in the stomach, and nausea, which was quickly followed by vomiting of dark-coloured blood,—he states as much as two quarts. Since that time he has frequently thrown up a small quantity, and passed blood by stool. About two months ago, he states, that he again vomited blood, as much as three quarts, and again passed a good deal by stool. He had medicine for this from the dispensary, and also took the elixir of vitriol. The abdomen began to swell only four weeks ago, and has been increasing rapidly up to the present size.”

Let me just anticipate the rest of the history, to save time, by commenting upon this part. The case is one, as you know, of indurated liver, and ultimately terminating in dropsy. We have the signs of induration of liver in that tumor which was observed as much as three years ago; and in September last an effect of this induration began to ensue, in its causing hæmorrhage into the intestinal canal,—part being vomited, and part evacuated backwards. This hæmorrhage recurred from time to time, until about a month ago, when it ceased, and the abdomen began to swell. First of all, the effect of obstruction to the circulation through the liver was hæmorrhage; and when that ceased there followed another consequence, that which is very often an ulterior consequence—dropsy. The blood becoming poorer in its quality, the effusion was no longer that of blood on the intestinal mucous surface, but of serum on the peritoneal surface.

“Shortly afterwards the feet and legs began to swell. He now suffers from extreme prostration of strength. The parts of the body not oedematous are very much emaciated. The lower extremities are very much distended, pit on pressure, and are painful. The scrotum and cellular tissue of the penis are also distended. Intellect quite clear; sleeps badly; no pain or giddiness in the head; face collapsed, of a pale yellowish colour; countenance anxious; conjunctiva of the eyes of a yellowish cast. He has pain and weakness of the back, particularly at the lower part. The chest is distorted; the sternum depressed, and the anterior lateral portion of the ribs elevated. Respiration hurried and short; voice reduced to a whisper; cough troublesome, accompanied by thick tenacious opaque expectoration. On examining the chest, there was a cracked-pot sound on percussion under the left clavicle.” Observe, that although this is often indicative of a cavity, it is not always so; it is often heard merely from the motion of the mucus in the large air tubes. “The breath-sound is puerile under both clavicles, but more so under the left than the right. There is sub-crepitant rhonchus

at the lower part of the left lung behind; tubular breath-sound at the upper part of both lungs behind, chiefly on the right side, and there is more dulness in the right upper back than in the left. The sounds of the heart healthy. Pulse 100, very feeble. Mouth dry; tongue flabby, and glazed in the centre; appetite very bad; thirst; no nausea or vomiting. The abdomen is very much distended, measuring at the most prominent part 43 inches in circumference: there is distension and fluctuation in every part. The fluid appears to encroach very much on the thoracic cavity." I pointed that out at the time, as the possible source of some of those physical signs which we found in the chest, namely, the tubular breathing; nevertheless, I expected, from the cough, that there was some other disease in the chest besides that arising from mere displacement. "The superficial veins of the abdomen are enlarged. The bowels are open; faeces scanty. The liver cannot be felt"—owing to the highly distended state of the abdomen. The walls being separated so far from the surface of the liver, it could not be reached; therefore we had no opportunity of investigating the condition of that organ. "The urine is scanty and high coloured."

Now, as to the nature of this case, I mentioned at the bedside that the character of the case up to a certain point was very obvious. It became clear that the dropsy in the abdomen must arise from an obstruction of the blood-vessels going from the belly; and inasmuch as we know that it is in most cases connected with the liver, there was good reason for suspecting that there was disease of that organ. This suspicion was confirmed by the jaundiced tinge of the conjunctiva and skin.

Then the question arose, what was the disease of the liver? We have seen several times that cirrhosis—indurated disease of the liver—is capable of producing such a condition, and I entertained the idea that it might be so here. But there was a remarkable pallidity and emaciation about him, which led me to think it possible that there might be carcinoma; and the supposition was rather strengthened by the sudden increase of the swelling of the abdomen. At that time I had not learnt the history of the case, and I did not know the fact, that before the dropsical swelling came on he had lost a large quantity of blood by vomiting and stool. Now that I know it, I think that it is the best explanation of the sudden occurrence of dropsy upon the cessation of the hæmorrhage. That had been the means of relief to the vessels before obstructed, and the cessation of that relief led to the sudden development of dropsy. Observe, that it was the rapid emaciation and sallow pal-

lidity which made me suspect carcinoma; not the dropsy. I have seen, and so have you, many cases of cancerous livers, in which there has been little or no dropsy. The same remark applies to jaundice. The carcinomatous tumors have not so interfered with the circulation through the liver, or the excretion of bile, as to produce these states. When dropsy occurs in connection with carcinoma, it depends on the accidental circumstance of the tumors being so placed as to interfere with the great portal vessels, or the great hepatic vein, or the vena cava ascendens.

With regard to treatment, I had no expectation of this patient living long under any method that might be adopted, so reduced and weak was he, and so much did it appear that his lungs were suffering besides his abdomen.

"On the Monday he was given blue pill and extract of conium." The report on the 30th June is, "No better; cough very troublesome at night; expectoration tenacious and rather rusty; pulse very weak; and the abdomen is more tense. The urine acid; only 18 ounces a day; specific gravity 1012; slight excess of phosphates, and a trace of albumen." No indication of any considerable disease in the kidneys.

Now he was clearly in that state in which some decided measure was necessary to keep him alive; and the question was, whether continuing internal medicine would give him a chance of living longer? I thought not. I thought that, on the whole, there was such an amount of distension of the abdomen, and pressure on the lungs, from the liquid in the abdomen, that the only chance of relief was by tapping; but I had great doubts whether he could bear it; so much so, that I spoke to Mr. Morton, who performed the operation, to interrupt it if he appeared faint; and I ordered him three ounces of gin, and good diet, with the idea of enabling him to sustain it better. As usual in these cases, I ordered him the third of a grain of hydrochlorate of morphia after the operation.

He bore the operation very fairly: thirty-one pints were drawn off, and he expressed himself much relieved after it. He seemed to be comfortable in the evening, breathing more easily; and now a hard substance could be felt through the walls, at the upper part of the abdomen,—this being obviously the liver. If I could have examined him then, I could have told whether it was carcinoma of the liver, or whether he was affected with cirrhosis. A very slight examination, when the walls are flaccid, is enough to determine that point, the tumor of carcinoma being characteristic, and quite distinct from cirrhosis.

"He took the morphia at half-past 9 o'clock, and soon began to dose. At a

quarter to 12 his breathing was noisy, and very slow, only about six or seven a minute. There were mucous sonorous rhonchi throughout the whole chest." The breathing, which had been oppressed in the morning, became much more so. "The pupils contracted to the size of a pin's head; pulse was regular and moderately full; the feet and legs, however, were rather cold; the rest of the surface warm and moist. A stimulant was given, but it seemed that he was in an extreme state, he could not swallow; some passed down the trachea, occasioning coughing, and tended to accelerate death rather than otherwise. The pulse became gradually imperceptible, and he sank at half-past 12."

On the subject of his death, I think we must not pass over the effect of the morphia; for it appears the symptoms he presented were those of the influence of the drug. I think it likely that in the feeble state in which he was, particularly with his embarrassment of breathing, that that dose of morphia, small as it was, embarrassed the breathing so much more as to hasten his death. I am in the habit of giving an opiate to ensure sleep after the excitement of operations generally, and particularly after tapping; for such excitement is very apt to produce excessive action of the heart, followed by faintness and sinking; and it is a great object under such circumstances to procure sleep. On looking back to other cases which I have noticed lately, I find in that of Kelly the same dose was exhibited with happy results; he had a comfortable night after it. Bucknell took the same medicine, but in a larger dose; half a grain was exhibited, and he had an excellent night. I mention this to shew that it was not the dose of the medicine, nor the disease under which he was labouring, nor the ordinary circumstances of that disease, but a remarkable idiosyncrasy which caused this moderate dose of morphia to produce an unusual effect. I think in looking back upon the case that it would have been more judicious to have given rather a smaller dose, and that another measure should have been conjoined with it, namely, something to relieve the breathing. The chest was oppressed, he was suffering from bronchitis, probably with congestion of the lung, and although there was not much chance of removing all these, yet it would have been better if a large blister had been placed on the chest. Though the dose of morphia was a moderate one, yet it produced here inordinate effects, and it would have been better to have attempted to counteract it. Probably this could only have prolonged existence a few days; his life was worth little at best, but it is right to consider every circum-

stance that can in any degree tend to promote or continue it.

Here is an account of the post-mortem examination. "The body generally was very much emaciated; the lower extremities were œdematous, but scarcely so much so as during life. The muscles in common with other parts of the body were pale and bloodless. On opening the abdomen the liver was found to project below the ribs; the left lobe four or five inches. The right lobe was not quite so low, and the left extended over the spleen as far as the confines of the left side." Here is a state of liver which but for the distension of the abdomen with liquid would have been very palpable, and enabled us to ascertain its physical condition. Had he lived another day, we should have been able to add the diagnosis as to the particular form of the disease as well as the existence of disease of the liver. Unfortunately, however, that could not have helped us in the cure of a disease such as this. "The upper surface of the liver reached as high as the fourth rib."

There was nothing particular in the state of the brain. "It was pale generally; there was some fluid between the arachnoid and the pia mater, about an ounce at the base.

"The surfaces of the pleuræ were not adherent, and there was only a small quantity of fluid on the right side. The right lung was distended, pale in colour, highly œdematous, and exuded a great quantity of somewhat frothy serum on being cut. There were a few small black tubercles on its surface. The mucous membrane of the largest bronchial tubes was injected, and of a bright red colour. Weight 31 ounces. The left lung was more infiltrated than the right, and exuded a frothy serum from the upper portions; the base was engorged of a reddish colour, and the serum which exuded was frothy and bloody. This lung was slightly puckered at its apex, and there was a little thickening about its root; weight 25 ounces."

In the lungs, therefore, we find proofs of extensive œdema, so that on incision the frothy serum gushed from them in torrents; there was, however, but little appearance of sanguineous congestion, and what there was, was chiefly confined to the left lung. In addition to that there was bronchitis. I consider the disease which existed before death to have been bronchitis, with a congested state of the left lung; and that the extremely œdematous state of the lung supervened two or three hours before death, when his breathing became more embarrassed. There was scarcely any chronic disease; therefore we must consider that the tubular sounds that were distinctly audible

on both sides, but more on the right than the left, must have been produced chiefly by compression of the lungs from below, by the lung being pushed upwards by the distension of the abdomen by the large mass of liver and the collection of fluid beneath. I have again and again pointed this out as the cause of the sounds, and which should be separated from disease in the lung itself. It is a difficult thing always to determine this point, and it was impossible, from the short period we had at our command, here to make that diagnosis.

"The heart was healthy, and weighed eight ounces.

"There was some ecchymosis of the mucous membrane of the stomach. At the posterior part of the great curvature were two small patches with punctured edges: these were denuded of mucous membrane, and had the appearance of cicatrices." It is very probable that there may have been ulceration of the stomach at some former period, associated with his habits of gin-drinking, and it is very possible that such a lesion as that, together with a congested condition of the vessels of the stomach, arising from the obstruction through the liver, was the source of the hæmorrhage from the stomach and intestines of which we found he had been the subject.

"The peritoneum was pale in colour, but in some places its abdominal surface presented slight appearances of capillary vascularity, and there were from four to six pints of clear serum in its cavity," the remains of the liquid effusion.

"The liver was of a pale brick-yellow colour, very firm in texture," and very ponderous in weight. "Its surface was irregular, with numerous roundish projections varying in size from a pin's head to a small pea. The capsule was firmly adherent," so that it was utterly impossible to separate it from the liver. "The cut surface of the liver was almost as pale as the exterior surface, being mottled in a few places only with patches of a deeper colour, in which the natural structure could be traced, tinged with bile. The blood-vessels were very few, and small in size. Under the microscope the pale dense structure appeared to consist of closely compacted granules interwoven with some fibres. It contained numerous fat globules, but very few of the large nucleated cells proper to the liver."

This is pretty exactly the same condition of the liver that I described in the case of Bucknell. It is a variety of cirrhosis, but differing from some examples, the caco-plastic matter deposited in it being so abundant as not only to prevent the whole mass of liver from being greatly diminished in size, but so abundant as almost entirely to

supersede the natural structure of the organ. It superseded it to the naked eye, so that you no longer saw the usual appearances of the acini of the liver, those red or brownish spots or points, which the vascular structure presents; and under the microscope it exhibited not only the absence of vascular substance, but of the proper secreting cells of the liver, the place of all these being taken up by a sort of homogeneous granular matter in which the granules were of irregular size, very closely compacted together, and in addition held together by filamentous structure. This was the result of my examination with one of Powell's glasses, having a magnifying power of 400 diameters. The structure was exactly the same as in Bucknell's case; therefore I need not repeat the pathological remarks made on that occasion.

"The gall-bladder contained some pale yellow liquid." It was of a lemon colour; there was a little bilious matter in it, just what might have been expected from the small amount of hepatic structure that remained in the liver.

"The spleen was hypertrophied to a considerable extent; weight 20 ounces." There was no particular change of structure there. It would appear that the spleen had become the receptacle for the superfluous blood of the abdomen; that which the liver would not allow to pass through, and which the blood-vessels would not contain, the spleen had in some degree adapted itself to receive; it had enlarged from the same cause that obstructed the blood in other parts.

"The right kidney was large, smooth on its surface. The capsule easily separated. The internal structure was a little coarse. Weight, 6 ounces. The left kidney was large, smooth, capsule not adherent; paler in colour than the right: weight, 7 ounces."

These kidneys were hypertrophied; their increase in size could not be ascribed to the quantity of blood in them, inasmuch as one of them was much paler than usual, and the other did not exceed the usual standard of vascularity. Therefore there was deposit of some kind, but it did not present the appearance of granular degeneration. There was no irregularity in it, and probably it was something of recent formation; consequently any shrinking to which this deposition tends had not had time to occur.

In looking back to the case I think we can see several reasons which make the history and symptoms of the patient as presented on his admission to the hospital conformable to the condition of things revealed by the post-mortem examination. In many cases we see persons becoming dropsical, but the dropsy remains either stationary for some time, or even diminishes under active

treatment. But here, in spite of the treatment to which he had been subjected before he came to the hospital, in the last four weeks the dropsy had rapidly increased; and we see that all the conditions favourable to the production of dropsy obtained in this man to the uttermost—some modification of the circulation, obstruction, and a watery condition of the blood. Both these were present here to a high degree, and the obstruction was brought to the utmost by an excessive amount of deposit in the liver, that deposit taking effect not only on the portal vessels themselves, but likewise on the vena cava ascendens; and the resistance and bulk of the liver was such that it must have compressed veins going from the abdomen which did not pass through the liver. We have seen quite a sufficient reason for the other cause of dropsy—the impoverished condition of the blood. It was brought on to a great degree by the loss of blood which had taken place, and it was further promoted by the defective secreting power of the liver; so that whatever biliary matter was produced in the system, and whatever office it has to perform, it was kept in the blood-vessels, and was never separated and applied to its proper use.

You know that there are different views on this subject. Some suppose that the bile is merely excrementitious, and in that view its retention in the system would no doubt injure the quality of the blood, tend to render it poorer, and less available for the purpose of nutrition. But others suppose that the bile is not only useful *excrementitiously*, but also *recrementitiously*: useful as constituting an element which is available for the purposes of digestion, for the completion of the process, and likewise for the purposes of respiration. These are matters that we cannot enter into now, but whichever view is taken we see how such a serious destruction of the proper structure of the liver tends to produce a bad state of the blood, and thus promote the occurrence of dropsy.

We have had some cases of epilepsy and other affections of the nervous system under observation within the last three months; there is a sufficient variety to illustrate very well some views which I brought before you in the College on the pathology of the nervous system, both as to the causes of the phenomena produced and as to the mode of treatment most eligible in such cases.

Several cases are put down under the name of epilepsy; others come under the denomination of congestion of the brain; and others, again, are called hysteria. But these different cases agree in this common character, that the patient has been attacked by paroxysms or fits affecting the nervous system in particular, depriving the individual

more or less of sensorial power; in some instances, in addition to this, affecting in some way or other the excito-motory power, and producing by this combination the various fits which are described under the head of epileptic fits, hysterical fits, fits of stupor or cerebral syncope, and fits which are often classed under the common denomination of determination of blood to the head.

Some of the cases which I will merely notice—for I have not time to read them—will illustrate these remarks.

There is the case of Mary Stanton, who was admitted April 25th, and dismissed May 1st. She was picked up in the street in a fit, and brought to the hospital. That fit exhibited a state of insensibility, in which she had foamed at the mouth, and I believe had been convulsed. When she came to herself she was able to give us the history. She had been subject to fits of this description for twenty years past, they having been produced in the first instance by something that frightened her, and having occurred at irregular intervals since. The fit passed off; she was not otherwise a proper subject for the hospital, and therefore was not kept in.

There is another case something like it in the character of the symptoms. Jane Bisney, admitted the 25th of June. She was brought in in a fit, and was dismissed on the 28th, when she had recovered from it. When she was admitted she was perfectly insensible; there was something approaching to convulsions; and when she was recovering she was very stupid, and could scarcely answer. There was great hebetude of her faculties, but by depletion and purging she was restored to a state of convalescence, and then she said that she had been subject to fits for ten years, and that the first fit had been brought on by fright. She was frightened at seeing a dead body, ran away, and when she got home she was seized with a fit. From her account there was a complete loss of consciousness, and in other respects it had more the character of epilepsy than of hysteria. It does not appear that she was nervous or hysterical at other times, and these fits occurred at uncertain intervals, sometimes of years. The fit for which she was brought in came on during the night.

Another case is that of John Whiting, who was likewise seized with a fit. He was admitted in a state of stupor on the 27th of June, and dismissed apparently free from ailment three days afterwards. He had had several fits of this kind within the last two years. He received a great moral shock from his wife being burned to death two years since. At that time he states himself as being nervous; as sometimes having had distinct fits depriving him of consciousness,

at other times a threatening of fits making him feel faint, and almost losing his senses.

These are cases of the rare occurrence of fits, not apparently connected with any serious organic disease, and depending for their recurrence rather on some accidental exciting cause than any serious disease permanently existing in the body. All these cases afford many proofs of congestion having been the prevalent affection. In the case of Jane Bisney not only was the purplish appearance of the face manifest, but the jugulars were much distended on her admission, and they remained so at the time of my visit when I saw her afterwards. In the case of John Whiting there was some appearance of the same kind, and he still continued to complain of pain in the head and confusion. The whole of these cases exhibited enough signs of remaining congestion to warrant the use of evacuant remedies. In Jane Bisney cupping was employed, in John Whiting active purgation, and in Mary Stanton measures of the same description were found sufficient.

I have not time to consider the hysterical cases, but those already noticed are examples in which coma prevails: most without there being any remarkable excitement of the excito-motory function, but the insensibility is more or less complete. Now during the fit there is nothing to distinguish these from apoplexy. We know full well by the pathology of apoplexy that congestion of the brain is sufficient in itself to produce it; and in order to explain these cases which thus occur in paroxysms we must find out some means of explaining how a cause of apoplexy can operate for a short time only, and cease after that time. We know that is the case with regard to congestive apoplexy itself. It will occur and in favourable circumstances sometimes will gradually subside, and the patient come to himself completely without any mischief ensuing. He may be said, therefore, to have had a fit of apoplexy. The symptoms that were present in these cases might have been of this description; it was only when we came to inquire into the history that it was rendered probable that these classes had any connexion with the epileptic, and were not cases of incipient apoplexy. The chief distinction, however, is in this—the less complete amount of the oppression. In these apoplectic forms of epilepsy the oppression is generally confined, or chiefly, to the sensorial function; whereas, in the case of true apoplexy, that which derives its formidable character from its really infringing on life, and threatening to terminate the fit not by recovery but by death, the distinctive character is that it does infringe on the excito-motory function as well as the sensorial. In proportion as it does that it is a new disease,

receives a new name, and requires a new prognosis; but this difference from the other is a matter of degree.

I would conclude by stating, that, in their essential pathology, apoplexy and epilepsy differ in degree rather than in kind; and I may add, that hysterical and epileptic fits differ in the same particular. I shall resume this subject at a succeeding meeting.

ACTION OF EXCESSIVE DOSES OF MERCURY ON THE PANCREAS.

A CASE is related by Dr. Copland which strikingly illustrates the morbid action which mercury, taken in excess, occasionally exercises upon the pancreas, in common with most of the other secretory glands. "A female, 29 years of age, contracted syphilis, for which she was treated by means of corrosive sublimate. Violent ptyalism took place, four pounds of saliva being excreted in the twenty-four hours. As this secretion diminished, diarrhoea appeared and increased. Soon afterwards, the patient complained of anxiety and heat, with a fixed, obtuse, and deep-seated pain at the epigastrium; loss of appetite, nausea, tension of the abdomen; of great thirst and dryness of the throat, and rapid pulse. These symptoms were aggravated when the stomach was full. During five days some amelioration was remarked, but bilious vomiting supervened, and the pain and diarrhoea increased. The frequency of the calls to stool became remarkably great; a watery yellowish fluid, resembling saliva, being voided. The deep-seated pain above the umbilicus prevented the patient from lying on her back and left side, and was increased by a full inspiration. Some days of relief followed, after which a violent increase of fever appeared, with a return of the diarrhoea, an acute pain at the epigastrium, and orthopnoea. Blood-letting was prescribed. The following morning the parotids were hot and painful; the mouth was burning, the pulse small, and the stools were suppressed. Mercury, camphor, and opium, were ordered, and leeches, blisters, &c. to the parotids. Towards evening, the breathing became stertorous, the anxiety extreme, the pulse thready and intermittent, the extremities cold, and the face Hippocratic. She expired in the night. The pancreas was found red, swollen, and somewhat more consistent than natural. It weighed eight ounces; and the blood ran freely from it upon dividing it. The duct was dilated. The parotids were also inflamed." We apprehend that practitioners generally have failed to observe the probable dependence of the diarrhoea of children in whom mercury has been given to excess, in part to a disordered state of the pancreas and its secretion. —*Dictionary of Practical Medicine.*

ON THE STUDY OF PATHOLOGY ;

A LECTURE, INTRODUCTORY TO A COURSE
ON GENERAL PATHOLOGY,*Delivered at the School adjoining St.
George's Hospital,*

BY GEORGE ROBINSON, M.D.

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Society, &c.

IN commencing a course of lectures on any branch of science it is usual to present a brief history of its origin, progress, and present condition ; to exemplify its utility and importance ; and to make a few observations on the most advantageous method of conducting its study. In accordance with this custom, I shall, with your permission, devote the time allowed for this lecture to the consideration of these several points, as connected with the subject of general pathology.

But, before proceeding further, it is desirable that we should have a clear understanding of the precise signification of that term ; and an early definition of it is the more urgently required, inasmuch as it is not unfrequently confounded with morbid anatomy.

Now these two divisions of medical knowledge are essentially distinct. The one is a science of observation, the other of reasoning ; the one detects the existence, and notes the peculiarities, of morbid changes ; the other explains the process of their production ; the study of the one commences where that of the other ceases, namely, with the death of the individual. In short, morbid anatomy is to pathology what the anatomy of the healthy body is to physiology. And though a knowledge of the changes which disease occasions is undoubtedly as essential to a correct comprehension of its precise nature, as an acquaintance with the natural structure of parts is to a clear understanding of their healthy uses, it does not follow that a good morbid anatomist must necessarily be a sound pathologist.

By pathology, then, is meant that science which ascertains the nature and situation, traces the origin and effects, and explains the mode of action of the causes of disease. On the knowledge which it furnishes rest the two great branches of the medical art, viz. hygiene, or the preservation of health by the prevention,—and therapeutics, or the restoration of health by the removal,—of those morbid causes.

Pathology is termed general, when disease in the mass, or large groups of diseases, are the objects of study ; while the investigation of an individual disorder constitutes special

pathology. It is my duty to lay before you some of the principles of the former science.

The history of general pathology need not long engage our attention. As a science it is entirely in its infancy ; and an enumeration of the long list of visionary speculations, unsupported conjectures, and fruitless hypotheses, with which, under the name of pathology, many works have been filled, would be a tedious and unprofitable task, and one altogether foreign to the objects we have in view. It is true, that men of genius have at different times pointed out the vague and unphilosophical spirit which pervaded medical reasoning ; and a few—among whom Boerhaave occupies the most distinguished place—proceeded so far as to point out with clearness the proper manner of studying medicine. But a disposition to correct this long prevalent error by the adoption of a more sober and practical style of argument, and an ability—from the advanced state of the other sciences—to place pathology on a firm basis, constitute, in their simultaneous existence, a peculiarity of the present age.

I could here with pleasure refer to many brilliant discoveries that have recently been made in the departments of special pathology and morbid anatomy, but it does not fall within my province to do so. I can only say, that our countrymen have not been behind their continental brethren either in the number, importance, extent, or practical utility of their contributions to the common store of knowledge. It must, however, be confessed, that, while these sciences have been thus successfully cultivated, general pathology has hitherto been allowed to remain crude and imperfect ; its powers undeveloped ; its beauties unexplored. There has been no fostering hand to draw it forth from obscurity, and support it, till it should be enabled to stand by its own strength, and flourish by its own merits ; and we must consequently look for its history, rather to the future, than to the past.

Before a proper estimate can be found of the value and importance of general pathology, and of the advantages which would result to mankind in general, and to the medical profession in particular, from its extension and improvement, we must first understand the manner in which, and examine the means by which, it is to be raised to the dignity, and endowed with the stability, possessed by the other sciences. And here let us, for a moment, reflect on the method of study which has been so successfully applied to the advancement of the other branches of natural knowledge.

It may be briefly stated to consist in the strict observance of this simple rule, viz. to place implicit belief in those conclusions alone, which have been derived from well-authenticated facts, by a slow and cautious

process of generalisation. As an immediate consequence of this law it follows, that in estimating the credibility of an opinion, we must be guided solely by the nature, validity, and amount of the evidence, adduced in its support; and entirely omit all considerations as to the relative fame or authority of the individual from whom it emanated.

Hence, moreover, we have a natural division of ideas, or opinions, into great classes; viz. *principles*, or, ideas so supported by facts, as to necessitate a conviction of their accuracy; and *hypotheses*, or ideas which rest upon the presumed existence of phenomena, and which, consequently, can only be fully believed when the reality of those phenomena is satisfactorily determined.

Principles are the great truths of nature—ever firm, constant, and unvarying; while all hypotheses are necessarily more or less uncertain and unstable, in proportion as the knowledge of man is limited, and his faculty of judgment liable to error. We must, then, ever bear in mind that—all unknown things being possible—the correctness of any given hypothesis may or may not be probable; but that *principles*, based on the facts furnished by observation and experiment, and consistent with the ascertained laws of nature, can alone be admitted as truths, and allowed as such to direct and influence our practice. A science is a collection of such principles; an art consists in the application to useful purposes of the knowledge which they afford. Hence the perfection of an art is intimately and directly dependent on the progress of the science with which it is connected. The members of our profession are thus at the same time the cultivators of the science, and the practitioners of the art, of medicine. And it may be affirmed, that, as no science is more comprehensive in its range of study, or more exalted in its objects, so no art is more difficult, or requires greater skill and judgment for its successful practice.

The relative value of principles and hypotheses, and the importance of distinguishing between them, will now be apparent. I have insisted upon the superior value to be attached to principles, but let it not be supposed that hypotheses are altogether useless. So far from this view being correct, we should, without the assistance of the latter, make but very slow advances in knowledge; for they interest our curiosity, stimulate our industry, and thus pave the way for the discovery of principles. Hypotheses may be considered as the unassisted efforts of the imagination to surmount difficulties; and, as that function of the intellect is, in general, most active in youth, that is perhaps the period of life best calculated for developing the germs of great discoveries. Let the creative energies of the mind be but well

directed, tempered by judgment, and confined to the explanation of phenomena, and they must lead to good results in the shape of hypotheses. But he who would wish to bestow upon science a gift worthy of acceptance, and to obtain for himself a lasting reputation, will not be content with framing an hypothesis; he will endeavour to establish it as a principle. For the accomplishment of this end, he must, in the first place, with unwearied perseverance, labour to accumulate as many pertinent facts as possible; and then, assuming all the stern integrity and clear discrimination of a penetrating and unbiassed judge, endeavour to deduce from them such inferences as seem to him most inevitable and direct. The stern and un-failing test of facts, thus honestly applied, will, at once, and for ever, either constitute the idea a *principle*, by demonstrating its truth, or consign it to oblivion by exposing its fallacy. Theories in this respect resemble the framework of a building, which, if weak, is speedily crushed beneath the weight of the accumulated materials; but which, if sufficiently sound to bear the trial with impunity, becomes itself a part of the edifice which it has served to rear.

Having thus hastily sketched the manner in which the other sciences have been constituted, I shall now proceed to glance at some of those circumstances which have retarded the development of the highest department of medical science.

The first cause to which I shall allude, is a very injurious remnant of the old school of philosophy, and consists in the habit of deciding questions rather by the weight of individual authority than by a direct appeal to nature. It is undoubtedly just and proper that every respect be rendered to the memory of those great men who have, in different ages, adorned our profession; but the time has now gone by when the dicta of an individual could be permitted to usurp the authority due to principles alone; and, for the best interests of mankind, it is to be hoped that such times will never return. In the earlier epochs of medicine, when the prevailing ignorance of natural science was so universal, and the students of each branch so few in number, and so fettered by the cumbersome trammels of antiquity, we cannot wonder at the reverence and admiration with which the aphorisms of Hippocrates were regarded, nor that it was considered almost a crime even to doubt their infallibility. But now that the cloud of darkness is to a considerable extent removed from the other sciences, and the number of persons engaged in the cultivation of medicine is so great, what excuse can be offered for continuing to study disease as it were through dead men's eyes? Is not the field of inquiry

equally open to the living? And yet, on reading the articles Fever and Inflammation, in any systematic work on medicine, and observing the manner in which it is attempted to elucidate the pathology of those affections by a formidable series of quotations, extending as they do from Hippocrates down to Broussais, and from Celsus to John Hunter, who would think that we ourselves possess the same, and even more efficacious means of investigating and determining these questions? Would it not rather be believed that nature's laws are changeable, or that her truths are written in a language so difficult as to compel us to trust for all the information we can hope to gain to the exertions of the favoured few who may have been selected to act as her interpreters. And, doubtless, the prevalence of this latter idea, which, though in some slight measure correct, is far from being an absolute and general truth, has contributed not less than the actual difficulties of the subject to discourage men from boldly grappling with the great mysteries of pathology. And it is at the same time evident, that a continuance in these attempts to decide important pathological questions, by appealing to so many opposite and conflicting opinions, must constantly and powerfully tend to weaken the public confidence in the soundness of medical doctrines, by exhibiting the weak fluctuating, and insecure basis, on which they rest.

Another and an insurmountable obstacle to the rapid growth of pathology has been the depressed and torpid state of the other sciences. Thus the progress of pathology is intimately connected with that of physiology; but the great advances which the latter science has lately made may all be traced to the application to the living body of the facts and laws furnished by chemistry, natural philosophy, comparative anatomy, and other sciences, which are themselves as yet but in a state of infancy. On considering, then, the contrast which the present state of the physical sciences offers to their condition in the time of Boerhaave, we are at once enabled to understand why the method of study advocated by him, though founded on correct principles, was comparatively unproductive of good results, and gradually fell into disrepute; and are also encouraged, by the prevailing taste for scientific pursuits, and by the zeal and ability now applied to medical researches, to hope and believe that an attempt at strengthening and elevating pathology by causing all the other branches of natural science to contribute to its support, might, under the present happier auspices, be crowned with considerable success.

I have still to mention one other, and that a very ancient and long-prevalent impedi-

ment to the progress of general science, and which still exerts some influence in retarding the growth of pathology. It arises from the disposition which men have ever manifested to evade the investigation and solution of difficulties, at the same time that they preserve an affectation of knowledge, by referring every phenomenon, of the causes and nature of which they are ignorant, to the influence of certain occult, mysterious, and supernatural powers, which they have created for the purpose. It is, in short, the habit of shrouding ignorance and indolence beneath the cloak of superstition. Thus, the same spirit which for a long time confounded chemistry with alchemy, astronomy with astrology, and which assigned to a particular class of ideal beings the power of controlling each of the elementary forms of matter, the same unhappy and perverted exercise of the imagination, led in medicine to the creation of the Archæus of Van Helmont, the anima of Stahl, and in still later times, the wonder-working vital principle of Blumenbach, and others. Now, to use the idea of an old philosopher, are we not justified in declaring all such doctrines to be *mysteriously* false, and as such more injurious to science, than opinions which are *perspicuously* so, inasmuch as they are apt to be adopted by many who think that those hard and incomprehensible words may *possibly* carry with them some latent and secret meaning? And, to return to our own science, if a discriminating, preservative, semi-rational principle, or agent, did reside in the living body, why should the latter be subject to disease, and whence the utility of our profession? But we look in vain for proofs of the existence of any such power. On the contrary, an attentive observation of the origin, course, and consequences of disease, and a careful comparison of its phenomena with those of health, lead the mind to the inevitable conviction, that all the processes of the living body are conducted in accordance with certain fixed laws, by the operation of which the same causes are ever productive of similar effects. From a knowledge of the latter fact we infer that the material of which living animals are composed is still subject to the common and universal laws of matter; and, on the strength of this inference, rest all our hopes of understanding the nature and causes of the various diseases to which those bodies are liable. For, to use the words of an accomplished physician of the present day (Dr Robert Williams), "the definite action of causes is the basis of human knowledge."

We must, then, remember, that the laws which govern the actions of the human body are ever the same, whether the phenomena resulting from their operation be productive of beneficial or of injurious effects. Thus,

the process of absorption is the same, whether the matter taken into the circulation be healthy nutriment, or destructive poison. So, again, the conditions causing the effusion of coagulating lymph are precisely similar, whether its effect be an advantageous one, as when it occurs from the cut surfaces of a wound for the purpose of reparation, or whether its occurrence be attended with danger and inconvenience, as when it takes place from the surface of an inflamed pericardium. The absurdity of the assertion, that this latter, or any other process, is invariably and universally a healthy action, must therefore be apparent to every one. And, equally clear is it, that those men are guilty of a serious and inexcusable offence, who, reposing a blind and implicit confidence in the uncontrolled and unaided efforts of nature, await with calm indifference the issue of the fearful struggle between life and death. For it is the duty of the medical practitioner carefully, anxiously, and unceasingly, to mark the seat, and watch the tendency, of those actions, which the natural powers of the body may have excited. When, either from inordinate activity, or improper situation, their effects are calculated to be productive of injury to his patient, he must at once endeavour to repress and remove them. And, on the other hand, when they can be employed for the accomplishment of a salutary purpose, it is for him zealously and actively, and at the same time cautiously and prudently, to second the operations of nature by contributing to the furtherance of their common object all the resources of his art.

In making these observations, I by no means wish to be understood as denying the existence of powers peculiar to animated matter; I have alluded to the subject, because many of the opinions entertained with respect to the precise nature of life appear to me to be doubly injurious. For their adoption tends to cramp the energies of the intellect, and impede the progress of medical science, at the same time that it countenances an indecisive and inactive course in the treatment of disease. A brief consideration of this subject, so deeply interesting to every one, and so highly important in its relations to pathology, constitutes an indispensable preliminary to the study of morbid actions.

Having now reviewed some of the chief causes which have hitherto prevented the establishment of a sound system of pathology, and being thus cautioned by the errors preceding ages, let us, in the next place, consider the means by which, and the spirit in which, its study and further cultivation are to be attempted. And here let me urge the importance and necessity of the student constantly holding in view the one

great end and object of all his labours,—namely, *the removal and prevention of disease in man*. For this purpose, he must learn as much as possible of the structure, composition, and actions of the human body; and, before he can attain this knowledge, he must have some acquaintance with the general laws and properties of matter, and also be aware of the leading peculiarities of each of the great classes of inferior animals.

Thus, having in his preliminary education paid some attention to the sciences of natural philosophy and chemistry, and having acquired a sound knowledge of human, and a general acquaintance with comparative anatomy, the student next approaches the interesting, and, to the future medical practitioner, the most important, of all studies, viz. that of the actions of the living body. And, until he has made some progress in this department of medical science, he is equally incapable of understanding the operation of remedies, or of undertaking the detection and treatment of disease.

This essential knowledge he will obtain through the medium of the kindred sciences of physiology and pathology; each of which has its peculiar ramifications and dependencies, but which both agree in two respects: they mutually aid and advance each other; and the principles of each are derived from, and rest upon, the whole range of natural science. He, then, who wishes to advance pathology, must commence his work, not merely by the study, but by the improvement and cultivation, of physiology. And, on the other hand, as disease often arises from, and is accompanied by, an extreme intensity of the natural actions of the body, so will the physiologist, from the observation and study of its phenomena, frequently derive ideas explanatory of the more gentle and comparatively invisible actions of health.

Moreover, as certain actions, which, in one animal, are compatible with health, cannot take place in the body of another without occasioning disease, the importance of an acquaintance with the facts of comparative physiology will also be sufficiently apparent.

In like manner, as numerous animals resemble man in the structure of their most important organs, and in the nature of the contrivances by which some of the most essential actions of life are accomplished, so, in the nature, causes, and effects of certain of their diseases, do we observe a close resemblance to analogous affections met with in the human subject. The study of comparative pathology has moreover this additional recommendation, that its more extended cultivation would, to a considerable extent, obviate the necessity for performing experiments on living animals—a necessity

which entails upon the experimentalist a degree of responsibility perhaps inferior only to that incurred in operating upon man; and the plea of which necessity seems to me to be admissible only under the following circumstances; viz. when the benefit resulting to mankind from the attainment of the knowledge sought after is evident and direct; when the proposed experiments are likely to afford that knowledge; and when it cannot be obtained by the use of any less objectionable mode of investigation.

I have before had occasion to mention the great importance to the pathologist of a knowledge of morbid anatomy, and should insist more fully on this point, but for entertaining a conviction that its necessity is universally acknowledged. Let me rather, here, make one or two additional remarks, in order to impress on you more forcibly the nature of the distinction between pathology and morbid anatomy.

It is a mistaken idea to suppose that we can always, or even generally, learn the essential nature, and discover the causes of disease by a mere examination of the dead body. Indeed, I cannot, at this moment, recollect a single important disease, the pathology of which has been fully elucidated, and finally decided, by the aid of morbid anatomy alone. Thus, I am unable to perceive what direct light it has thrown on the pathology of fever, inflammation, nervous disorders, epidemic diseases, or the large group of diseases arising from specific contagion. The chief advantages (and they are undoubtedly highly important and valuable), which we have gained by the labour of the morbid anatomist, appear to be the following. In the first place, he has, in many instances, shown us how injuries and diseases produce death, and has thereby enabled us to direct our treatment with vigour and certainty.

Then he has also frequently given us precise information as to the seat of disease; thus facilitating the diagnosis, by allowing us to compare its symptoms with its physical effects, and at the same time improving the treatment, by strengthening our faith in the correctness of that diagnosis.

And lastly, he has brought to light, and exhibited to us, the progressive deviations from the normal structure and healthy appearance of parts, which disease occasions. But *death* invariably terminates and puts an end to *disease*, and the immediate causes of death are in general but the effects of disease. And, as every one knows, the observation of an effect by no means necessarily implies, nor does it often directly conduct to, a knowledge either of the cause producing that effect, or of the manner in which that cause acted. I contend, then,

that a mere description of the structural changes effected by disease will not alone suffice to explain its nature, or to discover the origin and mode of action of its causes.

Disease is an attribute, an affection of *life*; it can only exist while life remains; and to be studied with success, its operations in the living body must be scrutinized with even more care and nicety than have been applied to the detection of its effects in the dead subject. Disease is but disorder of the natural actions of the body; to understand it we must anxiously watch and diligently study those actions; and, unless we can make some considerable progress in that study, our useful and available knowledge of disease will continue to be very limited and circumscribed; and the vast bulk of pathological literature will but poorly compensate for the vague, uncertain, and unprofitable nature of its contents.

In learning the collateral sciences, the student of medicine must be careful lest he allow their attractions to divert him from the great object of his pursuits, and permit the secondary science, the mere branch, to engage more than its due share of that time and attention which the important centre of his pursuits so imperatively demands. Thus the divisions of natural philosophy and natural history should not, by the medical student, be considered so much as separate sciences, nor valued so much for their own intrinsic beauties and excellencies, as scrutinized and examined for any new facts which might be applied to the explanation of the actions of the human body, or to the relief of its diseases. He must also remember that these sciences are not included in the course of medical education as mere accomplishments, or amusements; though they undoubtedly impart more interest, and lend additional grace and dignity, to the study of medicine. We learn and cultivate them for more important reasons; namely, because they contain information which may be made to illustrate disease, either directly through pathology, or indirectly through physiology; because they furnish facts from which principles explanatory of the process of life may be deduced; and because they constitute important instruments by the use of which we may hope to arrive more speedily at that great end towards which all our exertions must be made to converge.

Were these considerations constantly held in view, then the botanist, while observing the development and growth of plants, their diseases and decay, might haply think of some analogous process or affection of the human body which he might thus be enabled to explain. The zoologist, while studying the habits, the instincts, the functions, and peculiarities of the animal creation, would constantly be reminded of certain actions in

man which, either in a healthy or diseased state of his body, corresponded to them. The discovery of every additional law or property of matter, and the observation of every fresh phenomenon in nature, must thus ultimately tend to the extension, and contribute to the support, of pathology; which, thus constituted and strengthened, will rapidly rival in dignity, and equal in the extent and certainty of its information, the allied science of physiology. In the union of these two consists the science of life—the highest and most exalted of all sciences; for it rests upon, and is supported by all others. It is, in short, the apex, the crowning stone, of that huge temple of natural knowledge which has been reared by the united industry and intelligence of successive generations of inquirers, the basis of which is the universe, and the great ends and objects of which are the glory of God, and the happiness and benefit of mankind.

I have now mentioned and briefly considered the different departments of medical science which are most ultimately connected with pathology. In the study of medicine the learner must, up to a certain point in his career, implicitly believe the statements of his teacher. For he has to commit to memory the facts and principles of a number of sciences, and as the truth of these principles is admitted by men better qualified than he to form an opinion on the subject, it would be an absurd and useless waste of time for him then to doubt or dispute their accuracy. But after leaving the more exact sciences—those of observation—the principles of which flow directly from the evidence of the senses, and on approaching the study of the higher and more difficult branches of medical science, a greater degree of caution and reserve must be exercised. Here an implicit belief in the *opinions* of his teacher is not only unadvisable, as tending to bias his judgment, and render his mind for ever after less open to the truth, but positively injurious, inasmuch as it destroys the independence of his intellect, by creating a habit of trusting to others for the decision of questions, which, by the free and discriminating exercise of his own powers of reflection and reason, he might himself be equally well qualified to solve. The great maxim in these sciences should be, to repose unbounded confidence in *principles* alone. Mere points in practice, or theories of explanation, may, on the authority of the individual making the statement, be credited until such time as the student is enabled to test their truth by the results of his own experience. But a pathological principle or law is to be received with greater caution; the connection and pertinency of the chain of evidence on which it rests must be carefully examined, and the accuracy and validity of the facts

supporting it be clearly ascertained, before it is admitted as correct, or reserved for practical application.

We are now prepared to estimate the value and importance of the study of general pathology.

In the first place, its advance would confer a great and lasting benefit on the profession and the public, by arresting the growth, and paving the way for the final downfall, of quackery. For it is to the weakness of medical science, and to the limited, and it would almost seem gradually decreasing confidence reposed by the public in medical practitioners, not less than to the impudent falsehoods and plausible assertions of its own adherents, that empiricism is indebted for its prevailing extent, and vast amount of income. Medicine is, by many, considered a vague and uncertain art, resting on the questionable and ever-varying authority of individual experience, rather than on firm and immutable principles. And the necessary consequence of the prevalence of such an opinion is the transfer of a considerable share of public support to those systems which have, at least, the merit of intelligibility to recommend them. Thus every man of ordinary intellect can comprehend the views of disease so pompously paraded in a quack advertisement, in a Morisonian pamphlet, or in the prospectus of a Hydropathic or Homœopathic establishment. But who, from among the immense mass of medical writings, can select a general exposition of its causes and nature, possessing equal clearness and plausibility? Can we, then, be surprised that many of those persons who are incapable of determining the question by their own observation of nature, should rather believe in the truth of views which they fancy they can understand, than repose unbounded confidence in men whose practice is based upon doctrines which are to the rest of mankind, if not to themselves, for the most part unintelligible. The majority of educated men are not altogether unacquainted with the successive revolutions that have occurred in medical opinions. They know, moreover, that medical practice is to a considerable extent influenced by those opinions, and till the latter are made to rest upon some more secure basis than individual authority and fantastic hypothesis, so long as a great part of pathology still continues to be grounded on assumption, and built up of conjectures, is it wonderful that the public confidence in medical practitioners should be shaken, or that thousands are annually imposed upon by the vaunted cures, the confident tone, and the false, but injurious, declarations of artful and unprincipled empirics?

The disgrace which the continued existence of this state of things entails upon

medical science, and the incalculable amount of injury which it inflicts upon the medical practitioner, are evils which require for their removal a prompt and a powerful remedy. But that remedy must be one suited and adapted to the character and spirit of the age in which we live. The only effectual mode of terminating this state of things is to constitute pathology a science, by collecting a code of principles explanatory of the morbid actions of the body. And when the public are convinced that medical doctrines have, at last, assumed the immutability of truth, and that medical practice is conducted on, and regulated by, principles as clearly and demonstrably true as those of the physical sciences from which they are derived; when, in addition to this, they learn that those great truths which have at different periods been elicited from nature, and which are dispersed throughout the different branches of science, are all and each rendered subservient to the support and improvement of medicine; and, moreover, see that the whole animated creation has been, and is constantly being, searched and studied for the express purpose of obtaining additional knowledge of the actions of the living body; then, surely, their confidence in the soundness of medical doctrines, and in the efficacy of medical treatment, will be immediately increased; and as the direct consequence of such a revulsion of feeling the standard of quackery will be deserted by many of its present supporters. Empiricism will in this manner be defeated and destroyed much more effectually and permanently than by legislative enactment; while medicine will be exalted, and its practitioners elevated and enriched, not so much by the downfall of its opponents, as by its own intrinsic merits and superiority. It will be the triumph of reason, not of force; and the victory will consequently be the more lasting and complete. And if persons of education, of common sense, and of tolerably sound judgment in other matters, are so easily persuaded to credit the absurd doctrines of ignorant and uneducated clowns, it is hardly to be imagined that their minds will be less open to the plain explanations and sober reasoning of well-informed and enlightened men; more particularly when that reasoning is supported by, and based upon, those grand and beautiful laws of nature, the effects of which are perceptible to, and in some measure known by all.

An additional cause of the diminution of public confidence in medicine is to be found in the injudicious conduct of some of its practitioners. For, unreasonably and unwarrantably assuming that we already know as much as can be known respecting the nature of disease, they do not hesitate to condemn several disorders as *absolutely*

incurable; and in pronouncing this opinion, they of course confess the inutility of all further medical treatment. The unhappy patient, thus deserted by the educated practitioner, in the natural anxiety to prolong life eagerly grasps at the offer of that aid which in the coolness of reason he would have despised. Hope blinds his judgment; and with an intensity of faith proportioned to the depth of his previous despair, he throws himself without reserve into the hands of the empiric. In the generality of cases, as might have been expected, an earlier, and perhaps a more painful death, is the result of this proceeding. But we know that every now and then the natural powers of the body will, contrary to all our anticipations, cause an intractable disease to remain stationary, and may sometimes even bring about a perfect recovery. Now, when such an event takes place during the administration of his nostrums, the quack of course claims the credit of the cure, and makes the most of the fortunate occurrence, with the view of obtaining fresh dupes. And every one must be aware, that empiricism obtains from the source just mentioned a large proportion of its patients, and owes to that cause whatever success may occasionally appear to have attended its practice. I may add that, so far from the statement of the *absolute* incurability of any disease being correct, every year tends to support the opinion that, by a judicious and extended investigation of morbid causes, and the resulting acquisition of sounder pathological principles, many disorders which are now regarded as absolutely incurable, and which are relatively so, will ultimately be made amenable to medical science, and admit of prevention, if not of removal, by medical skill.

That the science of pathology is yet in a state of mere infancy every one must admit; that much valuable information as to the nature and causes of disease still remains to be acquired no one can deny; but the precise extent and amount of that future information it is impossible now to determine. It must mainly depend on the perfection of our knowledge of the natural actions of the body; and who can say how far we may be permitted to reach in the comprehension of the laws by which those actions are regulated? For who can pretend to assign a limit to our discoveries in the great material world? And every fresh law therein brought to light will be found applicable to the microcosm of man.

Medicine, even in its present imperfect state, has, in civilized countries, materially increased the average duration of human life; and by a judicious use of the unapplied physical knowledge which we already possess, and of that which may hereafter be

discovered, it is certain that life may be still further prolonged.

Some may perhaps think that I have over-estimated our power of detecting and removing the causes of disease. But for proof that various external circumstances—such as habits, employments, localities, &c. over which we do possess some control—are very important agents in modifying our liability to disease, I would refer to the statistical reports of the relative mortality of different districts, and of different classes of the community. But we need not use these documents; let us only reflect on our own personal experience.

We have seen some around us dying in early childhood; others fading away in the full bloom of youth and beauty; some cut off in the prime of manhood, while others still continue to enjoy an intellectual and vigorous old age. We have seen some families numerous, healthy, long-lived; while others annually decrease in number, and progress rapidly to extinction, from the influence of that fatal inheritance of disease to which each member is born subject. Whence, then, this difference in the longevity of individuals, in the happiness and duration of families? Can an investigation of causes which tend to results so deeply interesting to mankind, and so vast in their sphere of operation, be, by any one, deemed unimportant? Or is the science which conducts this study, with the view of detecting and preventing those causes, undeserving of the attention and support of the medical practitioner and the public?

Nor would the profession itself lose ought by the diminished fatality and partial suppression of disease. For, in the first place, the medical man would gain additional dignity as the representative of the public, and the confidential adviser of the legislator and statesman, in all matters affecting the health and physical comforts of the people. And, if mankind are to be credited for the possession of one spark of gratitude, or one grain of common sense, he would surely, in return for the sound advice and mild precepts by which he taught men how to preserve for a lengthened period all the enjoyments and gratifications of health, receive not less remuneration than he now obtains for the nauseous remedies, and painful operations, required to alleviate the tortures and restrain the ravages of disease.

But pathology is not only instrumental in bestowing upon man increase of years; it also assists in conferring upon him a still higher blessing, increase of happiness. For by exhibiting to his view, and explaining to him the operation of, the sure and never-failing laws by which intemperance, luxury, and dissipation, necessarily produce disease, it imparts additional force to those

moral considerations which would bind him to the practice of temperance and virtue. And, at the same time, by demonstrating the constant connection between pestilence and extreme poverty, it leads the rich, by the powerful instinct of self-preservation, to the succour and relief of the poor.

I have more than once expressed the opinion that pathology can be advanced only by the judicious application of the principles of the physical sciences to the explanation of the actions of the living animal body. For this purpose it requires the combined efforts of a few zealous sensible men, who, while they are acquainted with the general laws of matter, are at the same time aware of the peculiarities of a *living* body. And being myself convinced of the absolute necessity of this latter qualification, I conceive that none but practising medical men can undertake the task with much prospect of obtaining permanent principles or useful conclusions. It is true that the labour demanded of these men will be great; and equally true is it that the discovery and establishment of principles is not, and never has been, a profitable occupation. Hence they who would engage in this noble work must be actuated by higher objects than self-interest and cupidity; they must, in short, be men who regard with affection and admiration the noble science and calling which they have embraced.

EXTIRPATION OF THE EYE IN CONSEQUENCE OF A GUN-SHOT WOUND.

A SOLDIER was brought to the hospital 5th Dec. The ball had penetrated the right branch of the lower jaw and upper maxillary bones, and could nowhere be found. Notwithstanding prompt and judicious treatment, great cerebral disturbance came on, which soon became almost complete coma. From the first, the patient had always complained of intense pain in, and loss of the vision of, the left eye. This organ, at first slightly ecchymosed, eventually became highly inflamed, chemosed, swollen, and greatly projected from the socket. Its extirpation was effected with some difficulty, in consequence of the size of the organ, which was only sufficiently diminished by evacuating its fluid contents. At the bottom of the orbit the lost bullet was found and removed. The wound was brought together at its edges "without first filling it with charpie, as most authors recommend, and so increase the volume of the inflammation." A wet compress was applied, and the patient, although the coma did not at once disappear, recovered perfectly.—*Recueil de Mémoires de Médecine, de Chirurgie, et de Pharmacie Militaires*, Vol. 57, 1844; and *Med. Chir. Review*.

Original Communications.

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ADDITIONAL OBSERVATIONS

ON

UNAVOIDABLE HÆMORRHAGE IN
CASES OF PLACENTAL
PRESENTATION.

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BEFORE proceeding to demonstrate what I conceive to be the anatomical and practical errors into which Dr. Lee has fallen, in his observations upon the alterations which I have advocated in the treatment of unavoidable hæmorrhage, I shall first point out some of the misstatements contained in his last communication on the subject*. I do so, not so much in my own self-defence against the criticisms and charges brought against me, as in order to clear the ground for correct future inquiry.

1. "Dr. Simpson, who professes (observes Dr. Lee) to know the number of cases which I have seen much more accurately than I do myself, says the number is 46, and not 45." With the view, however, of shewing my reckoning (46) to be erroneous, Dr. Lee has published in the GAZETTE, p. 1109, a table which—to use his own words—"contains *all* the cases of placental presentation which I (Dr. Lee) have ever seen, and of which I have preserved the histories." This long table assuredly contains only 45 cases, and so far appears to demonstrate that I was wrong in alleging Dr. Lee's published cases of unavoidable hæmorrhage to amount to 46. The explanation of this, however, is, that Dr. Lee has omitted one of his own published cases from the table, and thus reduced their total amount from 46 to 45†.

* Medical Gazette, Oct. 24, p. 1106.

† As the case here omitted has been dropped out of the table at a point where, of all others, it is perhaps most difficult for the general reader to detect the absence of it, I may state its exact locality. Dr. Lee has reported his cases of placental presentation in chronological order. The 35th case in the table in the GAZETTE, is marked as being one in which "turning, by Mr. Harvey," was performed. This is the second last placental presentation reported in Dr. Lee's Clinical Midwifery (p. 162-3), and occurred in July 1842. On the 11th July, 1843, Dr. Lee was called to a case of *partial* placental presentation (Medical Gazette for September 19, p. 893), which is entered in the table as "No. 38, membranes ruptured artificially by Dr. Lee." It should be No. 39, and the numbers of all the subsequent cases should be altered correspondingly. For between the dates of the two preceding cases, Dr. Lee saw and has reported *three* cases of complete placental presentation, in all of which turning was performed. These

2. Dr. Lee's table does not shew so many maternal deaths after "turning" in unavoidable hæmorrhage, as actually occurred in his practice, and as he had previously admitted in his published accounts of the same cases. He has entered the fate of the mother in his seventh case thus: "Death before turning was performed by Dr. Lee;" but it appears that in this case Dr. Lee twice tried to turn the child, and at last effected it. The child was born alive; and the mother, instead of dying *before* delivery by turning was performed, lived for "a few days" *afterwards*. (See the full details of the case in Dr. Lee's Clinical Midwifery, p. 145, Case 266; or Lectures, p. 376, Case 7.)

3. Dr. Lee avers that my table, shewing the average maternal mortality accompanying placental presentations, is copied "largely" from the similar table previously published by Dr. Churchill. But Dr. Churchill's table of uterine hæmorrhages, contains the results of 174 cases of placental presentation, while my table contains the results of 399 cases. Dr. Churchill's table is made up of the returns of the practice of twenty-three different accoucheurs; my table is made up of larger returns, from the practice of fourteen different obstetric practitioners and institutions. Eight of the returns in my table (embracing 247 cases) are not given at all in Dr. Churchill's. Of the six remaining returns, that are common to Dr. Churchill's table and my own, in *five* the figures in the two are, in one or other respect, different; for after a careful analysis of the original works of the reporters, and some private correspondence with Dr. Churchill on the matter, I arrived at a result somewhat different in each instance from those previously published by him. I could not at the time detect so large a number of cases as he stated, in the two works of Giffard and Smellie; I found he had inadvertently given Dr. Lever's cases as 13 instead of 14, and (4) the fatal results in Dr. Ramsbotham's cases as 16, instead of 8; and, 5th, I was able to give a much larger number of cases as pertaining to Dr. Lee*, in consequence of his having published in the interim some additional data. *In the sixth and last return only*—viz. that of the Dublin Hospital—Dr. Churchill and I both give the *same*

cases occurred, one on the 7th of Sept. 1842; a second on the 15th of Oct. 1843; and the third on the 24th of Feb. 1843. But Dr. Lee has omitted one of the *three*, and entered *two* of them only in his table. The three cases, one of which is thus omitted, form the three last in Dr. Lee's table of unavoidable hæmorrhages in his published Lectures, p. 379.

* In his table of Uterine Hæmorrhages, Dr. Churchill enters Dr. Lee as having seen 23 cases of placental presentation, with 6 maternal deaths. Among Dr. Lee's first 23 cases (see Dr. Lee's own table), there were 8 mothers lost. Dr. Lee has not corrected Dr. Churchill on this point.

numbers—viz. those reported by Drs. Clarke and Collins themselves, with regard to their own practice in that institution; and I have already stated that so far we were both wrong, as Dr. Collins met with 12 cases of placental presentation, 3 of which terminated fatally, and not, as he himself inadvertently states, with 11 cases and 2 deaths. Hence, *so far from my table being, as Dr. Lee alleges, "so largely copied" from Dr. Churchill's, it is not copied from Dr. Churchill's in one single instance.*

4. Dr. Lee specializes one instance in which he professes to have detected me actually copying directly from Dr. Churchill, the returns and figures of a particular author. Dr. Lee remarks: "Dr. J. Ramsbotham is represented in the table [of Dr. Simpson,] to have reported 19 cases, 8 of which died. This (continues Dr. Lee) is copied from Dr. Churchill's table." The answer to Dr. Lee's statement is sufficiently simple. Most unfortunately for the veracity of the allegation, Dr. Churchill, in the columns of his table referring to unavoidable hæmorrhage, does not mention or include Dr. John Ramsbotham's cases at all, and hence, of course, I could not copy from Dr. Churchill what Dr. Churchill has not in reality given.*

After Dr. Churchill's work appeared, Dr. Francis Ramsbotham published some remarks in the MEDICAL GAZETTE to shew that his father's printed cases were selected cases, and hence did not give a fair idea of his father's average success. My attention was lately drawn to these remarks in a conversation with Dr. F. Ramsbotham. Dr. Lee quotes Dr. F. Ramsbotham, as specially objecting to Dr. Churchill's use of his father's 19 cases of placental presentation. Of course this is a misstatement. I have already mentioned, under the last head, that in his columns referring to placental presentations Dr. Churchill, in his table, does *not* enter Dr. John Ramsbotham's 19 cases; and consequently it was impossible for Dr. Francis Ramsbotham to find fault with Dr. Churchill on this special count, even though Dr. Lee professes to give the very words of the count itself, and that too, apparently as an extract, within inverted commas.

5. Dr. Lee adds, that, in despite of Dr. Francis Ramsbotham's remarks on the preceding point, published in 1842, that gentleman's proper "caution to the profession has not, however, prevented Dr. Simpson from stating in his table, that 19 cases had been reported by Dr. Ramsbotham, 8 of

which proved fatal, as if this had been the average number of deaths in his practice." In his lectures on unavoidable hæmorrhage, after mentioning the returns of Boivin, Clarke, and Collins, Dr. Lee himself adds, "Dr. Ramsbotham has related 19 cases of placental presentation, eight of which proved fatal." (Lectures on the Theory and Practice of Midwifery, by Dr. Lee, p. 371.)

6. Dr. Lee states that all the statistical errors committed by other writers "contribute to vitiate Dr. Simpson's table, as all these errors have been copied into it." I have already shown that this is a mistake; that, for instance, instead of copying from Dr. Churchill's data, I have carefully endeavoured to correct them; and I have collated my data from the original works of the reporters, in all instances *except two*. In both of these instances I and others are now fully aware that I committed an indiscretion in relying upon the accuracy of the writer from whom I quoted. Under the last head I have alluded to the first of these two instances. But in adopting, without due examination, Dr. Lee's alleged account of the numbers of Dr. Ramsbotham's published cases of placental presentation, I was thoughtlessly led into error. Dr. Ramsbotham has given, in his excellent Practical Observations, the details of 21 cases of the kind, and not of 19, as stated by Dr. Lee. The second instance was accompanied with the same results. Dr. Lee had published an apparently careful and elaborate analysis of Mauriceau's cases of uterine hæmorrhage in the 51st vol. of the Edinburgh Medical and Surgical Journal, and I thought I might depend upon its accuracy; but "I have had the vexation to discover more than one error" in Dr. Lee's returns of Mauriceau's cases. Mauriceau has left details of the result of 19 cases of unavoidable hæmorrhage, instead of 17, as stated by Dr. Lee. Dr. Lee alleges further, that Mauriceau has recorded the histories of 37 cases of accidental uterine hæmorrhage. He has recorded the histories of not less than 50 such cases. When Dr. Lee republishes either his essay on the History of Uterine Hæmorrhage, or his Lectures on Midwifery, I shall be happy to furnish him with exact references to all the cases of Mauriceau which he has omitted.

7. In criticizing the data upon which my table of maternal deaths in placental presentations is founded, Dr. Lee charges me with having "suppressed the well-known fact," that of the three women lost by Mauriceau, under unavoidable hæmorrhage, one "died undelivered." I have elsewhere explicitly stated, (as Dr. Lee ought to know) that the table in question was expressly "made to shew the maternal mortality in all varieties of the complication,

* In his column of unavoidable hæmorrhage, Dr. Churchill has, opposite the name of Dr. Ramsbotham, given 44 cases, the number of partial placental presentations described by Dr. Francis Ramsbotham (the son), in the MEDICAL GAZETTE of 1834, vol. xiv. p. 690.

and under *all* modes of treatment, whether the membranes merely were ruptured, or the child turned, or the placenta spontaneously expelled, or the mother sunk without aid of any kind."

The same extract is a sufficient reply to Dr. Lee's analogous objection regarding Busch's cases. My report of the placental cases at the Royal Maternity Charity is again adduced by Dr. Lee, not once, but twice (pp. 1107 and 1198). But I feel assured that to every member of the profession, the explanation which I have already published on this point is satisfactory. "Of Schweighauser's cases I have not yet," says Dr. Lee, "succeeded in finding any report." But Dr. Lee *may* find, if he pleases, Schweighauser's own report of them, if he will take the trouble to consult the well-known work of that author, to the pages of which I have referred in the foot-note appended to his cases in my paper in Dr. Cormack's Journal for March last.

Again, Dr. Lee charges me with the "omission" from the table of "Portal's 18 cases, of which 1 only proved fatal." I have already elsewhere explained that this error is one attributable to Dr. Lee's *own* inaccuracy, for in constructing the table, in order to arrive at an accurate and statistical result, "I noted down all the lists of instances I could detect, in which ten or more cases were reported. Latterly, I have found that I erroneously omitted Paul Portal, because I relied on Dr. Lee's accuracy, when, in his Clinical Midwifery, he stated that Portal's work contained an account of 'eight' cases only of unavoidable hæmorrhage, while it contains notices of the results of fourteen." (MED. GAZ. p. 1016.) As seen in the quotation I have given above, Dr. Lee now increases the number of Portal's cases from "eight" to "eighteen." It may be proper to add, that the last number is as incorrect as the first.

In my observations on unavoidable hæmorrhage, in the MEDICAL GAZETTE of October 19, I pointed out that of *all* the cases of turning in Dr. Lee's private and consultation practice, reported by himself in his Clinical Midwifery, the mothers operated upon died in the proportion of 1 in every $2\frac{4}{10}$. Dr. Lee pronounces this to be a "most extraordinary and astounding misrepresentation," and declares, that the "mortality, instead of being 1 in $2\frac{4}{10}$, was virtually less than 1 in 9." My calculation may possibly appear, to such as have not thought much upon the subject, "most extraordinary," but nevertheless it is strictly accurate; for Dr. Lee, in the work referred to, has detailed altogether 24 cases of turning in placental presentations, and 10 of these 24 mothers died, or exactly 1 in every $2\frac{4}{10}$. The ten fatal cases are those marked

No. 1, 7, 12, 15, 16, 22, 25, 26, 29, and 35, in his Table in the GAZETTE of Oct. 24.*

Certainly not one of our great surgeons would be listened to, if, in order to explain away the mortality among his lithotomy patients, he gravely averred that some of them had *not* died of the operation to which he had subjected them, *because* the immediate cause of their death was laceration of the bladder during the operation, or subsequent inflammation in the bladder and parts concerned. Yet to explain away the number of maternal deaths that have occurred in his practice, under turning in placental presentations, Dr. Lee adopts exactly this line of argument. One of his patients, he argues, died of laceration of the uterus; and of the ten cases that terminated fatally after the operation of turning, it will be seen that three women died of uterine phlebitis long after delivery,—“a circumstance,” Dr. Lee continues, “which could not justly be attributed to the operation.” In order to confute this reasoning, it is only necessary to quote Dr. Lee himself; for on this, as on other occasions, his published opinions of 1844 are quite different from his published opinions of 1845. In his Lectures printed last year, after shewing, (p. 345) that in his cases of shoulder and arm presentations he had lost, under the required operation of turning, 7 women from rupture of, and 13 from inflammation of the uterus, Dr. Lee adds, “Laceration and inflammation of the uterus are, *therefore*, the consequences of turning chiefly to be dreaded.”—(See Dr. Lee's Lectures on Midwifery, p. 344.)

In my next communication I shall take occasion to shew that Dr. Lee's anatomical and pathological reasonings on the subject in discussion, are as unsound as I believe his statistical arguments and criticisms to be.

USE AND MISUSE OF THE SPECULUM.

VALUABLE as is the speculum, its use has been indiscriminately and unnecessarily urged. In slight cases of uterine irritation and leucorrhœa its employment is prejudicial; while, in leucorrhœal discharges of long standing, and in menorrhagia of months' and years' continuance, its introduction cannot be too strongly recommended; for it must never be forgotten, that these maladies rarely exist long, without more or less of organic change. If there be a suspicion of structural mischief about the lower part of the uterus, there ought to be no delay, not only in touching, but in seeing the seat of the suspected disease.—*Dr. Ashwell on the Diseases of Women.*

* [Dr. Lee's calculation refers to those cases only in which turning was performed by himself. See p. 1109.—ED. GAZ.]

REMARKS ON THE
TREATMENT OF CASES OF PLA-
CENTA PRÆVIA,
BY REMOVAL OF THE PLACENTA, AND NOT
BY TURNING.

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Late Obstetric Physician and Lecturer to Guy's
Hospital.

THERE are professional controversies in which it is undesirable to interfere; but the dispute as to the principles which ought to govern the practice in many cases of placental labour is not of this kind. I wish, however, to avoid all personality, and to eschew entirely the laborious, and in great measure unprofitable, statistical details, which have excited so much discussion between the chief disputants. My purpose is to explain with great diffidence the views which, after twenty-five years' observation, appear to me to be correct: and if I do not frequently mention the names of the gentlemen who have borne the most conspicuous part in this controversy—and they are both my personal friends—it is because they stand too high in professional estimation to require any praise of mine; nor is there any fear that their reputation will be injured but by themselves or their own pens. The necessity for disturbing the existing practice arises from the *assumed great fatality to the mothers attendant on turning the child prior to the removal of the placenta*. Dr. Simpson says, the average rate of mortality in placental presentations is 1 in 3; and he strengthens this statement, perhaps not quite fairly, by the declaration of a "doubt, if the most fatal of all human diseases, the plague itself, be found to destroy so large a proportion of those attacked." There should be, to render this argument effective, something like resemblance in the things compared; and especially in the number of cases. I cannot believe that this is a correct average of maternal fatality. I have had at least twenty cases of complete placenta prævia, in consultation and private practice (exclusively of the hospital), during the last twenty-five years, with only two deaths. In one of these, a patient of Mr. New, of Mile End, the first gush destroyed life; and in the second, two large scirrhus tumors in the walls of the uterus (vide Guy's Hospital Reports, accompanied by drawing of the growths), there was gangrenous degeneration.

My friend and colleague, Dr. Lever, in answer to some inquiries as to our Lying-in Charity at Guy's, thus writes, Oct. 28th, 1835:—"Between the years 1833 and 1840, 4666 women were attended by our

pupils. In 14 cases presentation of the placenta occurred; in 9 the placenta entirely covered the os uteri, while in 5 it partially presented: in all, delivery was accomplished by the operation of turning. *Eight* of the children were still-born; in one, the head was unavoidably lessened, owing to the contracted state of the pelvis. (this operation had been resorted to in her previous labour); *two* of the 14 cases terminated *fatally* to the mother; in the first case the patient's age was 34; it was her *ninth* confinement, and you well remember she underwent the operation of transfusion with temporary benefit, but died the day after delivery. In the other case, the patient's age was 39; it was her sixteenth confinement; she had previously to the occurrence of labour been exhausted by two severe losses of blood, without sending for assistance: she died soon after delivery."

"From Oct. 1840 to Oct. 1845 there have been 11 or 12 cases, but as yet I am unable to say how many were partial or how many complete presentations; neither can I give you the maternal mortality; but I trust, when the table is completed, it will show results as favourable as our first report." In one of the two fatal cases alluded to by Dr. Lever, where I transfused, it was our and the late Mr. Tweedie's conviction, that the delivery was attempted too late, and that even blood itself could not preserve the fast-sinking life of the patient. From extensive inquiries amongst men largely engaged in midwifery practice, I am persuaded that Dr. Simpson's rate of maternal fatality, under this form of presentation, is *far* too high.

I come now to the novel and startling proposition, "that in placenta prævia the discharge issues *principally* or *entirely* from the vascular openings which exist on the exposed placental surface." Dr. Simpson says, "he knows no reason, anatomical or otherwise, for alleging that the open placental orifices do not bleed." It would have been well if these orifices and their capacities had been demonstrated. I have never yet seen them, although I have subjected numerous placenta to examination, both before and after injection: nor have I been more successful when I have carefully peeled off an adherent placenta after death. It is, on the contrary, easy enough to shew to the satisfaction of the most incredulous, the great openings existing in the lining membrane of the uterus, exactly opposite the attachment of the placenta, and which are covered by interposed decidua. Into many of these the tip of the finger may be inserted, while their course and extensive communications with the uterine sinuses, full of blood, is evident at a glance. Surely such an organization affords the clearest

proof of the *source* of the hæmorrhage in placenta prævia. By some unfortunate accident the placenta and the intervening decidua are detached, and as the uterus is full of blood, there is no barrier to prevent its escape; in moderate amount if the detachment be slight, but excessive in quantity if the separation is considerable, and attended with excitement and hurry of the heart's action.

The most carefully made injections of human placenta testify to the fact, that their vessels are innumerable and small; just what might be supposed, from the purposes they serve. The foetal economy at no time requires such a supply of blood as must of necessity be furnished if vessels or orifices existed in the placenta capable of pouring out the vast quantity of blood which sometimes, after one gush, proves fatal to the mother in placenta prævia. I do not believe that the placenta *ever* contains anything like the quantity of blood which is often lost in one or two gushes at the commencement of a placental labour. A few days ago I subjected a placenta, expelled immediately after the birth of the child, to the firmest pressure I could make, without obtaining from it more than two or three ounces of blood; and often I have made sections of this viscus, without discovering more than the blocking up, by partially coagulated blood, of its sponge-like passages. A further corroborative proof of the little probability of bleeding, when the placenta is partially detached, is furnished by the fact, that extensive puncture of its substance by the trocar, when in apposition with the uterus at the fundus, or when implanted over the os, is not followed by hæmorrhage. In a case of retroversion of the uterus, published by Mr. Baynham, of Birmingham, he says, "It is worthy of remark, that notwithstanding the trocar had *twice* perforated the substance of the placenta, *near to the insertion of the cord*, hardly a tea-spoonful of blood was lost." In a case of Mr. Hunter's, of Tower Street, July 1844, "where I was consulted, and where it was, for the fifth time, necessary to bring on labour prematurely at the 7th month, the placenta was perforated five or six times, owing to its being over the mouth of the uterus; but neither previously, during, or after labour, was there hæmorrhage." The very continuous sound emitted by the blood as it passes from the uterus to the placenta, strengthens the conviction that it is by numerous small vessels, and not by large trunks, that the vascular communication is maintained. But I forbear to occupy further space on this part of the subject; only remarking, that Dr. Lee's observations, at page 1106 of your journal, are, in my estimation, altogether unanswerable.

I shall conclude by a few strictures on the new practice. These I should not have made if the subject had been less important; but it is not a dispute about a mere dogma in physiology, or an obscure point in foetal organization: it is a recommendation to do something which, I believe, is very rarely required to be done, and which will often be accomplished at great risk, and not unfrequently with certain injury to the mother, and invariably with the loss of the life of the child.

As I am especially urging the limitation of a practice which has, I fear, far more of novelty than of safety for its recommendation, I mention with pleasure, that my friend Dr. Simpson does not press its universal adoption. But it is not almost certain that tearing away the placenta through an aperture too small to admit the tip of the finger, for the purpose of gentle and gradual dilatation, will not often be either easy (if even practicable) or free from danger. For my part, I can scarcely understand how, through a rigid, small os uteri, the often-times bulky, and, according to Dr. Simpson, highly vascular placenta, can be brought without incurring the certainty of large hæmorrhage. *I can suppose*, that when the liquor amnii has fully escaped, and the placenta has been, whether safely or not, removed, further hæmorrhage may be stayed by contraction; for, as the uterus has thus got rid of a considerable portion of its contents, contraction to a greater or less extent will of necessity ensue, the restraint of further bleeding being thereby secured. But is there no danger in this meddlesome midwifery? Is there no risk that the finger-nail, the common sound, or the bougie, as recommended to be used by Dr. Simpson, may wound the developed and highly vascular cervix, originating excessive hæmorrhage at the time, or protracted bleeding afterwards? If all this may be safely done, why may not one finger, used as a dilator, make way for the introduction of a second, and a third, and, eventually, of the whole hand, for the purpose of turning? I have often commenced the process of dilatation when the ring of the os uteri has seemed as hard and as rigid as cartilage, and yet in no instance have I failed, and generally in a moderate time, to accomplish a full and safe dilatation; thus affording to the child at least, and, as I think, to the mother also, a higher chance of life, and greater immunity from danger. The generally fatal cases are those where one or two large gushes at once deprive the mother of almost all chance of life; or where the repetition of hæmorrhage has been disregarded too long; where, as in the middle and higher classes, early and vigilant attendance is afforded, the favourable moment for commencing dilatation may usually be seized.

I trust in these remarks nothing is apparent beyond the desire to prevent danger from an unadvised interference in cases of difficulty and hazard.

Grafton Street, Bond Street,
Nov. 1845.

FALLACIES OF MEDICAL STATISTICS.—AGE
MOST LIABLE TO APOPLEXY.

AN ingenious French writer, Dr. Avenel, lately published some statistical notes on sudden deaths, and the frequency of the respective causes. We extract some comments from the *Annales D'Hygiène* on the plan pursued by him, which, notwithstanding the obvious fallacy involved in it, is still frequently pursued by medical writers, in tabulating the results of their experience. With regard to *apoplexy*, Dr. Avenel gives the following summary of the ages at which the disease is most liable to attack individuals:

From 20 to 30 years	3 cases.
30 to 40 . . .	4
40 to 50 . . .	21
50 to 60 . . .	16
60 to 70 . . .	14
70 to 80 . . .	2

The number 21 being the highest, led the author to conclude that persons between 40 and 50 years of age were most liable to apoplexy, and carrying out his principle with respect to the other ages, that next to this the most frequent period of attack was from 50 to 60, then from 60 to 70. Now it is clear that in order to judge how far age has an influence on the occurrence of a disease, it is necessary to look not only at the number of cases which occur at a particular age, but also at the number of *individuals living at that age*, and the inferential proportion can only be safely based on the latter. Thus, among ten millions of persons living, there are no less than 2,940,000 of the age of 40 years, while there are not more than 887,000 of the age of 60 years, which reduces the proportion of those living at 60 years to about one-third of the number living at 40! Now the number 14 (from 60 to 70) given by Dr. Avenel, instead of being the *third*, is more than one half of the number 21: hence it follows that apoplexy is a much more frequent disease at the age of 60 than at the age of 40. The attacks are apparently more frequent at the age of 40, simply because there are three times the number of persons living at that age.

By the statute of 18 Edward the 2d, butchers and cooks were made punishable for selling unsound meat, or measly pork: for the first offence, to be fined; for the second, to be set in the pillory; for the third, to be imprisoned; and for the fourth, to be banished from their place of residence.

ON MORTIFICATION OF THE
EXTREMITIES.

By R. A. STAFFORD, F.R.C.S.

Surgeon Extraordinary to H. R. H. the Duke of
Cambridge, and Surgeon to the
St. Marylebone Infirmary.

DURING the last long-continued and cold winter many cases of severe frost-bitten feet occurred, and in some instances so much so as to cause gangrene. The two following having lately been admitted into the St. Marylebone Infirmary, I beg to relate them, with a few observations on mortification of the extremities.

CASE I.—Hannah Bangham, æt. 44, admitted into the Infirmary, Feb. 17th, 1845. She was in a very low state of health, having a feeble pulse at 84, and all her extremities were of a blue appearance. She had suffered much from cold, and for years had never felt warm, excepting in the summer. A week before she came into the Infirmary she had been lying about the streets, and was obliged to take refuge in the Asylum for the Houseless Poor. In consequence of this wretched state of existence her feet became chilled, and she lost for a time all sensation in them. Afterwards she was seized with intense pain in the toes of the left foot, which at first swelled, looked of a deep red colour, and at length became black, and having no feeling in them. At the time of her admission the first three toes were in a state of mortification at their second and third phalanges. The other parts of them were red and inflamed, and attended by an extreme burning pain.

She was ordered to keep in bed, to constantly use an evaporating lotion upon the inflamed part.

R Spiriti Rectificati, ʒvj.; Mist. Camphore, ʒvj. M. ft. Lotio; and at night to apply a poultice made with a solution of Chloride of Lime. The diet was strong broth, milk, and 2 eggs.

25th.—The health of the patient was somewhat improved, but she was still in a very low condition, and the pulse remained weak. The pain in the wound also was very severe. Ordered—

R Quinæ Disulphatis, gr. ij.; Acid. Sulphurici Diluti, ℥v.; Aquæ Destillatæ,
— ʒj. M. ft. Haustus ter die sumendus.

R Opii, ʒss.; Aquæ Ferventis, ʒvj. M. ft. Lotio. R Ext. Opii, gr. j. Ft. Pil. 6tis horis sumendus.

A meat diet was allowed; porter, 1 pint per diem, and 4 oz. of red wine.

March 5th.—One grain of Quinæ Disulphatis was added to the draught.

March 10th.—A line of separation between the living and dead parts had begun to form. The patient was materially improved in health, and the pulse had increased in fulness and strength. The mortified extremities became gradually detached, and she was discharged from the Infirmary on the 1st of June, having lost the second and third phalanges of the first, second, and third toes.

CASE II.—Sarah Ackroyd, æt. 65, admitted April 14th, 1845. Had, during the whole winter, been much exposed to cold, and working in a room where there was but little or no fire, could not keep her feet warm. One day she completely lost the sensation in them, after which the left became inflamed, and the points of the toes were of a dark blue colour, almost approaching to black. Sloughing of their extremities now commenced, and more particularly at the second toe. She suffered extreme pain. Ordered, with the view of soothing the pain:—

R Ext. Opii, gr. j. ft. pil. sextis horis s. Fetus Papaveris.

As she had a cough, with considerable expectoration, she took —

R Aceti Scillæ, ʒxx.; Spiriti Ætheris Nitr., Oxytelis, ʒj. ʒxl.; Aquæ Menthæ Viridis, ʒiss. M. ft. haustus ter die sumendus. Diet, fish and broth.

April 20th.—The pain in the foot was relieved, but the inflammation still continued.

R Spiriti Rectificati, ʒvj.; Misturæ Camphoræ, ʒvj. M. fiat lotio.

May 1st. — The cough having left her, and as she remained very weak, she was ordered—

R Ferri Sulphatis, Quinæ Disulphatis, aa. gr. iss.; Acidi Sulphurici Diluti, ʒiij.; Aquæ Menthæ Piperitæ, ʒj. M. ft. haustus ter die sumendus. Diet, meat; porter, one pint.

She continued this treatment, and the points of all the toes and nails sloughed off; but no bone was lost excepting in the second toe, in which

both the second and third phalanges came away.

She was discharged on the 10th of June, being quite well, excepting the loss of the greatest portion of the second toe.

Practical observations.—Mortification of the extremities may arise from various causes; from cold and a feeble circulation, as in the two foregoing cases; from ossification of the arteries, as in gangrena senilis; from some diseases of the heart; and from inflammation and other accidental circumstances. When mortification arises from cold and a feeble circulation, it is evident that in the first instance there is a diminished circulation through the part: either there is a stagnation of blood in the blood-vessels, the veins becoming congested, and being unable to return the blood, and hence the circulation through the arteries is impeded; or that it has become coagulated in them; or that the arteries, the veins, absorbents, and capillaries, are so injured by cold, they can no longer carry on the circulation of the vital fluid. But to understand this description of mortification, we must take a review of frost-bitten parts. An individual shall be exposed to extreme cold in frost and snow, without having shelter. At first a general chilliness and coldness of the whole frame will be experienced. The action of the heart and the circulation generally will be diminished. All the extreme points chiefly suffer; the circulation in these either partially or wholly ceases; the vessels contract, or the blood contained in them becomes coagulated, and the structure of the part is broken down: consequently it can no longer carry on the circulation; it therefore dies and decays. We see the same in the vegetable kingdom. In the sharp nocturnal frosts of the spring and autumn, the extremities of plants and shrubs are cut off. The fluid or juice contained in their tubes, which circulate the sap, becomes more or less frozen, and the texture of the tubes themselves destroyed: hence they droop their heads and die.

When mortification of the extremities takes place from ossification of the arteries, it is owing to a diminished circulation in the part. There is a deposit of phosphate of lime on the internal coat of the arteries: consequently their calibre is lessened, and so much

so, that the extremities do not get their natural supply of blood. The deposition increases, until at length the smaller vessels become, if not wholly, nearly blocked up, either with bony matter or the coagulation of their contents. The elasticity and the contractility of the arteries are destroyed, and the vessels become mere passive tubes, allowing the blood to flow through them in the same manner as water flows through an inflexible leaden, wooden, or earthen pipe. From this time a chronic inflammation of the toes supervenes, and as the circulation diminishes the parts become of a deep red or blue colour; from thence black; and they at length mortify. The process by which this is effected is very gradual. At first simply the points of the toes slough. In process of time the third, second, and first phalanges become affected and mortify, and so on, gradually destroying the foot as the circulation of the blood is withdrawn.

Mortification of the extremities not unfrequently occurs from a disease of the heart, or from a sudden obstruction of the circulation. When it arises from the former there is always an impediment to the passage of the blood out of the left ventricle; either that there is hypertrophy with dilatation of that cavity, or some other disease, not allowing the blood to make proper egress out of it. Hence the more distant parts, and more particularly the lower limbs, do not get a sufficient circulation through them. In a case which occurred in the St. Marylebone Infirmary a short time back, under the care of my colleague, Dr. Harrison, where the lower limbs mortified before death, owing to a disease of the heart, it was found on dissection that both the left and right ventricles were considerably hypertrophied and dilated.

When mortification is produced from a sudden obstruction of the circulation, it is owing to a diminished supply to the parts below. For instance, when the femoral artery is tied for popliteal aneurism, and the anastomosing branches are not of sufficient size to carry on the circulation, there is not enough blood sent to the extreme parts of the limb to nourish it. Hence, the warmth of the part is so much below the natural temperature, that the blood contained in the arteries and veins becomes coagulated. The

arteries send on the blood in so small a current, that the veins have little or none to return; consequently, a stagnation in all the vessels is the result, and hence the limb mortifies.

Mortification occurring from inflammation solely is of a very different character from either of the preceding. In such case the action of the part is too violent, the circulation through it is so much increased in rapidity that the vessels become distended, dilated, and at length are broken down. The arteries, the veins, the absorbents, and the whole structure, is disorganized, and they can no longer carry on their natural function; circulation ceases, and the death of the part consequently occurs.

The treatment of mortification of the extremities must depend upon the cause from which it arose. If, as in the present two cases, it is brought on from cold and a feeble circulation, our object will be, first, to arrest its progress, and secondly, to restore the patient to that state of health which will favour the separation of the living from the dead part. Soothing applications should be applied to the wound, such as fomentations of the Decoctum Papaveris, poultices mixed with a solution of chloride of lime, yeast, and charcoal, and a solution of opium, &c. and if the inflammation of the living parts connected with the mortification be great, a spirituous evaporating lotion will be found of great service, as may be seen in the cases related. It may be observed, that there is always more or less inflammation in the living part immediately adjoining the sloughing part. In some cases it will run so high as to threaten a spreading of the mortification. In such I have found the repeated application of leeches to be of the greatest service, and to arrest its progress. I have also found when, in gangrena senilis, the pain is very severe, and when the patients describe it as "a burning pain," the part at the same time looking of a deep red colour, that the application of leeches has been attended with great relief. I have employed them under these circumstances in many cases, applying three or four of them every second or third day, and their use has uniformly been productive of considerable benefit.

The constitutional treatment of mortification of the extremities is of great

importance. It is evident, from the examples which are before us, that when it arises from cold, and a feeble circulation, the general health should be supported. The power of the heart is not as great as it should be; consequently the blood is not thrown in sufficient quantity as to allow of a free circulation through the extremities. More nourishment, therefore, should be taken; tonics or stimulants, such as quinine, steel, ammonia, &c. should be administered. In all cases of mortification, after the inflammatory symptoms have abated, wine may be allowed; indeed, it will always be found beneficial. Such treatment will strengthen the circulation and improve the health, whereby nature will have more power to form a line of separation to throw off the mortified part. Sometimes the pain of the part is so severe adjoining the mortification, and more particularly in gangrena senilis, that it is hardly supportable. In addition to the local remedies already recommended, I have found the administration internally of opium, morphia, and other narcotics, at stated intervals, to afford great relief. Mr. Pott mentions the good effect of this treatment. He considered the administration of opium in proper doses, and at stated intervals, to act almost as a specific in this disease.

But there are some cases of mortification of the extremities which arise from inflammation alone. In these a very different treatment must be pursued. We must employ every means in our power to reduce the inflammation which is the cause of the disease. The antiphlogistic system should be strictly pursued; and even in those cases where the patient is plethoric, blood-letting might be adopted: this remedy should, however, be employed very cautiously, and only in the first stages of the disease. Generally speaking, one general bleeding is quite sufficient. After this, if the pulse continues quick and strong, moderate diet, purgatives, antimonials, and other remedies calculated to reduce the circulation, may be administered. This treatment, however, must not be pursued too long; for the moment there is an alteration in the strength of the pulse, that is to say, when its frequency is lessened, and its beat lowered, then tonics are indicated. Bark, quinine, wine, porter,

and other nourishing diet, may now be taken with benefit, and all those means may be adopted, both generally and locally, which will favour the separation of the living from the dead part.

In some cases of mortification of the extremities, the death of the part takes place, and spreads so rapidly, that no other means can be adopted but amputation of the limb. This operation should only be performed when it does not arise from a specific cause, such as from ossification of the arteries, &c. It may, however, be adopted when it is produced from violent inflammation, gun-shot wounds, from external violence, and other accidental circumstances.

28, Old Burlington Street,
Oct. 1845.

MEDICAL SCHOOLS OF LONDON IN 1804.

IN a number of the Medical and Physical Journal for 1804, we find the metropolitan medical schools mentioned to be—the United Schools of St. Thomas's and Guy's Hospitals, the Westminster Hospital, and St. Bartholomew's. At St. Thomas's and Guy's, as well as at St. Bartholomew's, the course of study comprised Anatomy, Physiology, Surgery, Chemistry, Materia Medica, and Midwifery. In respect to the Westminster Hospital, no details are given. At the Windmill Street School, Anatomy and Surgery were taught by Mr. Wilson and Mr. Thomas. The Blenheim Street School was more complete, Anatomy and Surgery being taught by Joshua Brookes, Medicine and Materia Medica by Dr. Hooper, and Midwifery by Dr. Batty. Among the notices of nine private courses of lectures, we find—three on Medicine, three on Midwifery, two on Anatomy and Physiology, and one on Surgery. It appears to have been the custom at this time for the lecturers on the Practice of Medicine to make Chemistry and Materia Medica part of the same course! Out of the twenty-nine lecturers whose names occur in the list, we believe that there are only two survivors, Mr. Thomas and Mr. Carpue.

CHEMICAL PATHOLOGY.

M. CAPEZZUOLI, to whom we are indebted for one of the best tests for sugar when existing in the animal fluids—namely, the oxide of copper—has, in continuing his observations, detected the existence of sugar in pus evacuated from a small abscess in a diabetic patient; also in the serous fluid within the pericardium, and in bile collected from the gall-bladder, in another diabetic person after death.—*Gaz. Médicale*.

RECORD OF CASES.

BY THOMAS MAYO, M.D. F.R.S.

Physician to the Infirmary of St. Marylebone.

(Continued from p. 1159.)

Case of Double Consciousness.

IN the spring of 1831 my attention was called to a very singular nervous affection, of which I subjoin some memoranda. It was considered by me, and so named at the time, an unusual form of hysteria. I afterwards found that similar cases have been arranged by Dr. Abercrombie under a specific title, that of "double consciousness." It also possesses common points with the remarkable states produced by the manipulations of the mesmerisers.

April 1831.—Elizabeth Moffat, resident at Tunbridge Wells, a healthy girl, aged about 18, having swallowed by mistake some Unguentum Lyttæ, a long train of symptoms of pain and irritation in the head, thoracic region, and bladder, ensued. These gradually subsided, but left an extreme susceptibility of pain in the head from either sound or contact, so that in either case she readily became insensible, particularly from pressure on the vertex. On this physical state the following mental phenomena supervened. She appeared to pass alternately, and in succession, through two different states of mental existence, or rather, I might say, her normal state was exchanged for an abnormal one, which I shall presently describe, out of which she would return, sometimes after it had lasted some weeks, into the normal one,—her passages from either state into the other occurring suddenly. The phenomena of her abnormal state were those of extreme excitement, entirely dissimilar to her natural habit, which was dull and quiet. Under this state she made considerable progress in needle-work, and in many points of intellectual acquirement, far beyond the energy and ability of her normal condition. She became also lively and spirited in conversation. At the same time she lost her consciousness of her relation to her father and mother, and former associates, calling them by wrong names. She was, however, at no time incoherent. On the subsidence of her abnormal state, her recollection of her father, mother, and friends, in

their just relation to her, would return, and she would resume her quiet and dull character; she would also resume her true position and respectful manners towards some ladies of Tunbridge Wells, from whom she was receiving kindness and instruction; meanwhile, in both her states, the normal and abnormal one, the associations which have taken place in each are obstinately retained without the smallest confusion, but in each with a total oblivion of what has been learnt in the other state. Thus, in her normal state, she will have entirely forgotten all those manual or intellectual acquirements which she may have made during that of excitement, and every attempt to instruct her in these points will utterly fail.

From the scantiness of my notes, and an unwillingness to trust my memory, I am unable to supply adequate particulars of this case: for instance, I cannot answer the question, under what conditions, whether from pressure on the vertex, the transition from one state into the other seemed to occur? I can affirm, generally, that the case received no benefit from medical measures, that it gradually lost its mental peculiarities, and the normal state became permanent. But in the meanwhile circumstances of misconduct in the girl's relatives were discovered, which led to an impression among her patrons at Tunbridge Wells that the case was an imposture; and, fortunately perhaps for the patient, it was left to itself.

I have observed that a suspicion of simulation in the above case occasioned it to be dismissed with unbelief. It is probable that a more scrutinising eye ought to have been applied throughout the inquiry into it. But does the discovery of simulation in hysterical disease, to which the above case is analogous, involve a total rejection of every other symptom of that state? I say, of every other symptom, for simulation itself is a symptom of hysteria, though not an inseparable one. What is more common than to see young persons become deceitful, to the extent, *exempli gratia*, of pretending incapacity to take food, while they are covertly taking articles of indigestible food to a great quantity? The mental pathology of that state is fully as singular as its physical. I do not believe that Elizabeth Moffatt could have simulated all

the phenomena of *her* case; and when I find that case, singular as it is, forming one under an assigned medical head on the authority of an eminent pathologist, I more readily give some weight to my own convictions on this subject.

Much of the above reasoning has a bearing on that train of symptoms which I have adverted to as having common points with the above case; I mean, the trance produced by the manipulations of the mesmerisers. Is it philosophical to decline inquiry into these symptoms, *because* they may have occasionally been exaggerated, or even put on, when adequate evidence is afforded of their general reality by unbiassed and numerous observers? But if this question cannot be answered affirmatively, let me put another, with the same intention, which naturally springs out of it. Is it wise in *us*, who desire to obtain for our tripartite profession exclusive privileges from the legislature, to prove that we are unworthy of these privileges, by refusing inquiry into practices which offer on extensive authority an antidote to pain and irritation in their direct forms? We allow our nurses to rock our infants to sleep. Are we to be told, that it is absurd and unjustifiable to produce a form of sleep during which pain is unfelt, and irritation allayed, by movements of the hands? Yet such a proposition I have heard maintained by an eminent and valued member of our profession in a wise and learned assembly.

I allude here to the ordinary phenomena of mesmerism—the trance, which the operators in these cases appear to have the power of producing and terminating at will. Unless we propose to establish a new theory of the value and effect of testimony on belief, or of the utility and desirableness of adding to our means of subduing pain and irritation, it is our *duty* to give a patient and candid inquiry into this subject, and to profit by it, if we may.

[To be continued.]

IN the 48th year of the reign of Henry the Third, as appears from the patent rolls of that year, quoted by Philipot, the King granted a free pardon to Frances de Balsham, for that she was hanged for felony at Canterbury, from nine of the clock on Monday to the rising of the sun next day, and yet was still alive!

PRACTICAL OBSERVATIONS ON SOME OF THE MORE IMPORTANT SPECIAL DISEASES OF THE SKIN.

By JOHN ERICHSEN, F.R.C.S.

Lecturer on Physiology and Surgery at the
Westminster Hospital, &c. &c.

ACNE.

WHETHER we consider the frequency of its occurrence, the disfigurement it occasions, or the obstinate and chronic form it frequently assumes, there are few diseases of the skin better deserving the attention of the medical practitioner than Acne.

The frequency of the occurrence of acne is such, that few people reach the middle period of life without having had an occasional attack of it; though, in the great majority of instances, in too trifling a form to require medical treatment. The disfigurement it occasions is such, as not unfrequently, when occurring in persons moving in the higher ranks of society, to embitter life; and in the lower classes, as amongst servants for instance, to prevent the patient gaining a livelihood. And the rebellious character that it assumes is such, that it is by no means uncommon to meet with cases that have for eight, ten, or even more years, resisted all plans of treatment that have been adopted for their relief.

The physical characters of acne are so well known to every practitioner, that it would be superfluous to give any very detailed account of them here; the more so, as it is not my intention to enter upon anything like a complete history of the disease, but rather to direct attention to certain points in its etiology and treatment, that appear to me to be of peculiar interest, and of direct practical importance.

The best and most practical classification of the varieties of acne is that by Gibert, who divides this disease into Acne disseminata, A. rosacea, and Mentegra. Willan and Bateman, followed by many of the more modern writers on the diseases of the skin, have divided acne into four species; but as the characters on which this division is founded are for the most part unimportant and transitory, being dependent on trifling modifications in the appearance, progress, and activity of the disease, they do not deserve to be

made the foundation for distinct and named varieties; which are valueless, as far as all practical purposes are concerned, and only serve to mystify a very simple subject.

Acne disseminata is well known to be essentially a chronic inflammation, of the sebaceous follicles, with accumulation of their contents, more especially of the face, shoulders, and chest, and more rarely of the extremities. In the ordinary cases of this disease we find these follicles in all states of obstruction and inflammation. We find a number of black points, aptly enough compared, by Alibert, to the grains of powder that are occasionally imbedded in the skin by a discharge of fire-arms; a number of indurated dusky red or purplish elevations, of all sizes, from that of a mustard-seed to a large cherry-stone, slowly maturing, with small yellow purulent heads; and after their contents have been discharged, whether naturally or artificially, giving rise to reddish or violet-coloured elevations, which either gradually subside, leaving the integument, frequently not till after some months have elapsed, of its natural appearance, or else giving rise to small oblong depressed white cicatrices. These cicatrices are most commonly met with on the shoulders and chest; rarely, if ever, on the face. In some very chronic cases of the disease I have seen hundreds of them scattered about the upper parts of the trunk.

Although this is the common appearance presented by *acne disseminata*, (the *acne punctata*, simplex, and *indurata* of Willan, &c.), when it occurs in young men, and tolerably robust females, there is another variety of the affection that has not received as much attention from writers on the diseases of the skin as it ought; but a knowledge of which is of much use in practice, as its treatment differs, as will hereafter be more fully shown, from that of the other varieties of *acne*. The form of the disease that I allude to appears to consist especially in an obstructive and chronic inflammation to a slight extent of the sebaceous follicle—of mild *acne disseminata* and *pityriasis*. It is characterized by small elevations of the integuments, seldom exceeding the size of a pin's head, of a light rosy colour, not very hard, and very seldom suppurating; the inter-

vening portions of skin being dry, rough, and desquamating, of a reddish hue, and readily flushed after exertion and meals. As far as my experience goes, this disease is confined to females, and principally to those moving in the better ranks of life. This variety of *acne* differs from the *A. simplex* of Willan and Bateman, by its tubercles being smaller, less disposed to suppurate, and of a less vivid red, but principally by the co-existence of a very marked furfuraceous condition of the adjacent cuticle. This form of the disease always appears to be connected with an asthenic state of the system; and the morbid condition of the cuticle, which is conjoined with it, is dependent, in all probability, on the tendency that there is in that state of the system to a desquamation and furfuraceous separation of the cuticle.

The etiology of *acne*, as of all other diseases of the skin, is very important, as it is only by a knowledge of the causes of a disease that we can arrive at a proper and rational mode of treating it; and there can be but little doubt that it is to a want of due attention to those circumstances, whether they be external agencies or constitutional actions, that occasion or predispose to the diseases of the skin, that so much empiricism still exists in the treatment of these affections.

The exciting causes of *acne* are very various: such as exposure to a hot sun or fire, to dust, to a cold wind, or a draught of cold air; bathing, or drinking cold fluids when heated: eating indigestible salted, or highly spiced articles of food, the habitual use of spirits, wine in excess, &c. may all excite an attack of *acne*. But whatever be the immediate exciting cause, there must be a predisposition to the disease in the system. *Acne* is never, I believe, in its more severe forms, a mere local affection, but invariably depends for its origin on some constitutional cause, which has predisposed the system to the occurrence of the complaint. On looking over the notes of 97 cases of *acne* that have been under my care during the last two or three years, I find that in only three instances could no constitutional cause be discovered for the disease, which appeared in two of these cases to be excited by the patients bathing in cold water whilst heated.

The relative liability of the two sexes to acne is differently stated by authors. Thus Bateman is of opinion that it occurs most frequently in males; Gibert that acne rosacea is most frequently met with in women; and Cazenave that the disease attacks the two sexes equally.

On analyzing the 97 cases, I find that 59 were females, and 38 males; showing a very decided preponderance on the side of the females. It must be borne in mind, however, that this is not, in all probability, a very just estimate of the relative liability of the two sexes to the disease, although it may be of those who seek medical advice for it. Females, being more solicitous about their personal appearance than males, apply for treatment, when labouring under comparatively slight attacks of acne; whereas men do not trouble themselves about it, unless it be so severe as to produce material discomfort. This consideration will induce us to attach less importance to the apparent difference in the liability of the two sexes to acne; but still it is not sufficient to account entirely for the very great preponderance of cases on the side of the females.

The ages of the 97 patients were as follows—

Age.	Males.	Females.
Under 15		2
15 — 20	6	15—18— 5 18—20—11 } 16
20 — 25	16	15
25 — 30	5	11
30 — 35	3	8
35 — 40	2	2
40 — 45	3	4
45 — 50	3	1

From this it would appear that acne can scarcely in justice be termed, as it frequently is, a disease of puberty, it is rather one of the early adult age—31 out of the 97 cases occurring between the ages of 20 and 25; no male being affected before the age of 18, and only two females before that of 15, both of whom had completed their 14th year. Of the 16 females affected between their 15th and 20th year, only 5 were below 18; 11 being between that age and 20. We may, therefore, regard acne as being rather connected

with that period of life at which puberty has already taken place, and the individual is entering upon man or womanhood; the period at which the whole pilary system, with which the sebaceous glands are intimately connected, both in seat and function, is undergoing a rapid development.

The influence of season on the occurrence of this disease is not very easily ascertained, on account of its very chronic character. If, however, we may assume that the patients generally presented themselves for treatment at a time when the disease was more than usually troublesome, though it may have existed for some time, we may take the following table as an index of the relative severity of the disease in different months.

January . . . 15	July . . . 8
February . . 6	August . . 4
March . . . 11	September . 3
April . . . 9	October . . 5
May . . . 13	November . 1
June . . . 13	December . 9
—	—
67	30

We find, then, the greatest number of patients, more than two-thirds of the whole, presenting themselves for treatment in the first six months of the year,—from January to June; in those months, in fact, in which the greatest and most sudden variations of temperature occur.

On referring to the works of the principal writers on the diseases of the skin, we find but very obscure and frequently contradictory statements as to the constitutional causes that more immediately predispose to this disease; and little has been added to our knowledge on this part of our subject, since Darwin divided acne rosacea into the three species of *hepatica*, *stomachica*, and *hereditaria*.

Plumbe considered acne to be dependent on a plethoric condition of the system, leading to a more solid and adhesive secretion of sebaceous matter. Rayer states that the causes are very obscure; that in females it is occasionally connected with dysmenorrhœa, that it is met with in the best addicted to opium, may attack young men or suffering from alcoholism, to drinking spirits, Gibert* derives it from abdominal irritation.

* Malad. des Maladies Spéciales de la Peau, 2d Ed. Paris p. 208.

causes of acne than any writer with whose works I am acquainted; he recognizes its frequent connexion with the arrest of the menstrual function, the suppression of habitual discharges, or with the derangement of the digestive organs, and states that it is most commonly met with in bilious and lymphatic subjects. Bateman* is of opinion that it is of most frequent occurrence in persons of the sanguine temperament, and states, that it is not uncommonly connected with disorder of the stomach and bowels; with hæmorrhoids and phthisis pulmonalis. Cazenave and Schedel† state that it often occurs in robust individuals subject to abdominal irritation, or who are addicted to onanism. I may mention that masturbation is stated by all the French dermatologists to be a frequent cause of acne, and some of them, Gibert for instance, is of opinion, that the pimples of this disease reveal the disgusting habits of the patient. This statement appears to me to be too vaguely and loosely made to merit any attention. I have taken some trouble to ascertain if the deplorable habit alluded to existed in any of the patients that I have attended, and I have never in any one instance been able to ascertain that it did: no doubt, onanism, like every other circumstance that interferes with the general health, might occasion acne; but I do not think that there is sufficient evidence for it to be considered, in this country at least, a special cause of the disease. This point, though perhaps of no very great practical moment, is of some importance to patients labouring under acne, who usually suffer enough from the disfigurement produced by the disease, without the additional annoyance of being considered guilty of the practices alluded to. Some writers, again, attribute it to excessive venery; whilst others look upon extreme continence as a predisposing cause: both statements appear to me to require confirmation.

On analyzing the 97 cases that form the basis of this paper, I find that of the 38 male patients 16 were subject to habitual constipation; in 19 there was dyspepsia, usually of an irritative kind, and only in 3 with more or less irregular action of the liver and bowels.

instances was the general health perfectly good. In one of these three cases the disease followed small-pox, and in the remaining two instances it occurred in consequence of bathing whilst hot and perspiring.

In the 59 cases occurring in females the causes were equally well marked. In 39 cases there was disorder of the function of the uterus, usually with more or less stomach or liver derangement. Of these 39 cases, 34 suffered from amenorrhœa and dysmenorrhœa, in three there was menorrhagia, and in two leucorrhœa.

The intensity of these causes varied at different ages, but was most marked before the age of 20. Thus, of the 16 females affected with acne, who were between 15 and 20 years of age, no less than 15 were suffering from deficient menstruation, that function being regular in one only; whilst of the 15 cases that occurred in females between the ages of 20 and 25, there was deficient menstruation in 10; and of the 11 that were met with during the next period of five years the same condition prevailed in five instances. In 2 cases the function of the uterus had entirely ceased, and in 18 it appeared to be undisturbed. Of these last 18 cases there was more or less derangement of the digestive organs, in the shape of habitual constipation, or dyspepsia, in 16, and in the remaining two instances it appeared to be dependent on the gastric irritation consequent on spirit-drinking.

From this analysis it is evident that the menstrual function exercises considerable influence in predisposing to the occurrence of acne. This influence would appear most active in early life, at the time indeed when all the functions of the female economy are closely connected with those of the uterine system; and gradually to diminish in intensity as the patient advances in years, when the disturbing causes would appear to be most generally referrible to a disordered condition of the digestive organs.

That acne, when occurring in females, is much under the influence of the menstrual function, is also evident from the fact, that it is almost invariably more troublesome immediately before and during the menstrual period, proving less severe and appearing better immediately after this has ceased.

The variety of acne that occurs in

* Synopsis, 7th edition, p. 396.

† Edition.

† Abrégé pratique, &c. p. 233, 3.

any particular case is much influenced by the predisposing cause. Thus, where it makes its appearance in young adults, it is almost invariably the *acne disseminata* (*A. simplex*, *punctata*, or *indurata*); which, if the patient be a female, is most generally, as has already been shown, occasioned by some uterine disturbance. On the other hand, when the disease occurs after the age of 35, it usually assumes more or less of the *rosacea* variety, the skin surrounding the pustules being in an erythematous condition. These cases are no doubt occasionally dependent in the female on the changes that precede and accompany the cessation of the menstrual function, but most commonly in both sexes are connected with habitual abdominal irritation and obstruction; and not infrequently with a disposition to gout. The kind of dyspepsia with which this variety of the disease is most commonly connected appears to be that form of disease so well described by the late Dr. Todd, as the irritable gastric dyspepsia, with which more or less pyrosis, and an inactive condition of the liver and bowels, is frequently associated.

The treatment of *acne* varies materially according to the variety of the disease and its causes, as well as the age and sex of the individual affected. It is from want of due attention to the different circumstances that modify the disease, that so much difficulty is frequently experienced in its treatment, and that we may still exclaim with Plumbe, "that in the common treatment of this affection it is lamentable to witness the complete deficiency of attention to common surgical principles."

The treatment of *acne* is necessarily divisible into general and local.

The general treatment principally consists in removing any constitutional derangement that may exist.

If the patient be a young woman suffering from amenorrhœa, and in whom the circulation is weak and languid, the disease appearing to proceed rather from want of proper tone in the cutaneous capillary circulation, than from any other cause, the proper means must be adopted to bring about a return of the menstrual function, and to increase the powers of the system. In these cases the *Pil. Aloes c. Myrrhâ*, every second night, with a pill com-

posed of equal parts of sulphate of iron, of extract of gentian, and powdered ginger, night and morning, or ʒss. of the *Tinct. Ferri. Ammonio Chlorid.* with a few drops of the *Liq. Ammonia Aromat.* in infusion of Quassia, or from two to four grains of the citrate of quinine and iron, in cinnamon water, twice or three times a day, with the occasional use of the warm hip-bath, will be the most eligible plan; or if mineral tonics cannot be borne, the sulphate of quinine, or the bicarbonate of soda in any vegetable infusion, may be had recourse to. At the same time the liver should be acted upon by means of a few grains of Plummer's pill, or of mercury and chalk, every second or third night.

When the disease occurs in males, or in females more advanced in life, or in whom the menstrual function is properly and regularly performed, other means will be required. In these cases, as has already been shown, the disease will most generally be found to be dependent on more or less derangement of the digestive organs, which must, of course, be remedied by appropriate treatment.

If the patient be strong, robust, and plethoric, and there be an habitually inactive condition of the liver and bowels, a few grains of blue-pill, or of mercury and chalk, combined with the aloes and myrrh, or compound rhubarb-pill, may be advantageously administered twice or thrice a week, with an occasional dose of the compound decoction of aloes in the morning until a proper action has been set up in the *primæ viæ*. After this has been accomplished, the Plummer's pill every second night, in 8 or 10 grain doses, will be found a most invaluable remedy, increasing the secretory activity both of the liver and skin. As an habitual aperient in the cases under consideration, I have found none superior to Dr. Marshall Hall's aloetic pills at night, or to a wine-glassful of the Pulna water taken before breakfast—one half immediately on getting up, the other half after dressing. I have found this mineral water of the very greatest service in cases of *acne* occurring in middle-aged persons labouring under habitual abdominal congestion and irritation, the results of too generous living, in remedying which I think it fully deserves the high eulogium passed

upon it by Dr. Granville. It is more particularly in those very intractable forms of *acne rosacea* that are dependent upon habitual constipation and portal congestion, and that are connected with a gouty condition of the system, that I have seen great benefit derived from this excellent and valuable remedy. If there be a congested condition of the mucous membranes, lime-water, or, what is more agreeable perhaps, the Carrara water, and *sarsaparilla*, may be advantageously employed.

Although it is indispensably necessary, in the treatment of *acne*, to remove any existing visceral derangement, yet the disease will not, in general, yield to these means alone; and it will be requisite, independently of local treatment, to have recourse to measures that will act more immediately and directly on the seat of the affection. For this purpose the alkalies are usually employed, and by far the most efficacious of these preparations is the popular one of the *Liquor Potassæ*, which appears to act almost specifically in *acne*, combining probably with the oily matters of the thickened sebaceous secretion, and thus facilitating its escape from the follicles. In order that the *liquor potassæ* should exercise its good effects, it should not be given sparingly. It is perfectly useless to anticipate any benefit from doses of 10 to 15 minims; and I fully agree with Dr. A. T. Thomson in the opinion, that much of the difficulty attending the treatment of *acne rosacea* has arisen from giving the *liquor potassæ* in too small doses. I have never found any inconvenience from beginning with doses of 25 or 30 minims of the *liquor potassæ*, and gradually carrying it up to 60 or 70 minims twice a day, provided it be taken in a sufficiently large quantity of fluid: if this precaution be not attended to, it will be found to produce irritation of the stomach. The vehicle that I most generally order it to be taken in is the infusion of nettles, made by pouring a quart of boiling water on a large handful of common nettles, and allowing it to infuse till cold. This infusion, which appears to exercise a very considerable influence on the skin, is the best vehicle with which I am acquainted for the administration of the *liquor potassæ*, and should be taken in doses of from half to two-thirds of a

tumblerful twice a day. When there is an atonic condition of the stomach, or of the system generally, the addition of ten or fifteen drops of the essence of wormwood, or of a grain or two of the sulphate of zinc, as recommended by Dr. A. T. Thomson, to each dose of the *liquor potassæ*, will be found a useful adjunct. If care be taken only to increase the dose of the alkali very slowly, and to exhibit it in a very large quantity of some sheathing and mucilaginous vehicle, it may with perfect ease and safety be carried to the extent that I have just mentioned, and be continued for a considerable time without giving rise to any gastric irritation.

There are certain rules of diet which it will likewise be necessary for the patient to attend to. All stimuli, whether in the shape of fermented liquors, coffee, spices, &c. should either be avoided entirely, or only be taken in great moderation. All prepared, salted, or smoked meats or fish, raw vegetables, young meats, the richer kinds of fish, such as eels, salmon, and turbot, cheese, and baked pastry, must be abstained from; and the diet be rigidly composed of the lighter and more nutritious articles of food.

Useful, and indeed necessary, as proper general treatment is for the cure of *acne*, it would scarcely succeed by itself; and it is always expedient to have recourse to local means of treatment. In carrying these out there are two principal indications to fulfil: the first is to allay irritation and to remove the sebaceous matter that is accumulated in the follicles; the second, to induce a more healthy action in the diseased part.

The plan of local treatment that is most generally adopted in *acne* is of a stimulating character. This, in certain stages, and in some of the varieties of the disease, is useful enough; it is, however, much too indiscriminately resorted to in all stages and in all species of the affection.

The first thing to be done is to allay the irritation that is occasioned by the obstruction of the follicles, and to remove the sebaceous matter contained in them: this is more readily effected by the application at night of a warm bread and water poultice, by fomentations, or by the local vapour-bath. The most efficacious of these means, if there be only a moderate degree of irritation, is the local vapour-bath; if there

be much inflammation, bread and water poultices should be employed as well: but, without exception, the readiest and most agreeable mode of allaying the irritation of acne, especially when that disease is situated on the face, is by means of a local steam-bath, used morning and evening for ten or fifteen minutes at a time. A very convenient mode of applying this is by means of Duval's apparatus, which, however, has the disadvantage of being rather expensive. To obviate this objection, I have been in the habit of using a much simpler and cheaper apparatus*, which answers every purpose, and the price of which does not exceed a few shillings. If neither of these machines are at hand, the best plan is to direct the patient to pour some boiling water into a basin, and then, holding the head over this, to envelope both with a towel or handkerchief, and thus allow the face to be surrounded by the confined steam. If one or other of these plans be had recourse to in the morning immediately after rising, and in the evening before going to bed, it will be found that the orifices of the sebaceous follicles will quickly be emptied of the matters that obstruct them, and the skin of the face be at the same time rendered smoother and softer—that harshness and stiffness which is frequently so much complained of being readily and effectually removed.

If the disease have merely assumed the characters of some of the milder forms of acne disseminata (the acne simplex or punctata), or that variety which I have described as combined with pityriasis, and which is of frequent occurrence in young females, the only local treatment that will be found necessary in addition to the steam-bath,—which I look upon as indispensable—and occasional poulticing at night, is the application in the evening of the white precipitate ointment, or of the Ung. Hydrarg. Nitratis, diluted with two or three parts of zinc ointment. By these means, persevered in for some little time, in conjunction with proper general treatment, the milder and more recent cases of the disease will speedily get well. If, however, it be of the variety designated *acne indurata*, if it have existed for a considerable length of

time, and there be large, indurated, red, or livid elevations, suppurating but very slowly and imperfectly, it will be requisite to have recourse to more active means. It is in these cases that the plan recommended by Plumbe, of pushing a lancet down to the bottom of the larger tumors, and thus evacuating their contents, will be found to be especially useful, and to hasten in a very marked manner the progress of the disease. In addition to this, warm bread and water poultices, to which olive-oil has been added, should be applied every night; the steam-bath should be used two or three times a day, and the Ung. Hydrarg. Nitratis, either undiluted or mixed with equal parts of zinc, or of white precipitate ointment, should be well rubbed in at bed-time, the object being to hasten the resolution of the tumors by the application of a moderate stimulus; or if this cannot be accomplished, to cause them to suppurate as speedily as possible. As soon as suppuration is established, the contents should be evacuated by means of a small puncture. When the disease is situated in the back and shoulders, an ointment of the iodide of sulphur, in the proportion of from ten grains to a scruple of the iodide to an ounce of spermaceti cerate, will be found of essential service, causing the rapid resolution of the indurated elevations that are so troublesome in some forms of acne. This application cannot very conveniently be made to the face, as it stains the skin of a brownish hue, and is therefore only applicable to those cases in which the disease is situated on parts of the body that are generally covered.

Lotions of various kinds are recommended by almost all the systematic writers on the diseases of the skin, as being of use in cases of acne. I have, however, almost invariably been disappointed by them, and have found them very far inferior to ointments in the permanency of their effects, or in their general applicability. Those that contain mucilaginous matters, as the vegetable infusions of all kinds, are frequently complained of by patients on account of their forming, when dry, thin incrustations about the face, which is thereby rendered stiff and uncomfortable. Spirit lotions, which are not liable to this objection, have never appeared to me to accomplish

* This apparatus is made by, and may be procured of, Mr. Twinberrow, 2, Edward Street, Portman Square.

anything that might not more readily be effected by ointments; whilst those that contain the bichloride of mercury in solution, even in very small quantity, are open to the objection that they are liable, in certain individuals, to give rise to an erythematous eruption—more particularly in those cases of acne that are attended by a branny desquamation of the cuticle, and by some degree of redness of the surrounding skin.

[To be continued.]

ANCIENT PRACTICE IN CASES OF PLACENTA PREVIA.

MR. HENRY BLENKINSOPP, of Warwick, gives a quotation upon this subject from a curious manuscript in his possession, entitled, "Observations in Midwifery, by Percivall Willughby, Gentleman." This Dr. Willughby was "one of the six sons of Sir Percivall Willughby, and grandson of Sir Francis, famous in the time of Queen Elizabeth," and he had a considerable practice in Derby, Stafford, and afterwards in London, the dates of his cases ranging from 1640 to 1670.

He says:—"If the flux of blood bee caused by the afterbirth, coming afore the birth of the child, or in the time of travaile, —before you attempt anything, these two points must be observed. First, whether the after-burden bee come forth but a little, or else very much. If it bee but a little (when the mother is well placed,) it must be thrust and put back again with as much care as may possible bee; and, if the head of y^e child come first, let it be placed right in the passage, thereby to help the naturall deliveray. But, if you find any difficulty, or, if you perceive that the child's head cannot easily bee brought forward, then, without doubt, the best and surest way is, to search for the feet, (as we have said,) and to pluck him forth gently by them. The other point to be observed, is, that if the said after-birth bee much come forth, and that it cannot be put back again, (as well by reason of the bigness of it, as also of the flux of blood that commonly companies it,) and likewise, if the child follow it close, staying onely to come into the world, then must the after-burden bee pulled away quite; and, when it is come forth, it must bee laid aside, without cutting the string that cleaves onely to it. For, by the guiding of the same string you may easily find the child; who, whether he be alive or dead, must be drawn forth by the legs with as much dexterity as may bee."—*Provincial Med. and Surg. Journal*, April 1845.

MEDICAL GAZETTE.

FRIDAY, NOVEMBER 7, 1845.

THE subject of Medical Education is so full of interest at the present time, that we think we need not apologise to our readers for bringing before them in a prominent form some of the views entertained by an intelligent man, who has had an opportunity of acquiring good experience on the state of the medical profession both in Asia and Europe. As the lecture upon which we are about to comment was delivered by Professor Royle*, before the introduction of the various measures of Medical Reform, which kept the profession in a continual state of excitement during the last session of Parliament, we are in a position to compare his views with those which have been entertained by others, who have had the advantage of forming their opinions from a more mature examination of the subject.

The great object of Medical Education is, undoubtedly, to fit those who aspire to be members of the profession, for becoming properly qualified practitioners; but a difficulty has hitherto existed, in the fact, that those in whose hands the power has been placed, have not adopted any uniform plan whereby this may be accomplished. Preliminary education has been neglected to a very great extent,—a circumstance which may be perhaps in great part attributed to the pernicious effects of the apprenticeship system. A faint attempt has been made by the Apothecaries' Society to provide for this deficiency, by instituting a Latin examination in Celsus and Gregory, but this has been in some

* Medical Education, a Lecture delivered in the Session 1844, King's College, London, by Professor Royle, M.D. Parker, 1845.

measure defeated by the efforts of Classical grinders, who are ready to impart the requisite quantity of Hall Latin in a few lessons at the shortest notice.* The College of Surgeons require no kind of preliminary examination for the Membership, but demand for the Fellowship, following the good example of the University of London, a competent knowledge of the Greek, Latin, and French languages, and of the Elements of Mathematics. While Professor Royle admits the utility of the ancient languages in training the mind and forming the taste, he very properly argues that modern languages should not be sacrificed to these:—that French and German are useful, nay, almost indispensable, not merely for professional purposes, but for the general intercourse of life. There should also be some knowledge of Mathematics. He truly observes, that this forms the only secure basis for the prosecution of exact science: “Mathematics store the mind with a vast number of useful facts applicable to every relation in life, train the mind to habits of correct reasoning, and the art of drawing legitimate inferences. The want of this is very observable in the world generally, no doubt from the defective nature of general education. It is very conspicuous also in many medical writings, owing probably to the unmethodical habits which may have so long prevailed in the ordinary course of study.” A man destitute of

this preliminary education, may perchance succeed as a practitioner, but he will fail to command the respect of the educated classes among whom he may be thrown. The abolition of apprenticeships will allow of a longer period being passed at school, so that henceforth there will be no reason why every one who desires to enter the profession, should not be provided with a good elementary education.

Dr. Royle suggests that Natural Philosophy and Chemistry should be withdrawn from the *medical*, and made part of the *general* education; but we doubt the propriety of this step, since it is not likely that these subjects can or will be well taught except where there are ample means for practical illustration. Besides, those who are intended for the medical profession would require that Chemistry and Physics should be taught especially in their relations to medicine; and it is not likely that the means of doing this effectually, would be found except in connexion with a medical school. We have considerable doubt how far Mechanics’ Institutes, or Polytechnic Institutions, could be substituted with benefit for the plan at present pursued; and these sciences, as they are taught in private educational establishments, rather give a smattering of the subject than any substantial information. Dr. Royle strenuously advocates the abolition of apprenticeships, and the acquisition of that preliminary knowledge, which may be deemed requisite to a professional man, *before the commencement*, and not during the progress, of his medical studies. The following remarks are so judicious that we here print them in the author’s own words:

“As far as pharmaceutical information is concerned, a few months would be ample, after some preliminary information had been acquired; and for the opportunities of seeing practice, much less time, subsequent to com-

* “To whatever extent the system of learning by rote, or being *crammed*, may be carried by the *οἱ πολλοὶ* of the Universities, we may venture to say, that it falls far short of what happens among the *οἱ πολλοὶ* of the medical students. It is notorious that the majority of those who mean to offer themselves for examination at the College of Surgeons or Apothecaries’ Hall, are for the two or three preceding months regularly and daily drilled for the occasion: that there are individuals in London, who make considerable incomes by dispensing this spurious species of instruction: and that it is no small proportion of the medical students, who having neglected all the early part of their education, are at last *qualified* in no better way than this, for the examination which is to crown their labours!”—*Quarterly Review*.

pleting a scientific and practical education, would suffice to impart much more, than by the present plan, where, though much may be seen, little is observed. But when so much is relaxed, the opportunity should not be lost, of requiring as an equivalent, that those purposing to enter any medical school should prove that their time has been well spent; as in acquiring some knowledge of the sciences bearing upon professional studies. The course of study to be inculcated by the Council of Health and of Education has not yet been made public, but it will no doubt be such as is suited to the present state of the sciences, and of the profession. But, from the number of subjects to be learnt, and from their nature, it is evident that the medical sciences can only be efficiently taught where ample materials for illustration are collected, with the necessary establishments, and a competent body of teachers. The subjects to be learnt being the same, and for the majority to the same extent, as much uniformity of system as is practicable should be adopted, and this appears to be one of the objects intended. With this should be combined, a course of examinations calculated to test fully the competence of the candidates in the different branches of science. This can only be done effectually by examiners being appointed on account of their competent knowledge of the different medical sciences."

We think, as we have already had occasion to state, that the establishments licensed for medical teaching should be put under closer restrictions than they have hitherto been. To use the language of Professor Royle, we trust that the Council of Health will license no school which is not provided with "ample materials for illustration, with the necessary establishments, and a competent body of teachers." The degrading competition in fees should be utterly abolished. With one uniform plan of education there may be one scale of fees; so low as to meet the reasonable expectations of those who desire to enter the profession, but at the same time sufficiently high to serve

as a remuneration for arduous and useful services. Dr. A. should not be allowed to draw off the pupils of Dr. B., simply by advertising that he will give certificates on *two* subjects for the price of *one*. While this system is degrading to the teachers as a body, it utterly sacrifices the respect of those who come to receive instruction. It may be very well to talk, in showy introductions, of the grand objects of medical study—of the noble results of successful and disinterested practice, and quote illustrative examples from the time of Esculapius to that of John Hunter! But if teachers, in order to gain pupils, are allowed to employ the arts of the lowest class of tradesmen, what ethics are likely to prevail among those who fall under their tuition?

There are some other points in this excellent Address, to which we shall return on a future occasion.

Reviews.

Contributions to Vital Statistics, being a Development of the Rate of Mortality and the Laws of Sickness, from Original and Extensive Data procured from Friendly Societies, &c.; with an Enquiry into the Influence of Locality on Health. By F. G. P. NEILSON, F.L.S. 4to. pp. 148. London: Cunningham. 1845.

IN the volume before us Mr. Neilson has placed together a large number of interesting deductions, drawn from many extensive and elaborate calculations, which must have cost him great labour and research. The work appears to be chiefly intended for those who are concerned in friendly societies and life assurance offices, but it also contains several facts and conclusions, which will be of great interest to medical men who study the subject of public hygiene. A few of these deductions are of a novel and rather unexpected kind; they not improbably involve some fallacies, but they are decidedly worthy of a careful investigation.

The tables are too extensive to allow

of extract, but we shall quote a few of the more interesting passages.

The following is a very sensible caution to the statistician against one of the very many sources of error that beset his inquiries:—

“At present it is right to assume, that either employment or occupation, condition in life or rank in society, poverty or riches, has as direct an influence on the duration of life as peculiarity of locality or habitation; for the effect of neither one nor the other of the presumed influencing causes has yet been correctly defined. The truth of this assumption may appear more evident thus: Suppose that the town of Liverpool were compared with some purely agricultural district, and that a much higher rate of mortality was found to prevail in the former; it would be no more right to assign this result wholly, or indeed any given portion of it, to the badly conditioned streets and ill-planned houses of Liverpool, than to any other of the supposed causes. In order to determine the simple influence of locality, like classes in the respective districts must be compared. In a comparison of districts A and B, if it so happened that in A two elements, *c* and *d*, were found to influence the value of life, while in B one only of those elements existed, the grounds of comparison would evidently be fallacious. Now this is precisely a parallel case to the state of things which exists in comparisons that have frequently been made between the manufacturing towns and the rural districts of England, and between one manufacturing town and another. Causes influencing the duration of life, independent of locality itself, frequently exist in the one, and not in the other; by overlooking which, observers are often led to assign excessive mortality to imaginary causes. If simple elements were compared, errors of this kind would be avoided. Keeping this in view, and referring to the preceding case, let *c* be supposed to represent comfort, and *d* distress. If, comparing comfort in the district A with comfort in district B, a greater mortality were found to prevail in the former than in the latter, it would then be right to assume that the remaining elements—ill-ventilated houses, badly-drained streets, and the like—in district A, were not so favourable to life as in district B; but it would have been wrong to draw such a conclusion, had comfort and distress in the one district been compared with comfort only in the other. It is evident that, in a comparison of the general mortality of any one place with that of another, such errors could not be avoided. It may happen that the prevalence of a particular kind of employment or occupation in the one, which is not common to the other district—but which employment is of an

unhealthy nature, or perhaps subject to great fluctuations in prosperity, or probably both combined—may produce an excessive mortality, the cause of which may be attributed to badly-planned dwellings, instead of to poverty and its train of direful consequences. If it were possible to compare any one class in a given district with the same class under exactly similar circumstances in another district, the only distinction being the difference of district or locality, then it is plain that the influence of locality, if any, would manifest itself. Again, if different classes of persons in the same locality were compared—for example, those following different employments—the only distinction being difference of employment, then the force of that element, if any, on the duration of life would appear.” (p. 11.)

The following is a conclusion for which many will feel unprepared:—

“It could be clearly shown, by tracing the various classes of society in which there exists sufficient means of subsistence, beginning with the most humble, and passing on to the middle and upper classes, that a gradual deterioration in the duration of life takes place; and that just as life, with all its wealth, pomp, and magnificence, would seem to become more valuable and tempting, so are its opportunities and chances of enjoyment lessened. As far as the results of figures admit of judging, this condition would seem to flow directly from the luxurious and pampered style of living among the wealthier classes, whose artificial habits interfere with the nature and degree of those physical exercises which, in a simpler class of society, are accompanied with a long life. Thus far, then, it is plain that the amount of life enjoyed by the middle and upper classes tends rather to depreciate than elevate the standard deduced from the general results of the country. And carrying this out still further, and viewing the value of life in the highest ranks of society—namely, the peerage and baronetage, as given in the recent and very interesting paper by Dr. Guy, it will be seen that the expectation of life is not only less than in the general community, but also very much below the measure of life among the members of friendly societies in the city districts. It may, then, be conclusively admitted, that the standard of life in the general community is not elevated in any way by the influence of the middle or upper classes. With regard to the very highest ranks, the opposite conclusion must be come to; but as the numbers of the nobility are relatively small, the inferior value of life there shown is not sufficient to account for the reduction of the scale for the general community so much below the average standard of all classes in Friendly Societies.”

The expectation of life in the peerage is given in one of the tables (H, No. 3.) It would certainly become a striking fact, if it were fully proved, that the expectation of life among the wealthier classes was less than that in the mechanics of crowded cities; and we trust that the author will not hesitate to produce all the evidence he has collected upon this interesting question. At present, we cannot help thinking that he speaks more confidently upon this point than the data given in his work warrant. Thus, we know that a very large proportion of the deaths occurring among the working population are in children; but, in the table just alluded to, the expectation of life in the children of the nobility under twenty years of age is not given. The number of instances which form the data of these tables is not mentioned, but it is probable that the peerage table is the result of the calculation of a far smaller number of instances than are those derived from the records of the Friendly Societies: this alone would render the comparison by no means a fair one. But say that the numbers were equal, it is evident that, to procure information with regard to the precise ages at which a very large number of the nobility have died, would require that many instances should be included which occurred ten, twenty, or fifty years since, according to the number collected; whereas the records of the Friendly Societies are probably all of a comparatively recent date. Now it is well known that, several years since, there were causes strongly operating to diminish the expectation of life among the wealthier classes, which have, of late, greatly diminished: take one, for instance, the immoderate use of wine, and its almost direct consequences, gout and calculous diseases. It can therefore only be fair to compare the mortality among the nobility of our own day with that which now prevails among the humbler classes: this, however, from the scantiness of the data upon the former point, can scarcely be done satisfactorily at present.

The author adduces many facts and arguments with regard to the influences of locality on sickness. One or two quotations will give an idea of his views upon this subject:—

“The evils, so far as relates to health, represented to exist by some writers to so

frightful an extent, and to connect themselves with inferior sewerage, filthy streets, and ill-planned houses, are certainly overstated by them. The data brought forward have generally been of the most indefinite and insufficient nature; and when, in connection with this, the erroneous methods employed, and the promiscuous manner in which their figures are generally combined, are kept in view, it must seem surprising that the thinking and intelligent portion of the community should have given these opinions any credence, or believed their conclusions entitled to so much weight. Perhaps no statistical facts are better established than the duration of life among the middle and upper classes of this country; and if the data brought forward in this paper be received as of sufficient merit to represent the duration of life among the working classes, it will then appear clear that any important change to be hoped for in the value of life in the town districts, must be effected through other means than sanitary regulations.” (p. 109.)

In this last remark we can by no means fully coincide with the author. The belief “that the mortality of towns and cities is increased from the existence of a high proportion of trades which are in themselves unhealthy, independent of the influence of locality,” is evidently a very favourite idea of the author’s: that the influence of such trades in increasing the rate of mortality is exceedingly great, must be admitted by all; but to deny that unfavourable locality, bad drainage, and imperfect ventilation, may, and very generally do, conduce most powerfully to effect these fatal results, is, we believe, to take an unfortunately narrow view of the subject. Let it be granted, on the author’s authority, that the calculations upon which the ill effects of certain localities on the health of the inhabitants have been in great measure incorrect, and their results exaggerated, we still maintain that no fact is more clearly or demonstrably established, than the conclusion which affirms that large classes of destructive diseases, which are yearly sweeping away thousands of our population, depend almost entirely upon causes which it is in our power to remove in great measure—perhaps altogether—by sanitary regulations. It is not right that, in becoming convinced of even the great preponderance of certain causes of mortality, we should commit the fatal error of refusing to take other almost equally general and powerful influences into

account. We find the author arguing as follows:—

“It is not to be expected that any arrangements whatever as to the drainage and planning of streets are likely to add to the longevity of a tailor; but if it were possible to give his frame the physical exercises of a ploughman, 20 per cent. would be added to the duration of his life.” (p. 110.)

Now we must very strongly deny the correctness of the first part of this proposition: it may be true that there are conditions attending this and other trades, which, even under the most favourable circumstances, almost inevitably produce a tendency to constitutional disease in the operatives; but we must not, on that account, refuse to admit that the development of such disease may be delayed—nay, perhaps in many instances be averted—by affording the artisans the benefits of good ventilation, homes free from putrid exhalations, and opportunities of using public baths, and places of exercise during the intervals of labour. But grant that the pursuit of such trades almost certainly induces phthisis or other constitutional disease, still persons so employed are of course liable to other fatal maladies, which are common to the districts in which they reside; so that, under these circumstances, to deny the efficiency of sanitary laws is to deny the self-evident principle, that the removal of the great causes of sporadic diseases in any locality must increase the duration of life among all classes of its inhabitants.

In case any of our readers may not have felt much personal interest in the discussion of these matters of literally vital importance, we shall conclude our notice with a quotation from Mr. Neilson's deductions, which is likely to have a very consolatory effect upon all classes of practitioners, especially upon those who are satisfied that it has been their good fortune to secure a large “connection.”

“Suppose a medical practitioner to have within the circle of his patients one thousand persons, whose ages vary from 20 to 70 years, and equally spread over that term of life. According to the results here given, he ought to expect 274 of them to be on his sick list during the course of a year; that they would experience 2430 weeks' sickness in the aggregate; and that there would be about sixteen deaths out of that number in the same time;—and presuming that he were to visit each patient every al-

ternate day, it would produce 8505 visits in the course of a year, or about 23 visits daily. Societies and many other public bodies adopt a practice of paying an annual sum for medical attendance and advice, and it will thus be seen that means are available by which to calculate the probable amount of labour and time that may be required for the discharge of such engagements.”

We trust that very few of our readers will find such reckonings necessary, from a wish to enter into engagements with Benefit Societies and similar unprofessional speculations; and we would advise those who have been so fortunate as to obtain the privilege of attending the poor of large parishes not to be too eager in following out these minute calculations, lest they should be astonished at discovering with how few farthings a munificent government remunerates each of their official visits.

Medical Intelligence.

EXTRACTION OF STARCH FROM POTATOES.

In the report lately presented to the Irish government on the state of the potatoe crop in that country, we find the following sensible remarks in relation to the nutritious properties of that vegetable. The extraction of starch from potatoes, and its use as food, having strongly attracted public attention, and conflicting, and, in many cases, inaccurate opinions having been entertained on this subject, we consider it of paramount importance at once to direct attention to the actual state of knowledge regarding this material. It is recognised that the potato, in relation either to its weight or bulk, is one of the most inferior articles of food. In its ordinary state of sound constitution, every hundred pounds weight of potatoes contain, on an average, 74lb. of water; of skin and fibrous matter, 8lb.; and of starch, 16lb.; whilst of gluten, the most nutritious of vegetable matters, and which predominates in corn, there is not more than 2lb. in the above quantity. It is certain that starch, or materials corresponding to it, exists to a certain amount in every variety of useful food; but it is equally certain that in food starch is not the material which serves for the support of the animal frame; and an animal fed merely on starch dies of starvation nearly, if not quite as soon, as if totally deprived of food. Hence, starch extracted from the potatoe cannot be viewed as a substitute for the potatoe itself; and we consider it of great importance, that whilst the attention of the people is directed to the real value of starch,

and the uses to which it may be advantageously applied, they should not be allowed to rest their hopes of nourishment during the succeeding season upon any store of it alone.

RECENT ORDER, RESPECTING QUARANTINE.

IN pursuance of directions from the Lords of Her Majesty's Most Hon. Privy Council, the Commissioners of Customs have caused instructions to be given to the revenue officers and coast guard at every outport and station along the coast of the United Kingdom, to be most particular in future in the examination of the masters or officers commanding vessels (more particularly steamers) arriving from the coast of Africa or the West Indies, by putting the quarantine questions to them, and taking down their replies, so as to have their papers to refer to if necessary, as in the case of vessels arriving from the Mediterranean or the Levant, and especially with reference to the quarantine questions 11, 15, 16, 18, 19, and 20, the replies to which are to be taken down fully; observing that in the event of there having been suspicious sickness on board during the voyage all such vessels are to be detained under the restraint of quarantine, and their papers forwarded to the board. This order has been issued in consequence of the late deplorable and fatal case of the discovery of an alarming fever existing in a ship (the *Eclair*?) which recently arrived from the coast of Africa, and has been lying under restraint in quarantine for a considerable time off the Motherbank, and it is the wish and intention of the Government, by taking every possible precaution, to prevent the spread of anything so alarming as the disease alluded to. In the event of any such disease having shown itself during the voyage from the places in question, the strictest inquiry and examination will be made previously to the vessel being relieved from quarantine, in order to prevent the extension of any contagious illness, which may actually or be supposed to exist on board.

[REMARKS.—We presume that this order refers to the *Eclair*, concerning the fever in which so much has been lately said. It would, we conceive, have been more satisfactory, if, besides taking good care to prevent the diffusion of a contagious fever in our seaport towns, some little consideration had been bestowed upon the condition of the crew of any vessel, so unfortunately situated as to render it necessary to enforce this order. Why should there not be a Health officer to dispose of the crew of an infected vessel immediately upon its arrival on our coasts, and to remove them from the poisoned atmosphere to which they are exposed? The rendering it necessary to forward papers to a distant Board, with the possible risk of

the chief quarantine officer being accidentally absent at the time of their arrival, may make all the difference of life and death to those of the crew who have resisted the effects of the poison. The death of the coast pilot, in the case of the *Eclair*, was clearly due to the measures afterwards adopted at Stangate Creek not having been at once carried into operation on the arrival of this ill-fated vessel at Portsmouth.—*ED. GAZ.*]

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN IN LONDON AND ITS VICINITY.

THE half-yearly General Court of this Society was held yesterday evening (Oct. 29), at the Gray's Inn Coffee-house, Martin Ware, Esq., in the chair. After reading the minutes of the last half-yearly General Court, in April, and of all Courts of Directors held since that time, a ballot took place for the election of officers for the ensuing year.

Dr. Chambers and John Bacot, Esq., were elected Vice-Presidents, in the room of Dr. Heberden and Wentworth Malim, Esq., deceased. As Directors, six of whom retire annually in rotation, Dr. McIntyre and Dr. Burton were elected in place of Dr. James A. Gordon and Dr. H. Lee; Mr. Caesar Hawkins, Mr. Taunton, and Mr. Lloyd, in place of Mr. Bacot, Mr. Bell, and Mr. Travers; Mr. Probert and Mr. Barton Hill, in place of Mr. Beaman, and Mr. Annandale.

Mr. Stone announced a bequest of £50 by Mrs. Baillie, widow of the lamented Dr. Baillie, who for many years was President of the Society, and who warmly supported it by his pecuniary contributions and personal exertions.

MEDICAL APPOINTMENT.

DR. SCOTT, of Barnes, formerly a medical officer in the East India Company's Maritime Service, was appointed, on the 5th instant, Examining Physician to the Company, on the nomination of the Chairman.

MODERN ORGANIC CHEMISTRY.

ORGANIC chemistry has become the fashionable study of the day, and young chemists are overwhelming us with discoveries of new organic compounds, the very names of which it would be impossible for any man to remember. The curious character of many of these cannot be denied: the isomeric conditions which have been shewn between bodies apparently dissimilar, must be admitted to be valuable facts. But the fatal facility with which this class of researches is followed, destroys those habits of close investigation, which it is so important to cultivate, which alone can lead to those higher purposes, making man the minister of Nature, and to which the merely utilitarian applications are only incidental.—*Athenæum*.

Proceedings of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, Oct. 27, 1845.

DR. THEOPHILUS THOMPSON, PRESIDENT.

DR. CLUTTERBUCK made some general remarks on the discussion of the preceding meeting, in which he commented on the discrepancy of opinion which appeared to exist, not only with respect to the nature of purpura, but also with reference to its treatment. He knew the difficulties of the subject, and had himself no specific opinion to offer. He commented on the treatment pursued in Mr. Dendy's case, as too active and severe.

Mr. DENDY explained that he had carefully watched the effects of the remedies he had employed, and not administered them without extreme caution. He urged that mercury did not exert its specific powers on young children; its action being arrested by its becoming obstructed by the mucus always present in the bowels of patients at that early period of life. He had never seen ptyalism under the age of three or four years. With respect to the employment of arsenic, he had in other instances given as much as in the present case. His experience went to show that arsenic did no good in the scaly eruptions of children, previous to the eighth or ninth year. The indications to leave off the use of arsenic were very plain: the child complained of pain in the head, which usually drooped on the shoulder; he then stopped with the medicines, administered diaphoretics and purgatives, and then commenced with the arsenic again.

Mr. BISHOP had found that, unless the system bore the arsenic for six or eight weeks, that medicine had no effect on the scaly eruptions of children. Larger doses of arsenic were borne better in proportion as the menstruum was large.

Mr. DENDY had failed with arsenic, even when he had continued it for six or seven weeks.

Mr. HILTON suggested that the specific effects of mercury were most marked when it was administered in the syphilitic diseases of children. Might not the fact of the salivary glands being, as it were, in abeyance in children, explain the circumstance of ptyalism not being produced in them?

Mr. BISHOP had, in some cases, been obliged to discontinue the use of bichloride of mercury to suckling mothers, in consequence of the gums of the infants becoming affected.

Mr. HEADLAND observed that ptyalism

in children was rare; but the state of the salivary glands was not sufficient to explain this.

Mr. ROBERTS had found the salivary glands large, in proportion, in infants. In dentition, children had a large quantity of saliva. He then read the following case:—

The Rev. John M—, of spare habit and nervous temperament, aged fifty-eight, was attacked, on the 14th Sept., with pains in his limbs, rigors, and difficulty of deglutition, from soreness of the right side of the throat; he was relieved by appropriate measures, and ate his breakfast with ease and tolerable appetite, on the 18th, but was overtaken, in the course of the day, with rigors and dysphagia, from pain in the left side of the throat; the fever, pain, and difficulty of deglutition, increased as the day advanced, and, by five o'clock on the following evening, he could not swallow the smallest drop; he spoke also with great pain, although the voice was loud and clear, but could not snuff up air through the nostrils; leeches were applied, and hot fomentations; by twelve o'clock in the day, there were decided paroxysms of difficulty of breathing, with sibilation; the velum pendulum palati was much reddened at its lower base; the tonsils could not be properly inspected, but did not seem to be swollen in proportion to the difficulty of deglutition. A blister was applied, and belladonna administered. By five o'clock in the afternoon, he was in a state of impending asphyxia; the body bathed in perspiration with the violent struggles for breath; and, shortly afterwards, he fell into a condition of semi-consciousness. The operation of laryngotomy was performed at six o'clock; in cutting through the ligament there was a slight hæmorrhage from a wounded vein, and some of the blood escaped into the larynx, and was coughed up through the tube, and through the mouth; for a few seconds the patient seemed not to respire; presently he breathed softly, and fell into a tranquil sleep, which lasted for ten minutes or a quarter of an hour; he then awoke, and consciousness gradually returned; he was much relieved, but observed a singing noise in his left ear, which gradually subsided in the course of the evening; still he swallowed with great difficulty. The blister had vesicated the skin, and was removed, and dressed with mercurial ointment, which was also rubbed in the arm-pits. At ten o'clock he had had several comfortable naps, and breathed easily through the tube; was cheerful; and had a firm pulse of 86. A small enema of gruel was administered for nourishment; one grain of calomel was ordered to be given every hour.

20th. Morning.—Breathes easily, but is greatly distressed if the finger is placed upon the tube; respirations sixteen per minute; complains of pain over the right parotid; deglutition slightly improved; eight powders have been taken, and the bowels are much griped and purged, the stools consisting principally of blood and mucus; a slight disposition to stranguary; the urine scanty. Gum-arabic in his toast-and-water; a sixth of a grain of opium, and three grains of chalk, to be added to each dose of calomel; a turpentine epithen to the nape of the neck; an astringent gargle for the mouth and throat.

Evening.—Respiration more laboured, and attended with so loud a hissing noise that it may be heard on the stairs, outside the room; there is a slight sonorous rhoncus on the left side, of a dry character; the tube was withdrawn, and found to be much obstructed by a plastic lymph of a peculiarly tenacious character, closely resembling the false membrane of croup; the hissing sound immediately ceased, and did not recur when the tube was replaced, after it had been cleansed; complains of headache and pain about the upper part of the throat; bowels not opened since morning; micturition easy. Eight leeches applied to the right side of the neck; repeat the gargle and powders.

During the course of the night the tube frequently became obstructed, and was taken out, and cleansed, and at ten o'clock the next morning was altogether withdrawn; it was then observed that, on swallowing liquids, a few drops escaped at the wound, although deglutition was easier; there are occasional fits of coughing. The calomel to be continued.

Evening.—The wound has been blocked up for the last three hours with dried mucus, yet the breathing, which has been tolerably free during the day, is not much impeded by it; can speak in a whisper; coughs less; there is a copious expectoration; deglutition much easier. Has only taken three powders to-day; to go on with them.

22d.—Passed an easy night; breathes easily; coughs less; voice louder; deglutition much easier; mouth affected by the calomel; the wound is generally closed. From this time he went on improving, and resumed his ordinary duties as a clergyman on 19th October, five weeks from the first appearance of his complaint.

Mr. ROBERTS remarked on the rapidity and urgency of the symptoms, and the necessity for the operation. He thought the inflammation was of an erythematic character, and that it affected the rima glottidis and epiglottis, and parts above the cordæ vocales; that the tube had excited an in-

flammation lower down, which induced cough, and might have destroyed the patient had its employment been persevered in; that in performing the operation there should be a very free external incision, and that the parts should be well cleared away, before the opening was made in the larynx, in order to avoid hæmorrhage.

A discussion followed, in which several gentlemen took part.

WESTMINSTER MEDICAL SOCIETY.

Saturday, Oct. 24, 1845.

MR. DUNN IN THE CHAIR.

THE Society held its first meeting of the session this evening. There was a full attendance of members.

Dr. FREDERIC BIRD read a paper introducing cases of puerperal mania, in which that disease appeared to have had its origin in antecedent rheumatism. Under the name of puerperal mania had been included almost every form of cerebral affection occurring in the parturient woman in which delirium formed a symptom; and whilst one authority may allude to it as a comparatively unimportant malady, another may treat it as grave and often fatal. Its too general application favoured such discrepancies; and, in order that he might be rightly understood, he would briefly observe, that the cases he had to relate belonged to that form marked by the occurrence of delirium, by concomitant febrile action, by local pain, by derangement of special functions. Such were the general symptoms in his cases, in each of which they arose suddenly, and in some ended fatally.

The first case related was that of a patient aged twenty-two, delivered shortly after the completion of the eighth month of pregnancy. For four days she progressed favourably; on the fifth complained of indisposition; was feverish; had a hurried pulse, and a white coated tongue; she had pain in moving, and more particularly so in one wrist-joint, which was found to be swollen, reddened, and painful to the touch. After the lapse of twelve hours, she was seized with all the symptoms of pericardial inflammation; the wrist-joint was no longer the seat of rheumatic affection; that the pericardium had become attacked was subsequently evidenced by a friction-sound; recovery from the thoracic symptoms took place, but the joints again became affected by swelling, redness, and pain. As had previously happened, these local symptoms rather suddenly disappeared, and mania set in, associated with fever, ferret eye, pain in the head, and small rapid pulse. In two days from the accession of these symptoms the delirium had passed into a low form, and ended in death. The marked

subsidence of the second rheumatic attack, and the prompt supervention of cerebral symptoms, appeared to support the belief that their cause was metastasis to the brain, an opinion strengthened by the previous occurrence, under the same conditions, of pericarditis; the rheumatism, ill developed and erratic, was the cause of both. The second case was that of a patient who had frequently suffered from rheumatic affections, and who, whilst in labour, was affected with that disease, its seat being the wrist and ankle-joints; mania occurred, and on inquiry it was found that the local signs of rheumatism had suddenly disappeared. Under treatment the limbs again became the seat of rheumatism, and the cerebral symptoms subsided. The fourth case occurred after a second child-birth; the patient had been attacked at the time of labour with the incipient symptoms of scarlet fever, which disease became fully developed, but passed rapidly through its course; the patient was doing well when she was attacked with rheumatic inflammation, affecting the wrists, and, to a less extent, one ankle; suddenly these symptoms subsided, and were very quickly followed by delirium, connected with febrile action; an anxious expression of countenance; a suffused ferret eye; a white tongue; and a pulse of 160, somewhat irregular and feeble. Treatment founded upon the assumption of a metastatic origin was followed by the complete subsidence of the cerebral affection, and the re-appearance of rheumatism of the joints. He was not anxious to attach more importance to these cases than they deserved, and although he had little doubt that the cerebral symptoms were the result of translation of the antecedent rheumatism in the cases he had related, he by no means wished to assert that the same cause existed in other cases. He had seen many more examples in which no previous rheumatism had been present, but that it was at least probable that other cases would occur in which rheumatic metastasis might be an exciting cause. It would often seem to be a condition of the puerperal state, that acute disease is not always indicated by acute symptoms—that it is ill-developed, passes irregularly through its course, and, as in the case of rheumatism, had a greater tendency to be erratic. He regarded also the rheumatism as of accidental occurrence, and not presenting the characters of what had been described under the term of puerperal rheumatism.

Dr. REID had never seen rheumatism in connection with puerperal mania. He had, however, seen cases of sub-acute inflammation of the joints, affecting first the groin, then the knee, ankle, and upper extremities, followed or accompanied by glandular swell-

ing, which might have been mistaken for rheumatism.

Dr. CHOWNE could not bring to his recollection any case in which puerperal mania was connected with rheumatism. He had, however, seen many instances of acute rheumatism in puerperal women.

Mr. MARSHALL had seen no case of puerperal mania produced or accompanied by rheumatism.

Mr. GREENHALGH had seen six or seven cases of puerperal mania, in none of which was it connected with rheumatism.

Dr. ELLIOTT regarded the cases detailed as instances of mere metastases of rheumatic inflammation to the meninges of the brain, and not to any extent influenced by the puerperal condition.

Mr. DUNN recollected no case of puerperal mania preceded by rheumatism, although he had seen many instances of rheumatism, and that too of a very severe kind, in puerperal women. In some of these death had resulted from the formation of pus in the joints. He expressed his opinion that we were in error in overlooking the humoral pathology of rheumatism.

In reply, Dr. F. BIRD stated, that in none of the cases he had related had symptoms of uterine phlebitis existed, the rheumatic attacks, although transient and erratic, were yet marked by sufficiently certain signs. He by no means regarded the number of cases he had adduced as sufficient to establish the correctness of a view which was but offered as a suggestion; and it was only in that form of puerperal mania, in which marked constitutional symptoms co-existed with those of mental disturbance, that the change of seat of previous rheumatic inflammation might be received as an occasional cause.

Saturday, Nov. 1, 1845.

Dr. W. MERRIMAN related a case, which however offered no materials for a report.

PROGRESS OF MODERN SCIENCE.

At the same time these (scientific) investigations bear strongly the marks of that passion for accumulation, which distinguishes the present age; and the investigators boast the immense masses of tabulated results which they can bring forward in proof of their untiring industry, forgetting that in their present state they are as valueless as piles of unwrought stones from a quarry, awaiting the directing mind of the architect to reduce them to form, and to construct them into a fabric at once beautiful and useful.—*Athenaeum*.

Correspondence.

ON THE NATURE AND TREATMENT OF
FLOODINGS AFTER DELIVERY.

BY E. COPEMAN, M.R.C.S.

SIR,—Having lately perused a paper on the nature and treatment of floodings after delivery, by Mr. Adams, published in the *GAZETTE* for August 29th, I have endeavoured to weigh well the statements there made, as they seemed at first sight to unsettle the views I had previously entertained upon that important subject. After due consideration, I am of opinion that Mr. Adams' theory of the mechanism of flooding is erroneous, his explanation of the cause of hæmorrhage inadequate to account for many of the occurrences that are met with in practice, and that his views are calculated to mislead or confuse the inexperienced practitioner in the management of one of the most dangerous complications of midwifery. Nothing can be of greater importance than to understand the subject aright; for under no other circumstances would greater danger result from ignorance of the proper treatment, or uncertainty or hesitation in applying it, than in cases of uterine hæmorrhage. It is not necessary to enter upon an analysis of every part of Mr. Adams' elaborate paper; I shall therefore confine myself to making a few hurried observations upon such of his statements as refer to hæmorrhages from the impregnated uterus.

Menorrhagia, he states, proceeds from a preternaturally increased action of the exhalant vessels of the uterus; and adds, that we are fully warranted in inferring that the hæmorrhage which accompanies miscarriages is usually of the same kind as ordinary menorrhagia, because miscarriages almost invariably occur at the period of menstruation. Now I am of opinion that there is a great difference between them; in menorrhagia the blood is generally of a darker colour, and less coagulable, and the disease usually depends upon constitutional causes; whereas, in abortion, it frequently comes away in clots, the flooding is kept up so long as the mechanical cause which produces it remains, and ceases when the contents of the uterus are removed; and if abortion do occur so frequently at the period of menstruation, it is probably on account of the greater determination of blood to the vessels of the uterus at that time causing separation of some portion of the ovum from its connexion with the uterus. Mr. Adams considers it "fully proved that not only do no vessels pass from the mother to the placenta, but the existence of patulous mouths of vessels is disproved by well-ascertained facts

regarding the structure of the placenta;" and many of his arguments are based upon this hypothesis. He then deduces the conclusion, which he considers beyond a doubt, "that contraction of the uterus is no safeguard against floodings either during or after delivery." He states, that "flabbiness of the uterus is the effect, and not the cause of the flooding; and has no "hesitation in stating it as his own belief, that the ordinary cause of flooding after delivery is the rupture of vessels from lesions occasioned during the delivery of the child; sometimes, no doubt, about the os tincæ, but more commonly about the os externum." This last opinion is confirmed by a case in which, on separating the labia pudendi, he saw an artery spirting blood to a distance: but the history of the case seems to show that there was more than one source of bleeding; that the "slight discharges of arterial blood from the os externum" were from the ruptured artery, but that the "enormous quantity of blood which came when the placenta was cast off," was discharged from the uterus itself.

Mr. Adams almost doubts the existence of placenta prævia, and believes that engorgement of the os uteri giving rise to hæmorrhage, has frequently been mistaken for it. He also considers hæmorrhage from partial separation of the placenta less frequent than is generally supposed, and says, "when it does arise from separation of the placenta, it would seem that the blood is poured forth from the vessels of the blood being ruptured, and acquiring the hæmorrhagic diathesis; and not from those of the uterus." Now, if it be true that no blood-vessels pass from the uterus to the placenta, how is it possible for any considerable hæmorrhage to take place from the vessels of the placenta being ruptured? even were the placenta to take on the hæmorrhagic diathesis, it would soon be emptied of its blood, and whence would it receive a fresh supply? If from the foetal circulation, in every severe flooding the child would be found dead and drained of its blood. Besides, where the hæmorrhagic diathesis prevails, all parts of the body are alike disposed to bleed if vessels be divided; and it would be most extraordinary to infer that so rare a condition of the system, is present in every case of flooding occasioned by separation of the placenta.

But Mr. Adams gives it as his "decided opinion, that the rupture of vessels is the common cause of hæmorrhages which occur after delivery." He argues against defect in the contraction of the uterus being a cause of flooding, and says, "on the contrary, the first announcement of the external flooding is generally made by the contraction of the uterus." It is quite true that contraction of the uterus is frequently the cause of the blood being forced externally; but there

must have been bleeding into the uterus previously, and how would an artery being wounded in the perineum explain the blood filling the uterine cavity? How, again, should expulsion of the placenta put a stop to the hæmorrhage, as is usually the case, were it dependent upon ruptured vessels of the uterus or perineum? Again, in the "rare case" of hæmorrhage from *partial* separation of the placenta, how could it be stopped by *complete* separation, as in the practice lately advocated by Dr. Simpson, were there no vascular connexion between the uterus and placenta? According to Mr. Adams' theory one would think such a proceeding more likely to increase it, from the probability of a greater number of placental vessels being injured. How, too, would he explain the fact, that hæmorrhage is frequently stopped, by rupturing the membranes, before labour is sufficiently advanced to produce lesions by mechanical violence? there can be no ruptured vessel in os tincæ or vagina, or perineum. here; neither could the practice remove the hæmorrhagic diathesis acquired by the placenta. Indeed, there seem to be so many occurrences either incompatible with, or inexplicable by, the arguments brought forward in Mr. Adams' paper, that I cannot feel it safe to base any practical rules upon them; and when he states that beyond a doubt contraction of the uterus is no safeguard against floodings either during or after delivery, I fear he is disseminating an opinion, which, if acted upon, might be fraught with the utmost danger.

I have hitherto considered it to be an established fact, that blood is poured into the placenta by arteries from the uterus, the spiral or curling arteries of Hunter; and that, after circulating through its spongy substance, it is returned into the uterine sinuses, which, passing in an oblique direction in the substance of the uterus, become closed when that organ contracts, and like valves prevent the blood from passing back into its cavity. Of the existence of the curling arteries I have no doubt, having seen them myself a few days since on the surface of a recently expelled placenta; their small calibre, delicate texture, and short course, render it easy for them to be torn through, whilst their number secures an adequate supply of blood. The umbilical vein communicates with the umbilical arteries in the placenta, but not directly with the uterine circulation above described; but I suppose, by the terminations of the umbilical vein being in close contact with the ramifications of the uterine arteries, the necessary purification of the foetal blood is effected by contiguity, and not by continuity of vessels.

If this view of the anatomy of the uterine and placental vessels be adopted, it is not difficult to explain the mode in which flood-

ings occur; and there appears such a consentaneity between it and the long established rules of practice, that it bears the stamp of truth in a greater degree than the theory propounded by Mr. Adams. With regard to flooding before delivery, it is by no means difficult to understand that from various causes, excited arterial action, irregular uterine contraction, external violence, &c. some of the small delicate uterine arteries may be torn through and give rise to hæmorrhage; and it is equally comprehensible that lessening the size of the uterus by removing its fluid contents, viz. by rupturing the membranes, the arteries may be closed by the muscular fibres of the uterus contracting upon them. Where much of the placenta is separated, the flooding may continue from the open fissures in the placenta, the blood being received into the placenta by such of the uterine arteries as are still passing into the adherent portion of it. The blood does not come from the *uterine* sinuses; since, owing to their oblique direction, the reflux of the blood which has passed into them is prevented, if only slight contraction of the fibres of the uterus has taken place. This view also explains how it happens that completely separating the placenta in cases of placenta prævia stops the flooding, which, so long as any portion of it is receiving blood from the uterine arteries, continues from the open placental fissures. When the whole is removed, the walls of the uterus exert their natural property of contractility, closing the minute arteries and making the sinuses valvular, and thus putting a stop to further hæmorrhage. The same thing occurs after the placenta is expelled in common labour, and if the uterus remain contracted, further hæmorrhage to any significant extent scarcely ever takes place. But if the uterus, from any cause, be excited to alternate contraction and relaxation, as it may be by the presence of a portion of placenta or clots, or from excessive efforts during labour, blood may flow into its cavity when it is flaccid, and then by distension or otherwise excite it to contract; and in consequence of this expulsive effort there may be an "announcement" of external flooding.

I was requested to see a woman who had been delivered the day before, on account of the large size of the abdomen: her labour had been good, no external hæmorrhage followed, and the gentleman who attended assured me the uterus was fairly contracted when he left. The friends thought there must be another child; but when I pressed firmly on the body, I felt the swelling gradually diminish until I had the uterus fairly within the grasp of one hand, and a very large quantity of coagu-

lated blood was expelled: a tight bandage kept the uterus contracted, and all went on well. Here bleeding had been going on into the uterus so as to distend it sufficiently to have held a child; but the blood coagulated, and did not appear externally, and as the woman was strong enough to bear the loss without being faint, hæmorrhage was not suspected. Can this case be explained unless upon the supposition that the blood issued from uterine vessels not closed by sufficient contraction?

I attended a lady with twins; there was also a considerable quantity of liquor amnii and two placentæ: a smart hæmorrhage followed delivery, but pressure on the uterus reduced it to the size of an orange, and the hæmorrhage ceased: on the second day she took castor oil, which acted six times freely upon the bowels; on the third day she was seized with hæmorrhage, and in the evening I found her very faint and alarmed at the profuse discharge; by proper treatment the hæmorrhage was soon stopped, and she had a quick recovery. Could hæmorrhage in this case have been caused by lacerations during labour, or by engorgement of the os uteri, or by exhalation?

In upwards of 1300 cases of labour at the full period, I have witnessed but one death from hæmorrhage; a case where I was called by another practitioner just in time to see the last moments of the poor woman's life. I have, however, met with numerous instances of hæmorrhage, and am at present too tenacious of the principles of treatment I have always been guided by, hastily to relinquish them. External application of cold, pressure with the hand upon the uterus, and, *after contraction*, a belt placed firmly round the abdomen; perfect rest, cool air, light clothing, and the exhibition of opium and sometimes ergot, have been the means to which I have trusted; and the object of all has been to secure contraction of the uterus. For preventing and removing the effects of loss of blood, I have placed much reliance upon opium; and although Mr. Adams argues that its action cannot be explained on the supposition that the hæmorrhage occurs from torpor of the uterus, there is authority for stating that by calming and subduing the action of the cerebrum by opium, the spinal nerves are less under control, and act more energetically in determining contraction of the uterus.

Mr. Adams appears to consider that the hæmorrhage which occurs after labour, must, according to the theory commonly taught, be *passive*; but I do not think such a conclusion *necessary*, since the hæmorrhage may be active, though the muscular fibres of the uterus be relaxed: arterial hæ-

morrhage may be sufficiently *active*, even when the muscular system is relaxed and weak.

I fear I have extended these observations to a greater length than many of your readers may desire, although there are other points I should like to notice. I am anxious thoroughly to understand this important subject, and court information from all who are able and willing to give it. It appeared to me that Mr. Adams' opinions were not likely to introduce a safer practice than that now generally adopted, but rather the contrary; and I trust that gentleman will not take it amiss that I have ventured to examine with suspicion what at present is assuredly novel, and to me appears problematical.

Coltishall, October 22d, 1845.

SINGULAR CASE OF DEFORMITY.

By G. F. STICKINGS, ESQ.

ON the 25th inst. I was requested to see a patient in her first labour; on my arrival I was informed that the child had been born nearly an hour, after a few trifling pains. When I had removed the placenta, which was adherent to the uterus, my attention was directed to one of the legs of the infant; both limbs were perfectly straight, and tolerably well shaped, with the exception of the left knee, which was somewhat larger than its fellow, and the skin and cellular tissue over it much denser than natural. On examining the joint I discovered it to be malformed, and without a patella, the condyles of this femur being rather broader than those of the other. The singularity of the case is, that the left leg cannot be flexed on the thigh posteriorly, but readily bends the reverse way, forming an acute angle with the thigh anteriorly; and when so flexed, the head of the tibia (in the ham) more resembles the shape and feel of the olecranon process of the ulna, when the forearm is perfectly flexed on the upper arm. The child has complete control over the muscular movements of the limb so far as regards flexion and extension in the manner above described; it is well formed in every other respect, and was born at the full period of gestation. The question is, whether it would be proper to employ bandages to endeavour to prevent this singular kind of flexion or leave it free?

Leuham, Kent, Oct. 29, 1845.

SALIVATION FROM BISMUTH.

A WOMAN, æt. 38, labouring under gastrodynia, was ordered to take, twice a day, five grains of trisnitrate of bismuth, with a cordial alkaline draught. After five days, profuse salivation supervened, precisely resembling, in the appearance of the mouth and *fætor*, that occasioned by mercury.—*Prov. Med. Journal*, October 22, 1845.

Lectures.

CLINICAL LECTURE

ON THE

DIAGNOSIS OF DISEASES OF THE UTERUS AND ITS APPENDAGES.

By J. C. W. LEVER, M.D.

Lecturer on Midwifery at Guy's Hospital.

October 1845.

I HAVE met you this morning for the purpose of making some clinical observations on some of the cases at present under treatment in Petersham Ward; but before entering upon their consideration, I think our time will not be misspent if I make some remarks on the means of diagnosis which we have at our command in investigating diseases of the uterus and its appendages.

Each case of sexual disease that presents itself to our notice must be separately and distinctly investigated; for the same disease, attacking the same organ, is found to be attended with varying symptoms in different patients, depending upon the constitution of the patient, the formation of the pelvis, the influence, mechanical and functional, that it exerts upon contiguous viscera, and the structure, density, and shape of the diseased mass itself.

In order to the complete and true diagnosis of any case, we should ascertain, first, the history, and more especially the history of the symptoms.

2d. We should institute a careful physical examination, for it is by physical diagnosis that we inform ourselves of the exact condition of the organ or organs affected; and

Lastly. If there be discharges, their colour, nature, quantity, source, &c. should be ascertained.

Firstly. With respect to the history of the symptoms.

In analysing cases of sexual disease, we should ascertain with precision, if possible, the duration of time the disease, or the symptoms, have manifested themselves; this is of extreme importance, but it is often difficult to obtain correct information from ignorant persons such as those whom we find applying at a public institution; it is, however, in most instances of great moment to ascertain this point with accuracy. Take, for instance, a case of chronic *inversio uteri*. If, in investigating a case of this kind, we find that the tumor showed itself a short time after delivery, that it was covered with a dark-coloured sanguineous excretion, and that its external appearance was accompanied with severe and expulsive pains, we have presumptive evidence, although not

direct proof (as I shall hereafter shew you), that the disease is a misplacement of the womb itself, and not polypus, with which it has been, is, and may be confounded.

But it is also of importance, 2dly, to ascertain the period of life at which the symptoms commenced. This will be readily granted by placing before you the cases occurring at different ages. A young female, at 20 or 21 years of age, is brought to you by her mother, who states that she is about to be married, but has never had the usual menstrual discharge: she may appear in tolerable health, but, on close investigation, you find there are pains, dull, aching, and bearing down, occurring with regularity once a month; and these have existed for several years, and accompanied with an evident increase in the size of the lower abdomen. Now in this instance you have presumptive evidence that the catamenial fluid is secreted, but retained; and this suspicion on your part may be, and must be, confirmed or disproved by a physical examination. Again, a woman, the mother of several children, between 40 and 50 years of age, asks our advice under the following circumstances: she complains of loss of appetite, *cardialgia*, and *dyspepsia*; says she is losing flesh, and her strength is gradually diminishing; she suffers from pain in the loins, severe, coursing through the pelvis and down the inside of the thighs; she is uneasy in standing or walking; there is a sensation of weight in the perineum; there is a feeling of irritation upon lying on one of the sides; perhaps she may have distress in passing the motions, or a frequent desire to void the urine, which may be loaded with mucus. On inquiry, we find that for some time she has had a (*leucorrhœal*) discharge; this is now becoming fetid, and is occasionally mixed with blood. The recital of these symptoms, manifesting themselves at this period of life, would naturally excite a suspicion in our minds that they depended on the development of malignant disease, for we know the period of life the most obnoxious to carcinoma of the womb is at the cessation of the catamenia, or between the 40th and 50th year. But here also we must have recourse to vaginal examination, which will at once confirm or remove our suspicions.

But, 3dly, we should not disregard the habit of the patient. Glandular disease, for instance, is frequently found in patients of a strumous habit. *Hysteria* in its protean forms, with its innumerable sympathetic pains, is more often found in women of exquisite sensibility, with high attainments, than is structural lesion; and cancer develops itself more frequently in women of dark than those of light complexion.

4th. Most sexual diseases are accompanied with pain; and in investigating this symp-

tom, we should ascertain, 1st, its nature; 2d, the period of its attack; 3d, its duration; and 4th, its seat. 1. Its nature: it may be acute and pricking, as in irritable uterus or hystericalgia; it may be a stabbing, twisting, and gnawing pain, as in carcinoma; it may be a sharp, pulsating, and burning pain, as in inflammation and congestion; it may be dull, weighty, and dragging, as in displacements of the womb. But 2d, the period of attack is of importance: it may have occurred during menstruation, from sudden exposure to cold, and accompanied with a total stoppage of that secretion, which is sometimes the case in inflammation of the unimpregnated uterus; it may occur every month, at the usual periods, either before, during, or after the appearance of the discharge, which is the case in the various forms of dysmenorrhœa; or it may take place after every conjugal embrace; or a paroxysm may occur at stated periods, with regular intervals of ease, as in irritable uterus. Again, 3dly, the duration of the pain is of importance. In inflammation of the os and cervix the patient is never decidedly free from pain, although the recumbent position may alleviate it, while digital examination and sexual intercourse greatly aggravate it. Further, a pelvic tumor, by its continued pressure on the nerves issuing from the pelvis, not only causes pain in the parts supplied by those nerves, but also impairs to a greater or less degree their power and energy; and the cause of pressure being constant, the effects, pain and impotence, are constant also.

Lastly. It is of importance, in many cases, to ascertain the seat of pain: if, as in the case just referred to, there be a tumor in the uterus, or its appendages, encroaching upon the sides of the pelvis, the obturator nerve will most probably become involved, and in consequence there will be pains at the hips, or inside of the thighs, or in the course of the adductor muscles; if the great sciatic nerve be pressed upon by a similar growth, the pain will extend to the parts supplied by this immense nervous branch, while, if it reach above the brim, and if by its unyielding nature it press upon the anterior crural nerve, the pains will, by the patient, be referred to its course and distribution.

But, fifthly. We should inquire into and investigate the state of the general health.

Sexual disease, for the most part, is marked by various degrees of deviation from the standard of health: we thus find the constitution of our patient so affected as to give rise to cachectic, anæmic, hysteric, or dyspeptic symptoms, according to the nature of the disease or the existing predisposition. Emaciation also is an almost constant attendant upon malignant or exhausting disease; but still there are maladies which affect

the uterus, as, for instance, fibrous tumor, where no emaciation or other constitutional symptoms occur unless inflammation of the tumor itself takes place, causing it to soften and break down. I have seen many cases, in which no disease of the uterus has been suspected by the patient or by her attendant, in which fibrous tumors have been detected, on a careful examination being instituted to ascertain the cause of some anomalous pains; and, further, I know two child-bearing females, in one of whom there exist two, and in the other a single tumor, who are in good health, whose labours are natural and recovery rapid, and who suffer from no one symptom beyond a slight tenderness at the seat of the tumor for two or three days after delivery. But you must not suppose that all cases of fibrous tumor of the uterus are equally inert or harmless; they frequently produce most distressing symptoms; they seem sometimes to occasion diminution of the natural monthly secretion, or, what is more common, especially when they are situated under the mucous membrane, they give rise to severe and protracted hæmorrhagic discharges, with which a profuse leucorrhœal or watery discharge generally alternates.

Again, malignant disease of the womb is, for the most part, indicated by symptoms of general cachexia, emaciation, pain, &c., which causes us to suspect the nature of the malady before a vaginal examination is instituted; but there are some cases in which the disease has made great progress, without the patient or her attendant suspecting the fearful nature of the malady within; neither is the disease at all times accompanied with pain. I have seen many cases in which patients even in the last stage of the disease have required no opiate.

6th. In investigating the diseases of the uterus and its appendages, we should inquire how the functions of the neighbouring viscera are performed. If we take a slight glance at the position of the uterus in the pelvis, it will be sufficient to convince us that any increase in its size, from whatever cause such may arise, whether from congestion, tumor, &c., certain symptoms will be produced, by which such increment will be marked. The bladder being situated in front, if encroached upon, will indicate such trespass by the symptoms of vesical irritation; while any undue pressure upon the termination of the intestinal tube will be recognised by alteration in the form of the fecal evacuations, tenesmus, hæmorrhoids, &c. Still these symptoms merely indicate the existence of some mechanical obstructing cause; they are common to many and diversified affections of the viscus.

Further, disease of the uterus and its appendages is frequently indicated by pains in

the mamma. In more than one instance I have known the mamma leeches, stumped with warm water, and medicated fomentations; rubbed with belladonna liniment, of strapped with belladonna plaister, while the disease has been seated in the uterus, where its presence has not been suspected. We also find neuralgic pains, symptomatic of disease of the uterus or its appendages, coursing along the lower extremities, attacking various portions of the spine, fixing themselves in various spots of the thorax or abdomen, especially under the left mamma, and these increased by any local cause of irritation, as menstruation, &c.

But valuable and important as it may be to obtain a perfect and accurate history of the symptoms of each case, still, without a carefully-conducted physical examination, we shall be unable to distinguish between the several diseases to which the sexual organs are liable, and consequently not in a position to employ the proper and necessary treatment.

Physical examination is threefold:—

1. Manual or Tactile.
2. Visual; and
3. Auditory.

1. *Manual*.—Manual or tactile examination may be conducted either externally or internally; the former, by the fingers through the intervention of the abdominal parietes; the latter may be instituted either “*per vaginam*” or “*per rectum*,” while an additional means of diagnosis is offered us by the use of the uterine sound or bougie.

In examining externally, it is always advantageous to have the bladder and rectum emptied; the patient should be placed in a recumbent posture, her head should be slightly raised, and her abdominal muscles relaxed.

The examiner should now endeavour to ascertain whether there be any tumor or swelling; if such be present, its circumference should be traced, its connections marked, its mobility noted; he should ascertain whether it obey the prone position of the body, whether it incline to the side upon which the patient lies, or, whether it maintain its place, whatever be her position; he should endeavour to discover whether it be firm or fluid, whether firm in some parts or fluid in others; whether it be regular or irregular on its surface.

In females who are debilitated, or who have borne many children, the abdominal parietes are usually flaccid, so that the promontory of the sacrum may be recognised, and therefore any great increase in the size of the uterus itself may also be recognised; but, in many cases, the uterus is situated low in the pelvis, especially in cases of misplacement; and in others, the abdominal parietes are so thick, and loaded with adeps, that,

under these circumstances, the hypogastric examination avails but little. And, again, it will be impossible by external examination or palpation alone, to determine whether an existing tumor be uterine or ovarian, or both, the latter co-existing with pregnancy.

2dly. Examination *per vaginam* may be instituted either in the erect or recumbent position of the patient; by the former we are more especially able to appreciate the relaxation of the uterine ligaments (from whatever cause such may have occurred).

The recumbent position, however, is more frequently employed, the patient lying on her left side, with her knees drawn up, and her head slightly inclined; having as before evacuated the contents of the bladder and rectum, the examiner, kneeling at her bedside, and anointing his forefinger, passes it into the vagina: he first ascertains whether there be any displacement of the uterus, whether it be inverted, retroverted, or prolapsed; he marks the existence or non-existence of inflammation or irritability, whether the os uteri is preternaturally firm or hard, whether there are any polypoid growths, what their consistence, sensibility, place of attachment, &c.; whether the os uteri is even and smooth, corrugated, or scabrous; he determines the weight and size of the uterus by raising the organ with his finger, and he endeavours to discover that the tumor (if one exist) felt by an internal examination, is uterine, or connected with that viscus, by placing one hand over the abdominal region, and testing whether the impetus given to the one is communicated to the other.

But, well educated as the finger of the examiner may be, the extent of information acquired through it is necessarily limited in the majority of cases; the cervix only and those parts which are seated in the roof of the vagina can be felt, and, if the latter be diseased, the information derived by a vaginal examination alone is by no means satisfactory or sufficient; and in some, where a tumor exists, where a careful external examination has been conducted, and to this we have added a vaginal examination, we are frequently unable to decide what the nature and where the seat of the enlargement; whether it be developed in the walls of the uterus, whether an enlargement or distension of this organ, whether seated in the ovary or broad ligaments, or whether it has its origin in some part of the tissue surrounding the pelvic viscera.

3. But in carefully conducting an examination of an existing disease we are accustomed to have recourse to an examination *per rectum*. This should be accomplished while the patient is in the recumbent position.

The index finger well anointed passed into the rectum ascertains the amount of

pressure made on the bowel by a displaced or enlarged womb, the existence or non-existence of recto-vaginal fistula, the enlargement or non-enlargement of the uterus itself; and further, it will enable the examiner to decide the character and boundaries of tumors situated between the vagina and rectum, or uterus and rectum, as well as those situated in the lateral and posterior parts of the pelvis. To this mode of examination patients usually feel great repugnance; still, it is especially called for in such cases as preclude the possibility of a vaginal examination; when, for instance, a fungus has grown from the cervix, and has filled, as in some instances it does fill, the vaginal passage. In examining *per rectum* the utmost gentleness must be used by the practitioner.

It must be acknowledged that an external examination or palpation, however carefully conducted, with an internal examination, whether *per vaginam* or *per rectum*, will fail in many cases to satisfy us as to the seat and even nature of any pelvic or abdominal tumors. To overcome these difficulties, and to assist our uterine diagnosis, Professor Simpson has recommended the employment of an uterine sound, or bougie, by which (to quote his words) * "it is possible to ascertain the exact position and direction of the body and fundus of the organ, to bring those higher parts of the uterus, in most instances within the reach of tactile examination, and to ascertain various important circumstances regarding the os, cavity, lining membrane, and walls of the viscus."

The uterine sound which I now show you is the one recommended by Professor Simpson. It is somewhat similar to a small male catheter; it has a flat handle to facilitate its manipulation, and the other extremity is bulbous to prevent any injury to the uterine tissues. From the handle to the bulb the stem gradually tapers, the part nearest the handle measuring one-fifth of an inch in diameter, and that nearest the bulb one-tenth of an inch, the bulb itself being one-eighth of an inch in diameter. The stem is nine inches long, and graduated for the purpose of rendering the measurement of the uterus more precise. The marks are placed on the posterior or convex surface of the instrument, which is the one in contact with the directing finger. At $2\frac{1}{2}$ inches from the bulb there is a little elevation, by which we are enabled to judge whether the instrument is introduced to its full extent into the interior of the viscus, this measurement being the usual length of the uterine cavity: from this point, the instrument is graduated towards its extremities, by grooves sufficiently

deep to be appreciated by the conducting or directing finger. The curvature of the instrument very closely resembles that of the common catheter, but as in many cases the course must be altered, it is necessary for it to be formed of a material that will admit of flexion without danger of fracture. The handle is made of wood; it is 3 inches long; its posterior surface is smooth, while the anterior surface or that corresponding to the concavity of the instrument is roughened, by which means we are enabled to judge of the direction of the point of the instrument when it is hidden in the uterine cavity.

When the instrument is used, the patient may be placed either on her back, or on her left side; if she lie on her back the forefinger of the right hand is introduced into the vagina, as far as the os tincæ of the uterus, and the instrument is glided along the finger into the orifice of the womb. If the patient lie on her left side, the forefinger of the left hand is used as a guide to the mouth of the womb, and the instrument is slipped along the palmar surface of the finger. In cases where the uterus is misplaced, and where the vagina is lax, two fingers may be passed, and by their assistance the cervix may be placed in the axis of the passages, there held, and the bougie may be thus guided along the groove, formed by the fingers into the mouth of the womb. No force is required, nay no force must be used, in the employment of this instrument; it is true, in some cases, a little resistance will be found about an inch above the os tincæ, especially in an uterus that has never been gravid, but in most instances a slight impulse or alteration in the direction of the point of the bougie will enable us to press it into the cavity. Again, in using it, we must bear in mind the axis of the brim of the pelvis, that being the direction in which it should be passed, supposing the uterus to occupy its natural position. I must direct your attention to Professor Simpson's excellent papers in the 32d and subsequent numbers of the London and Edinburgh Monthly Journal, for an exposition of the advantages afforded by his instrument; and here permit me to observe, that we should be perfectly satisfied that the uterus is not in a gravid state before we proceed to use the instrument, or we shall most certainly destroy the integrity of the ovum, and induce miscarriage or abortion.

By a simple digital vaginal examination we cannot examine with any accuracy the condition of the body of the womb, nor can we ascertain the state of the fundus, but with the assistance of the sound we can control the viscus, and can bring its several parts to the finger for investigation: again, we may carry the uterus upwards and forwards, and render the external abdominal

* London and Edinburgh Monthly Journal, No. 30, p. 556.

examination more easy or more accurate, or the posterior wall of the womb can be brought within the reach of the finger passed into the rectum.

The instrument may further facilitate the subsequent visual examination with the speculum, by guiding the speculum along the handle of the sound in these cases where the uterus is situated obliquely, or where its cervix is high and misplaced. Again, by the assistance of the sound, we may ascertain whether pelvic or abdominal tumors are or are not connected with the uterus. How common is it for a fibrous tumour of the uterus to be mistaken for an enlarged ovary, and vice versa. Every man who has seen much of female sexual disease must confess that in many cases he has been unable to give a decided opinion; there are even some recorded instances of gastrotomy, where the operation has been performed for the purpose of removing an ovarian cyst, when the tumor has turned out to be seated in the uterus itself. Now, if the sound be used, and the tumor be uterine, it will pass, as it were, into the centre of the growth, and by moving the sound, we shall influence the tumor; while, if the tumor be not uterine, we shall find most probably the viscus turned out of its normal position by the tumor, or the tumor, by means of the sound applied externally, may, if it be moved away from the uterus, be fixed by the sound, or the tumor may be fixed, and, by means of the sound, the uterus may be moved away from the morbid growth. But yet it must be granted there may be certain circumstances present which will prevent our availing ourselves of this mode of investigation; the tumor, although ovarian, may be firmly adherent to the uterus, or they may be so firmly wedged as to be immovable. But even here we may derive some information from the uterine sound, for in the normal condition of parts the ovary is placed behind the uterus in the posterior pinna of the broad ligament; if, therefore, there be a pelvic tumor, and the sound passed into the cavity of the uterus runs up behind the tumor, the probability is that it is not ovarian. By the aid of the bougie, we can measure the cavity of the uterus itself, and this will assist us in our diagnosis of some of its diseases.

There is sometimes a "morbid permanence of the state of puerperal hypertrophy." This condition of the uterus, persisting as it does in patients of weakened power, who have suffered from puerperal fever, or some other debilitating cause, has been, and may be, mistaken for a morbid growth. The uterine sound, however, will at once clear up the difficulty, and prove the enlargement to be confined to the uterus alone. Again, it will determine between this form of enlargement and those pelvic swellings that are found

after delivery, and which usually terminate in suppuration. Again, it will assist us in distinguishing between enlargement of the womb from fibrous growth and distension of its cavity, and polypus; and simply by this fact, that in the one case we can revolve the sound round the interior of the viscus, while in the other case its progress is interrupted. Further, there may be preternatural shortness of the uterus from malformation, or its cavity may be shortened by partial obliteration, or by stricture. But it is in inversion of the uterus that its aid is especially seen in confirming or disproving our diagnosis. Every person will allow that in some cases it is scarcely possible to diagnose between *inversio uteri* and polypus. Here, by measuring the uterine cavity, we shall materially assist our diagnosis: in polypus, the uterine cavity is not necessarily diminished, in many cases it is lengthened; in *inversio*, it is always diminished to a great and characteristic degree, or if it be complete it will be entirely obliterated. But time does not suffice to explain to you the various uses of this valuable addition to our means of diagnosis.

Let us, therefore, pass on to consider,—

2dly, *Visual examination*.—The organs of vision afford us no small assistance in the detection and discrimination of uterine diseases; for by the eye we recognise the waxen hue of amenorrhœa or chlorosis, the shrivelled and wasted features attendant upon carcinoma, as well as the pale and flabby appearance of patients suffering from long-standing hæmorrhages.

The eye, moreover, assists us in discriminating between the several secretions or discharges from the vagina, whether they be sanguinolent, watery, mucous, or purulent; it distinguishes tumors protruding from the external parts, *procidencia uteri* from *procidencia vesicæ* or *vaginæ*, and both from polypus; it recognises *inversio uteri*, and leads us to distinguish verrucous tumors arising from the vestibulum from vascular growths springing from the orifice of the *meatus urinarius*.

But the eye of the obstetric attendant is more especially exercised in the use of the speculum *vaginæ*, to the consideration of which I will now turn. This instrument, regarded by some as a modern invention, appears to have been known and valued some centuries since, for Hieronymus Mercurialis, in the fourth book of his Treatise, "*De Morbis Muliebrum*," and in the third chapter, "*De Fluxu Menstruorum Hæmorrhoidali*," writes, "*Cognoscuntur hujusmodi hæmorrhoides visû cognoscuntur, et aliis indiciis. Modus cognoscendi est per Dioptron instrumentum dictum speculum matricis, &c.*" A similar instrument is mentioned by Paulus Ægina, in his work "*De*

re Médica". Ruffius, also, in the third book of his work, "*De Muliebre*," has given the figure of an instrument which he calls "*speculum matricis*." Albucasis, in his Treatise, has figured, under the name of "*Vertigo*," an instrument for the dilatation of the vagina.

But, in modern times, to Recamier is justly due the merit of having restored the use of the speculum for the purpose of enabling the practitioner to contemplate the form, volume, and colour of the os and cervix uteri, as well as to assure himself of the changes those parts had undergone. It would be wearisome were I to attempt to describe the different forms of speculum that have been proposed and constructed, there are several on the table before me. The simplest consists of a plain cylinder either of metal or glass. If constructed of metal, it should be polished internally, to enable you to have a good view of the os and cervix; for several years I have been in the habit of using glass specula; in my opinion they possess many advantages, they are less expensive, more cleanly, enable you to have a good view of the os and cervix uteri as well as the vaginal canal, and through them you may introduce those applications to the mouth and neck of the womb which would tarnish or injure a metallic tube. They are made of the same size at both extremities, or they may be larger at one end than the other. Another kind of speculum, called, after its originator, Guillon, has two blades, which, being introduced into the vagina closed, allows, when opened, a considerable degree of expansion at the uterine extremity, and comparatively little at the orifice of the vagina. By means of a screw, the blades can be kept open to any extent. This instrument is readily introduced, but when opened it permits the vagina to protrude between the divisions, at the same time causing the patient much pain from the pressure exerted by the edges of the blades on the vagina itself. This kind of instrument is useful when we remove small polypi from the mouth and neck of the womb by torsion, or when we wish to examine the internal surface of the vagina, as, for instance, in urethro-vaginal fistula.

Here is another, termed Weiss's dilator; it is made with three or four blades, protected or guarded by a plug of ebony, which may be extracted after the introduction and partial separation of the blades. The extent to which it expands is regulated by screwing the handle. The objection to which this instrument, as the last, is liable, viz., the incompleteness of the cylinder, when the branches are separated, is removed by introducing a polished cylinder within the branches after they have been expanded;

but in cases where the vagina is relaxed, the patient will suffer pain from the vagina being pressed between the cylinder and the edges of the branches. It is a highly-finished and expensive instrument. Here is another instrument, consisting of three blades, and secured by means of a spring catch. When closed for introduction, the instrument is of an oval form, like the vagina, but when introduced and extended, it forms a perfectly round cylinder, its internal surface being plated and highly polished; its extension is secured by means of a thumb-screw, which enables it to resist any pressure from without, and prevents the blades from collapsing. The introduction of the instrument is facilitated by an ebony conductor, which, by turning a little to either side, may be readily withdrawn after the instrument is extended by closing its handles. This instrument is readily introduced, it is easily expanded, its cylinder is complete, its internal surface is highly polished, and there is but little pain attending its employment.

In introducing the speculum the patient may be placed on her left side, with her knees drawn up, or she may lie on her back. It may be employed with perfect ease without any exposure, and if the clothes be properly arranged around the tube, the mouth of the speculum is the only point which is uncovered. A finger having been introduced to ascertain the position of the os uteri, the speculum is to be passed in a line drawn from the orifice of the vulva to the point of the coccyx; it should then be passed up as far as the os uteri. Sometimes the cervix is inclined so far backwards, that the speculum cannot shew it: various contrivances have been invented to bring it forwards into view, but there is none in my opinion better than the uterine sound, provided the uterus be unimpregnated. If the patient be pregnant, a finger may be passed into the rectum, and by its assistance the womb may be directed to the speculum, or the patient's position may be changed. A lighted candle or a taper is sometimes employed to enable us to see distinctly the os uteri, but it is better if possible to have the patient placed in such a position that a powerful light will be thrown into the tube from the window. Many deviations from the natural state of parts will be seen by daylight, which an examination by candle-light, however well managed, will not detect. Sometimes the cervix uteri is too large to be admitted into the speculum; in such cases we must alternately depress its different parts, and thus successively bring the entire organ fairly into view. By the aid of this instrument any change in the form of the os uteri, its adhesions, cicatrices, however caused, ulcerations, whether they

be the effect of inflammation, or whether specific or malignant, will be seen. By its means, ecchymoses, erosions, aphthæ, milary vesicles, &c. may be perceived, which the finger, however well educated in tactile examination, could not detect. By means of the speculum the cervix may be scarified, and leeches as well as other local remedies may be applied. But it must not be forgotten that there are certain circumstances which will prevent our using the speculum. In very young women on account of the hymen, in very old women by reason of the great shrinking and contraction of the vagina, there may be membranous bands stretching across the vagina, and in other instances the capacity of this canal is diminished from cicatrices. Again, there may be tumors obstructing the passage of the instrument, or there may be malignant growths forbidding its introduction.

3. *Examination by the ear.*—By means of auscultation, we not only prove the existence or non-existence of thoracic disease in patients affected with organic changes in the uterus, and upon whom we intend to operate, but we also ascertain the existence or co-existence of pregnancy and tumor in abdominal enlargements. It is not my intention to enlarge on the great assistance we derive from the stethoscope in our diagnosis of pregnancy; that will be fully detailed to you by my colleague; but I cannot pass by this means of diagnosis without alluding to an excellent treatise on "Obstetric Auscultation," by Dr. F. H. Naëgele, and which has been translated from the German by my friend Dr. C. West.

In his work entitled "*Maladies propres aux Femmes*," Nanche has recommended auscultation to be applied by means of a metroscope, consisting of a tube of wood curved at nearly a right angle, one end of which is to be introduced *per vaginam*, and applied to the cervix uteri. He states that both he and Pichou have thus discovered the existence of pregnancy in many cases under treatment as diseases of the uterus; but in this method of examination I have had no experience.

4. *Nature of the discharges.*—Many practitioners rest satisfied with ascertaining the nature of the discharges, and upon this form their diagnosis; they think that "transparent mucous discharge indicates increased secretion from the vaginal surface, that white mucous discharge attends inflammation of the cervix; they affirm that cauliflower excrescence, hydatids, and the oozing tumor of the labium, are attended with a watery discharge, that inflammation of the lining membrane of the womb and vagina is accompanied with a purulent discharge,

and lastly; they regard sanguineous discharge to indicate ulceration or cancer." But we must frequently err if we frame our diagnosis on the nature of the discharges alone; for just recal to your minds the parts from which these secretions proceed; they are the internal surface of the uterus and the fallopian tubes. The internal surface of the cervix, with its numerous glands, the membrane lining of the vagina, the lacunæ of the os externum, and lastly, the mucous membrane of the urethra, from each and from all an increased secretion may take place, at one and the same time, and thus an intermixture of various discharges must inevitably take place. Neither are we able accurately to discriminate between a mucous and a purulent discharge by simple inspection. Further, where inflammation and ulceration of the cervix exists in women exposed to sexual intercourse, we shall find a discharge popularly termed leucorrhœal, but which is of a mixed character, (mucosopurulent.) Again, in polypus uteri, there is usually hæmorrhage with a discharge of a watery character during the intervals of bleeding, but, occasionally we find that in place of hæmorrhage there is a fœtid purulent discharge *ab initio*,—a remarkable instance of which occurred in this hospital some years since, and was removed by ligature by my late colleague, Dr. Ashwell.

Again, simple mucous discharge may assume every variety of shade between white and light green, differing also in consistency, attending various forms of uterine disease, or produced even by irritation in a distant organ, and yet such a discharge will in common parlance be termed "leucorrhœal." Remedy after remedy may be employed, lotion after lotion injected, one practitioner after another may be consulted, and yet, without a proper investigation of the case be instituted, the true character and seat of the disease cannot be ascertained. There may be cases in which, for some time, internal examination both by touch and speculum may not be permitted, and we shall be compelled to form our diagnosis upon the constitutional and local symptoms; yet, such cases are but few, and in my experience I find that when an internal examination is proposed with firmness and kindness, when its necessity is pointed out with delicacy and caution, the patient, convinced of the honour and singleness of purpose of her medical attendant, submits to the necessary investigation, and enables the practitioner to proceed satisfactorily and confidently in the treatment of her disease.

I must reserve the consideration of the cases until we next meet.

A COURSE OF
LECTURES ON DENTAL PHYSIO-
LOGY AND SURGERY.

Delivered at the Middlesex Hospital School,

By JOHN TOMES, Esq.

Surgeon-Dentist to the Middlesex Hospital.

LECTURE I.

GENTLEMEN,—As dentist to the hospital of which you are pupils, it becomes my duty to give you some account of the cases which come under my care; to describe the nature of the diseases to which the teeth are liable, and the principles upon which they are most successfully treated. In doing so, it will be necessary for me to recal to your recollection the external form and situation of teeth; but in this I shall chiefly confine my observation to the human teeth; then the peculiarities of dental structure and development must be considered. Yet some anatomical points will be more intelligible by a comparison with other structures, or to the same structures, as they occur in animals holding a lower place than man in the scale of organized beings. When we come to these I shall go so far into the subject of comparative anatomy of the teeth as shall be subservient to our explanatory purpose.

Having considered the descriptive and structural anatomy of the dental apparatus, we shall pass to the main subject of these lectures—the diseases of the teeth and their treatment. The diseases of the temporary teeth will form the first division of the subject, while the maladies of the permanent teeth will form the second.

In children teething, with the diseases arising from interrupted dentition, are the most common, and at the same time the most formidable to which they are liable; indeed, on reference to the bills of mortality of this metropolis, it will be seen that of those who die under the age of fifteen, four per cent die from teething. This will at once show that too much attention cannot be given to dentition and its coincident disorders by those engaged in medical studies. Many of these diseases will be treated of by your lecturer on Midwifery, but dentition itself, with some of the symptoms of interrupted dentition, will necessarily come under our consideration.

The diseases of the permanent teeth are important from their frequency, and their painful character when present; and though not in themselves often dangerous to life, yet they exercise an important influence on other diseases situated in their neighbourhood; as well as on indigestion and the various forms of nervous and spasmodic dis-

ease. During the year of 1844, of the 9140 out-patients who applied for relief at this hospital, 1050 applied with diseases of the permanent teeth. Thus, while the frequency of the disease commands our attention, it at the same time renders ignorance of the treatment unpardonable.

The last subject to engage our attention will be the means we possess of supplying the loss of the permanent teeth. Under this head will be described the construction of artificial teeth, the manner of using them, together with such information as the general practitioner may find useful when applied to by his patients for information upon the subject of artificial teeth.

Teeth may be defined to be hard bodies projecting from the surface of the mucous membrane, and situated in the alimentary canal, anterior to the pyloric orifice of the stomach, their use being subservient to nutrition. The hardness and density of the teeth bear a strict relation to the density of the skeleton, and it will be shown that the structure of the teeth, with few exceptions, holds an equally exact relation to the structure of the tissue composing the skeleton. In the class mammalia, the dental and osseous tissues reach their highest point of development and average density, while in fishes they are lower in organization and less hard; the structural relations being in this closer even than in the former class.

As regards situation, the teeth are placed in the alimentary canal anterior to the pylorus, and are found to be occupying various parts of this line, in strict conformity to the wants of the particular animal.

In animals, as low in the scale as the *monads*, elementary teeth are found disposed around the mouth in the form of stiff spines. Among the *annelidae* the leech is remarkable for sharp teeth, with which it inflicts its tri-radiate wound. The individual extremely minute teeth are sharp-pointed cones fixed in single lines upon three semi-circular-edged maxillæ, like the teeth of a circular saw. The maxillæ have their armed edges directed towards a common centre, and are each by suitable muscles moved upon their axes, and are at the same time made to approach each other; by this combination of movements, the animal saws the three-lined wound with which we are so familiar.

In many insects hard horny plates occupy the oral orifice and perform the office of incisor teeth, while the oesophagus is provided with short strong teeth, which perform the function of molars, as instanced in the grasshoppers and other. The proventriculus in all mandibulated insects is armed with numerous horny teeth, which vary in form, number, and arrangement, in the different species; some being flat, others

and recurved.

In structure the teeth of insects are similar to the external skeleton.*

In the division *mollusca*, of which the common snail is a member, we have a flat curved plate for incising, with which the creature divides the vegetable matter upon which it feeds. In the same order some of the vegetable-feeding species are furnished with dental organs in the stomach.

In *fishes* the teeth are implanted in the vomer, in the palate, and pharyngeal bones, in the branchial arches and os hyoides, as well as in the maxillary and inter-maxillary bones.

In the *mammals* the dental organs are alone found arranged in single lines in the maxillary and inter-maxillary bones.

Thus we find by examining various members of the animal kingdom, teeth occupying every point of the anterior part of the alimentary canal.

Teeth are used either as organs for the mastication or prehension of food. They are also used as organs of offence and defence, and sometimes aid slightly in locomotion, and in man assist in articulation; but these may be considered as accessory uses only.

It admits of question whether the bills of birds should be regarded as dental organs; my opinion is that they should, since they are situated at the anterior orifice of the alimentary canal, are distinctly organs of prehension, and much used in the laceration of food, as instanced in carnivorous birds.

It may be objected that the structure is dissimilar to that of the skeleton; this objection will not, however, hold good, as we find in some animals the teeth have a structure similar to the cuticular appendages; as the nails such are the teeth of the ornithorhynchus. It becomes obvious, therefore, that they are two classes of teeth—osseous teeth, and cuticular teeth; the former having gelatine as their animal base, the latter albumen.† The structure of osseous teeth is similar to the structure composing the skeleton, whereas the cuticular teeth have a structure similar to the appendages of the epidermis. The transition from the one class to the other is not, however, sudden; for, although we do not find a mixture of the two structures in any tooth, yet we do find that the osseous teeth of some animals have properties in common with the cuticular teeth. Thus the incisor teeth of the rodentia grow during the whole life of the animal, and the cutting edge becomes extra-vascular from the recedence of its tubuli from their connection with the pulp cavity; a condition common

to cuticular teeth, which are constantly in many respects, save in situation, vascular. Compared to the nails and horns. From these considerations we must admit the bills of birds and of tortoises as belonging to the dental system.

A further confirmation of this opinion will be found in the manner of development, as instanced in the mandible of the parrot and tortoise. In the order of birds called Merganser the mandibles are armed with comical sharp teeth.

In the jaw of the *balæna mysticetus*, we have the whalebone developed in the place of teeth; the structure of which is somewhat similar to that of the mandibles of birds.

By making this distinction in the two kinds of teeth we are able to understand the conflicting opinion that existed so many years, but which recent investigation has set at rest; namely, as to whether the teeth were to be regarded as possessed of life and organization, or as inorganic excretions like the hair and nails.

Teeth admit of a general classification based upon their various external forms, and the purposes for which they are adapted. 1st. Teeth of a conical shape with sharp points: such are found in the canine test of the carnivorous animals, also in the more simple conical and lancet-shaped teeth of the shark tribe. Teeth of this class interlock with those of the opposing jaw, and are used either for seizing or retaining the prey. 2d. Teeth with sharpened chisel-shaped edges for cutting, as the incisor of the rodentia, illustrated in the rabbit and rat. 3d. Teeth for tearing, lacerating, as the molars of carnivora. 4th. Teeth for crushing, as seen in the monkey tribes, where the principal food consists of fruits. 5th. Teeth for grinding: these teeth present a large flat surface, and the jaw is so articulated as to admit of great lateral motion. The grinders of the elephant afford an excellent example. This class of teeth belong mainly to animals subsisting on grain; which requires to be reduced to powder before it is received by the organs of digestion. The conical-pointed tooth for piercing, and the broad flat tooth for grinding, offer the two extremes in form; and in passing from the one to the other, we may, by examining the teeth of various animals, observe minute gradation in the change from the vertical to the lateral development, or *vice versâ*.

But in all instances we find the jaw beautifully adapted for the most efficient use of the peculiar teeth with which it is armed. So that from a view of the teeth we may with certainty predict what would be the form of articulation of the jaw to which the the

* Burmister's Entomology.

† Owen's Odontology.

belong, and on the other the form of teeth articulating the maxilla would be furnished.

The typical form of a tooth, as developed in the mammalian class, is a modified cone or combination of cones; the apex of the cone being sometimes on the masticating surface, at other times at the end of the root, in teeth that are perfected in a short space of time, as the human teeth, the masticating surface, or the base of the crown, will present the base of the cone; while the fang presents its apex; on the other hand, in cases where the development of the tooth is progressive through the whole life of the animal, the base of the cone will be at the edge situated deep in the jaw where the dental development is going on. In man the base of the cone is in the crown of the tooth, and the apex at the extremity of the root, or on the grinding surface.

In the front teeth we have a simple cone when seen from the front, the cutting edge corresponding to the base, and the end of the root to the apex of the cone; seen from the side they present two cones united by their bases, the point of union being the neck of the tooth. The crown and root of the canine teeth present each a cone uniting at the neck of the tooth.

The molar teeth exhibit in their fangs modified cones, which, uniting laterally at their bases, form the neck of the tooth, while the prominences of the grinding surface are formed of lesser cones. Thus, in examining a developing or a recently developed tooth prior to any alteration of form from use, the tendency to the conical formation is everywhere found.

The teeth in the human subject are arranged in the jaws in two parabolic curves, the one in the upper jaw being the larger of the two. From the greater size of the curve the teeth of the superior maxilla close in the anterior part of the mouth external to those of the inferior maxilla, and at the sides of the mouth the external edge of the molars of the upper close over the external edge of those of the under jaw.

The crowns of the teeth are arranged in an even line, no tooth rising higher than its fellows; a condition peculiar to man, and arising from the equal development of each tooth; a second peculiarity is found in the absence of intervals between the anterior and the grinding teeth.

The teeth are developed in pairs, one on either side of the mesial line, and amount in the adult, when perfect in each jaw, to thirty-two; the dental formula being, incisors, $\frac{4}{4}$; canines, $\frac{2}{2}$; bicuspides, $\frac{4}{4}$; molars, $\frac{6}{6}$. In the child, prior to shedding the temporary teeth, the number amounts to twenty, only the dental formula being, incisors, $\frac{4}{4}$; ca-

and permanent set of teeth are unequal in number will be seen when the development of the teeth and jaws are considered.

For the convenience of description, a tooth is divided into three parts; the crown, which is the exposed portion; the neck, which is continuous with the crown, and is covered by the edge of the gums; and the root, or fang, which is a continuation of the neck, gradually diminishing in size to its extremity, and lodged deep in the jaw.

Three tissues enter into the formation of the human tooth; the enamel, which coats with variable thickness the crown of the tooth; dentine, which forms the great bulk of the tooth; and cement, or dental bone, which forms the surface of the fang.

In the centre of each tooth is a cavity partaking generally of the shape of the exterior of the tooth, being very small at its commencement in the root, and gradually increasing in size till it terminates in the crown. The vessels, nerves, and remains of the formative pulp, occupy this cavity, from which it has received the name of the pulp cavity.

The crown of each tooth presents five surfaces. First, a masticating surface; second, an external or labial surface; third, an internal or lingual surface; fourth, an internal or lingual surface, which in the front teeth is directed towards the mesian line, and in the molars points anteriorly. Fifth, the posterior surface.

Each tooth is larger in its labial surface than in its lingual, arising from the greater size of the curve, described by the outer or labial surface, than that formed by the inner or lingual surface of the teeth.

We now come to the consideration of each kind of tooth, beginning with those situated at the anterior part of the mouth, and proceeding in the order of their position backwards towards the angle of the jaws. The description, however, must be general, for as no two teeth of the same kind are *exactly* similar in size and form, a description, taken from an individual specimen, would, when applied to other individual teeth of the same kind, prove incorrect.

The *incisors* are four in each jaw; two central, two lateral. Of those in the upper jaw the central are the larger. The crown presents a large scarcely convex labial surface, is wedge-shaped from behind forward, and terminates in a broad cutting edge, similar in shape to a chisel. The root is conical, diminishing in size gradually to the apex, and the tooth when seen from the front presents in outline a tolerably perfect cone, the cutting edge forming the base.

If the tooth be examined from the side it will present the outline of two imperfect

cones united by their bases, the apex of one cone being at the cutting edge of the tooth, and of the other at the end of the root. The side near the mesial line is longer and less curved than the opposite side of the tooth, and the angle formed by the junction of the mesial side and the cutting edge is less rounded and less obtuse than that formed by the opposite side and cutting edge. The anterior surface of the crown is slightly convex in each direction, and is commonly marked by one or two shallow and irregular grooves running in the length of the tooth. The lingual surface of the crown is slightly concave in each direction, but principally from above downwards; the concavity terminates in a ridge or basal ridge, situated at the commencement of the neck, where the tooth passes into the gum. The enamel terminates on the anterior and posterior surface of the tooth in a curved line, the convexity of the curve being directed towards the fang, while in the sides of the tooth it terminates in a curved line with the convexity directed towards the crown. In point of size the central are larger than their neighbouring teeth, the lateral incisors, the average length of the former being about one inch. This remark applies to the incisors of the upper jaw only, for in the lower row the lateral are the larger teeth.

Central incisors, lower jaw.—Though possessing a general resemblance these are much smaller than those of the upper jaw, being only half as wide on the cutting edge. The diameter of the antero-posterior surface is, however, almost equal. The lateral surfaces rapidly converge to the neck, which is succeeded by a much compressed and slightly grooved root.

The enamel terminates a curved line on the labial and lingual surfaces, the convexity of the curves being directed towards the root of the tooth: on the lateral surface the terminal curves of the enamel are reversed. Average length, eight-tenths of an inch.

Lateral incisors, upper jaw.—Are less in lateral diameter than the centrals, frequently to the amount of one-third, the depth of crown and of enamel being slightly less; the mesial surface is more or less concave, while the surface opposed to the canine is slightly convex. The anterior surface is generally convex, and broadest at the cutting edge than at the neck of the tooth. The posterior surface presents an inclined plane, directed from behind forwards, whereby the cutting edge is formed, while the neck of the tooth is left thick and strong. The fang is laterally compressed and somewhat shorter than that of the central; the posterior basal ridge is generally absent, though sometimes strongly marked.

Lateral incisors, lower jaw.—Are slightly larger both laterally and antero-posteriorly

than the central incisors; the depth of the crown in the two teeth being nearly equal, while the fang of the former is slightly the longer.

Canines, or cuspidati, upper jaw, placed between the lateral incisors and the first bicuspid are the largest of the single-fanged teeth, and have a more deeply implanted fang and a greater antero-posterior diameter than either of the incisors. The crown terminates in an obtuse point, from whence it gradually increases in lateral dimensions, attaining its greatest diameter at a spot equi-distant from the point and neck, towards which it gradually diminishes in size. The external surface is convex, with a slight ridge, commencing insensibly at the neck, and becoming stronger as it approaches the point, bounded on either side by a depression; a similar ridge also exists upon the posterior surface of the tooth, which, like the central incisors, presents an inclined plane, terminating in a slight basal ridge. Of the two sides, the one next the bicuspid is the more convex; the fang is longer than that of any other tooth; it is compressed laterally, and is slightly grooved at its sides: the length often amounts to one inch and one-sixth. The existence of a groove in the sides shows a slight tendency to the formation of two fangs, and may be regarded as the first step towards the formation of roots. I have in my possession a canine having two fangs.

Canine, lower jaw, differs from those of the upper jaw principally in terminating in a broad point, and in being less convex anteriorly; in having more perpendicular coronal sides, and a fang slightly shorter and more deeply grooved in the sides: the perpendicular ridge in the internal or labial surface is also very slight or altogether absent. The average length is one and one-eighth of an inch.

Bicuspid, or premolars, upper jaw, form the next class; and in them we find the most simple form of molar tooth. Of these there are four in each jaw—two on either side; and, from their position, called the first and second bicuspid.

The crown is composed of two cones united laterally, from which proceed a laterally compressed fang, common to each. The labial surface is convex, and, like the canine, terminates in an obtuse cone. The lingual, or internal surface, is also convex, and, unlike either of the foregoing teeth, placed vertical to its alveolus. Of the two tubercles, or cusps, of the masticating surface, the external is the larger, especially in the anterior bicuspid. The crowns of these teeth are at least one-third shorter than those of the previously described teeth. The fangs are either two in number, corresponding to the two cusps; or if there are not

two, the one is very deeply grooved and perforated by two cavities uniting to form one in the crown, or if there be a single cavity, it resembles in section a line dilated at its extremities. In some few instances the single fang is deeply grooved externally as well as on its side, and at the apex divides into three points, thus showing a strong tendency to the formation of three fangs similar in position to those of the upper jaw.

The bicuspidæ, lower jaw. have some points of dissimilarity when compared with those of the upper jaw. They are generally more rounded, and the labial surface is more convex. The two tubercles of the masticating surface are less distant from each other, the grooves separating them being imperfect, and not carried fully across the tooth. The fang also is more rounded, and seldom or ever double. Indeed, these teeth may be considered as intermediate between the canines and bicuspidæ of the upper jaw. The first and second are much alike, the second being rather the larger, and having a more developed inner cusp. In the first, the two cusps are connected by a low ridge passing from the one to the other across the centre of the crown.

Molars, upper jaw.—There are three pairs of molars in each jaw, upper and lower, named in the order of their respective places, as regards the anterior part of the mouth, first, second, and third. The first and second pair being generally much alike, may be described together. The masticating surface is armed with four cusps, two external or labial anterior and posterior, and two internal or lingual anterior and posterior. Of these the anterior internal is much the largest, and is connected to the posterior external cusp by a low ridge, separating, by its oblique course, the anterior external, and the posterior internal, from each other. The grooves separating the cusps at their bases extend over the external and lingual surface of the teeth, but are lost before they reach those surfaces of the tooth which adjoin the neighbouring teeth. The cusps are, however, subject to variety in number, especially in the second molar; thus sometimes several lesser ones appear, while at others the two internal or lingual cusps are united in a large one. The crown of the tooth, disregarding its tubercles, is a four-sided figure, with parallel sides, united with two obtuse and two acute rounded angles; two sides standing parallel with the line of the jaw, while the other two are directed inwards and backwards towards the pharynx on the opposite side. The roots are three in number, two external and one internal. Of the two external fangs the anterior is the larger, and stands a little more outward than the posterior root; they are each compressed laterally, and have their

greater diameter from without inward. The third, or palatine fang, is much larger than either of the others; it is broad and thick at its base, and, if there be two inner coronal cusps, grooved as though formed of two circular roots. It is directed obliquely upwards and inwards towards the palates. In some few instances there are four distinct fangs;* on the other hand, it is by no means uncommon to find the palatine and the anterior, but more frequently the palatine and the posterior fangs united in one, the points of union being marked by longitudinal grooves. The enamel terminates gradually in an even line round the neck of the tooth.

Molars, under jaw.—Of these the first molar is the largest; the grinding surface of this tooth is divided by an irregular cross-shaped fissure into five tubercles, two anterior and two posterior; between the two latter the fifth, a wedge-shaped cusp is situated.

When the tubercles have been worn down by use, the grinding surface offers a tolerably square surface, surrounded by a ring of enamel. The external surface of the crown is usually marked by a vertical groove, which often passes half way down the crown, and ends in a small hole, in which disease often shews itself.

The roots are two, one anterior, and one posterior. They are strong, much compressed, and grooved from behind forwards. generally diverge and turn a little backwards, sometimes their backward course is very considerable. I have seen one or two instances in which, instead of two grooved fangs, four distinct fangs have been presented. In the second molar we seldom see the fifth cusp, neither is the tooth so large as the first. The roots are not unfrequently united in one conical mass; in other respects the second resembles the first molar.

Third molar, upper jaw, though generally resembling the first and second, is, in most instances, more irregular in form, and less in size. The fangs are frequently compressed into a conical mass, sometimes turning in one direction, sometimes in another. Occasionally the three fangs are separate and well developed, but it is not uncommon to find them more numerous, small, and irregularly bent. The crown is commonly larger from side to side than from before backwards.

Third molar, under jaw.—This is a larger tooth than its fellow in the upper row. The crown usually bears four cusps, and resembles the adjoining molars, except that it has a more rounded appearance. The roots are two in number, generally directed backward, and very commonly connate, the lines

* Bell.

of union being marked by longitudinal grooves; a similar groove is also seen in the other sides of the root, thus giving evidence of the tendency to the development of four fangs corresponding with the four cusps.

Original Communications.

PRACTICAL OBSERVATIONS ON SOME OF THE MORE IMPORTANT SPECIAL DISEASES OF THE SKIN.

By JOHN ERICHSEN, F.R.C.S.

Lecturer on Physiology and Surgery at the
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[Continued from p. 1210.]

ACNE.

IN *acne rosacea* local means are of much less service than in the other forms of the disease; and we can only expect to accomplish a cure by directing especial attention to the correction of any morbid condition of the abdominal organs, and by impressing upon the patient the necessity of extreme attention to hygienic and dietetic means.

Caustic applications, such as the nitrate of silver in stick, or in concentrated solution, the hydrochloric acid, and blistering ointment, have been said to have effected occasionally a cure of this disease. Of these I have had but little experience, never having employed them myself, and having only seen them used in two or three cases by others, and most certainly with no encouraging effect. The only local means that I have found of any service in cases of *acne rosacea* are the vapour-bath night and morning, and the occasional use of the white precipitate or citrine ointment.

It is in these cases, however, that the *Liquor Potassæ*, administered internally, is of essential benefit, provided it be given in sufficiently large doses, and its use be persevered in for some length of time. The efficacy of the *Liquor Potassæ* is, I think, increased by combining it with the bicarbonate of potass; and I have succeeded in curing several obstinate cases of *acne rosacea*, one of which was of eight years' standing, by perseverance in the use of this medicine, in combination with the general treatment insisted on

as necessary in all cases of *acne*. The formula that I usually employ is—

R. *Liq. Potassæ*, ʒj.; *Potassæ Bicarb.* ʒss.;
Aquæ, ʒviij. One table-spoonful to be taken twice a day in half a tumblerful of nettle-tea, and the dose to be gradually increased until an ounce is taken.

At the same time, the patient must be put on a very bland diet; all stimulants must be strictly interdicted, and care must be taken to guard the face from the influence of sudden changes of temperature, and not expose it to the sun or wind.

The disease that I am now about to mention, although closely allied to *acne*, has received but little attention from writers on the diseases of the skin, having only, I believe, been noticed by Rayer and Plumbe, who confounded it, however, with vitiligo, from which it is altogether different.

It consists of a number of pearl-like tubercles, varying in size from a pin's head to a split pea, of a whitish or greyish colour, without any inflammation of the neighbouring skin, scattered about those parts on which the sebaceous glands are numerous, as, for instance, the forehead, eyelids, and cheeks, usually remaining for a considerable length of time, and very rarely suppurating.

On examining these tubercles closely, it will be found that they consist of a small mass of dried sebaceous matter, which appears to have been arrested at the orifice of the follicle by a scale of epidermis, which retains it there and prevents its escape. The small follicular tumor thus formed has a whitish grey, or slightly yellow tinge, and usually a more or less glistening or pearly aspect. It may remain for a considerable length of time, and may terminate either by suppuration, forming an *acne pustule*, which is very rarely the case, or else most frequently by resolution, the scale of epidermis being ruptured, and the small mass of sebaceous matter being rubbed off.

This disease occurs most frequently in young females, more particularly in those of a leucophlegmatic habit of body.

The only disease with which this affection can be confounded is vitiligo, and from this the diagnosis is sufficiently easy. In vitiligo, which is an extremely rare affection, the tumors

are much larger, occur in clusters, involving considerable extent of surface, are more solid, and have a tendency to creep along in particular directions, leaving a white shining cicatrix, as if from a burn. In the disease under consideration, on the other hand, the tumors are small, rarely larger than a pin's head, and never exceeding a split pea in size; they are isolated, and scattered singly here and there, can be picked off the skin with the point of a lancet, and never exhibit any tendency to creep along the surface.

The following case will illustrate the progress and treatment of this disease.

CASE I.—Jane M—, æt. 16, came under my care on the 2d of March, 1843. Is a pale, chlorotic-looking girl, rather tall and stout for her age, with grey eyes, and light-brown hair: has menstruated, but very irregularly. First became affected with her present complaint about eighteen months ago. Can assign no cause for it.

There are a considerable number of small pearl or bead-like tubercles situated about the lower part of the forehead, the eyelids, upper part of cheeks and neck. They are of a whitish, or yellowish-grey colour, rather hard, and covered by a thin layer or scale of epidermis. They can readily be picked off with the point of a lancet, and never inflame; are most numerous during the warm weather.

She was ordered a pill composed of the sulphate of iron, gentian, and aloes, night and morning, to rub in the Ung. Hydrarg. Nitratis at night, and to foment the face. She continued this treatment without much, if any, benefit for about a fortnight. She was then ordered two grains of the iodide of iron twice a day, and to apply a lotion of a drachm of the sulphuret of potass in eight ounces of water several times a day. This treatment was continued until the beginning of June, when, the greater number of the tubercles having disappeared, and the general health being much improved, she discontinued it. In the course of a few months the disease returned, but the same treatment being had recourse to, it was quickly cured.

Acne Sebacea.

An increase in the sebaceous secretion of the skin may take place under two forms; either in the fluid or solid condition.

In the one case, when the hypersecretion takes place in a fluid condition, the part affected looks greasy, and is constantly bedewed with an oleaginous secretion, compelling the patient frequently to wipe the part affected. The orifices of the sebaceous follicles are usually slightly enlarged, giving the skin a coarse appearance, and the disease most commonly occurs in individuals of a bilious temperament.

The other forms in which this affection occurs is less common, and usually presents the following characters. The skin of the part affected is covered by a number of yellow unctuous scales, resembling closely the cerumen of the ears, or yellow bees'-wax. These scales, or incrustations, are sometimes rather hard and thin; at others, softer and thicker. They are always traversed in all directions by a multitude of straight fissures, giving each scale a diamond or chequered shape. The surrounding parts are usually greasy, and the subjacent skin appears, when the incrustations are detached, to be red and tender, and exhibits the dilated orifices of a large number of sebaceous follicles.

The following cases are good illustrations of this disease.

CASE II.—Matilda Cooper, æt. 26, came under my care July 6, 1843. She is of moderate size, dark complexion and hair, and grey eyes.

Has had the disease under which she is now labouring since the preceding Christmas. Attributes it to exposure of the face to a cold wind after having been for some time in a hot room. The tip and both alæ of the nose are very much swollen, at least to double their natural size; are hot, red, and indurated, and covered with thick yellow unctuous scales, which are very adherent. The skin of the face generally has a greasy appearance. The general health is good, with the exception of an habitually constipated state of the bowels.

The patient was directed to apply warm bread and water poultices day and night to the nose until the incrustations had separated, and then to steam the part by holding it several times a day over a jug of hot water. She was likewise ordered to take a saline aperient every second morning. This plan of treatment was persevered in for about ten days, at the expiration of which time the incrustations had

been completely removed, and the redness, heat, and swelling, were much lessened. She was then ordered to apply the Ung. Hydrarg. Nitratis, diluted with two parts of Zinc Ointment, night and morning, and to poultice the parts every second night.

On the 2d August, nearly a month after she had begun her treatment, she was very much better; the nose had resumed its natural shape, and the skin covering it had a healthy appearance, with the exception of being more red and unctuous than natural. She was now ordered a lotion of ʒj. of Sulphuret of Potass. to eight ounces of water three or four times a day, under the use of which her natural appearance was speedily completely restored.

CASE III.—Miss D——, twenty eight years old, of small stature, with grey eyes, dark complexion and hair, came under my care on the 19th of last April for sebaceous exhalation of the face, which has existed for more than a twelvemonth. She is unable to account in any way for the occurrence of the disease, her general health being in every respect perfectly good. The forehead, cheeks, nose, temples, chin, and parotid regions, are covered with irregular patches of inspissated sebaceous matter, the subjacent integument being reddened and congested. These patches of sebaceous matter vary considerably in size from that of a pea to a shilling, or even larger, are very irregular in shape, and elevated above, in fact, lie upon the skin, and present shades of colour running from a rich yellowish brown to a greyish green, according to the age of the particular patch. When this sebaceous matter is removed, the subjacent skin is found to be red, tender, and apparently congested. The skin between these patches is greasy, and studded here and there with a few pimples of acne. The disfigurement is very great, so much so as to compel her to keep the face covered up when she goes out.

She was ordered to apply bread and water poultices day and night until the whole of the sebaceous incrustations were removed; to take 30 minims of the Liq. Potassæ twice a day in half a tumblerful of infusion of nettles, and to increase the dose by five minims every third day until sixty were taken: the bowels were kept open with saline aperients.

After the poultices had been continued for five days the face was perfectly cleared of the sebaceous matter; she was then ordered to apply the Unguent. Hydrarg. Nitratis, diluted with two parts of Zinc Ointment, night and morning; to apply the poultices at night only, and to continue the Liquor Potassæ. This treatment was persevered in until the middle of July, when the face was perfectly well, there being merely left a few reddish discolourations in the site of the former patches, and these have rapidly yielded to the employment of a lotion of the Sulphuret of Potash.

CASE IV.—W. M., Esq. ætat. 28, of moderate conformation, and bilioso-sanguine temperament, had formerly been an officer in the army, in which capacity he served for some time in the West Indies. On his return, about eighteen months before I saw him, he was attacked with small-pox, which disease he had in rather a severe form; and it was on his recovery from this that he first noticed the affection of the face for which he came under my care. During the whole of the intermediate period, from the first appearance of the disease until the time that he placed himself under me, in all about sixteen months, he had been subjected to a great variety of medical treatment, without, however, deriving any benefit: the means used being for the most part either of a specific or of too stimulating a nature.

On the 2d December, 1841, when he first consulted me, he resembled very closely Plate 18 of Bateman's Delineations, the disfigurement, however, being much greater than in Bateman's case; indeed, so great was it, that the patient, who, judging from a portrait painted before the affection presented itself, was naturally good-looking, was now so repulsive in appearance as to be unable to go out of doors during the day-time lest he should attract the notice of passers by, and when he ventured out at night was obliged to wear a veil. The disease appeared in the form of a triangular patch of dirty yellow, yellowish-grey, and yellowish-brown crusts, extending over a great portion of both cheeks; the base being opposite the roots of the whiskers, and the apices coalescing on the bridge of the nose; crusts of a similar nature likewise covered the alæ of the nose, the

upper lip, and the lower part of the forehead between the eyebrows. This latter patch was also of a triangular form, the apex resting on the root of the nose. On examining these crusts more closely they were found to be divided by innumerable fissures into fragments of a square or diamond shape. These were thickest about the alæ of the nose and upper lip, in which situation also they were softer, and of a clearer yellow or yellowish-brown colour, than elsewhere; resembling, indeed, sufficiently closely the cerumen of the ears or portions of yellow wax. Towards the cheeks they gradually thinned away, and assumed a more laminated character, and a dirtier yellowish-grey colour, verging in some parts into yellowish-green, presenting some resemblance to coarse shagreen. This was also the appearance of the disease as it affected the forehead. The skin at the bottom of the fissures on the nose, or where the crusts had separated, was of a reddish colour, and somewhat glazed. There was no discharge from the diseased parts. The chief discomfort that the patient complained of, besides the unsightly appearance, was a feeling of stiffness or tension about the face. The conjunctivæ were slightly inflamed. The general health appeared pretty good, with the exception of some slight dyspeptic symptoms, the tongue being rather coated towards its root and the bowels confined, which were in all probability attributable to the want of exercise; the patient for some considerable time past having only ventured out, and that but occasionally, after dark, although he was naturally of active habits.

The disease, then, appearing to be altogether local in its nature, unconnected with any constitutional cause, the only general treatment that I had recourse to was the exhibition of an occasional saline aperient, with small doses of Plummer's pill as an alterative, and an injunction to take carriage exercise, as walking was, for obvious reasons, objected to; he was also put on a milk diet, all malt liquors and wines being interdicted.

The chief indications in the adoption of local means appeared to be:—1st, to remove the scales by means of emollient applications; and 2dly, to modify the diseased action set up in the sebaceous follicles by suitable appli-

cations. Emollient bread and water poultices were accordingly ordered to be applied day and night, as completely as possible over the whole of the affected parts, in order to separate the scales. The action of the poultices was further directed to be increased by the occasional employment of emollient fomentations.

On the 5th (three days after the adoption of these measures), the nose and upper lip were pretty well cleared of their crusts, as was also the nasal portion of both cheeks. The skin in these parts appeared red, somewhat glazed, and very thin. On examining it carefully the orifices of the sebaceous follicles could be observed to be enlarged, and the secretion from these soon covered the denuded part, when the poultice was taken off, and would, if it had been allowed to concrete, have given rise to a fresh layer of crusts. For the fulfilment of the second indications, that of modifying the diseased action of the sebaceous follicles, I determined to try a solution of the Sulphuret of Potass; as I had found that salt of more general use in the local treatment of cutaneous affections, when a mild stimulant was required, than any other application. A lotion, containing a drachm of the salt to six ounces of water, was accordingly ordered to be applied three or four times a day to the parts from which the crusts had been separated, poultices being continued only at night. These means were persevered in until the 12th, when nearly the whole of the incrustations having been cleared off, and the skin appearing more healthy, being less red, the strength of the lotion was increased to ʒij. of the Sulphuret to ʒviij. of water. The poultices were ordered to be continued at night, with occasional fomentations during the day. These means proved so successful, that on the 27th Mr. M. was enabled to leave town for Cheltenham, where his friends resided, with no appearance of disease about the face except a slight redness of the nose and cheeks, which was daily lessening, and for which he was directed to continue the sulphureous lotions, the poultices having been discontinued for some time past. Two or three weeks after this he had a slight return of his complaint, which was effectually and speedily combated by the same means that had cured him

before. From this time, now nearly four years, he has continued perfectly free from the disease, with the exception of a small patch that made its appearance in the fore part of the chest in August 1842, and which was soon remedied by the means that had proved effectual in curing his face.

The case just detailed is interesting for two reasons. First, on account of the somewhat rare occurrence of the disease in question; and secondly, on account of the success of the therapeutic measures employed. Bateman, who mistook the nature of the affection, classing it in the order Squamæ, as a local variety of ichthyosis simplex, mentions one case as occurring in a young lady; and Dr. A. T. Thomson, in a note appended to his edition of Bateman's Works, relates another, which was cured by the Decoction of the Rumex Acutus continued for some months, and followed by the application of a cantharides plaster, so as to blister the face, and thereby set up a new action in the diseased skin. Rayer was the first to point out the true nature of this disease, which he showed to be essentially an increased secretion of a morbid sebaceous matter; and he relates several cases in which the face and part of the trunk of the body were attacked by it. He recommends the vapour-baths as the most effectual means of removing the sebaceous incrustation, and of bringing back the skin to a healthy condition; but states that the disease is in every case, even when treated with the greatest care, most obstinate, lasting for a very long time, for months, and even years.

The therapeutic measures that were adopted in the case that has just been detailed were exceedingly simple and perfectly rational. As there appeared to be no disturbance of the general health, with the exception of such slight dyspeptic symptoms as might be accounted for by the confined life the patient had been obliged to lead for some time past, he was ordered to take mild aperient and alterative medicines, to have recourse to regular exercise, and to confine himself to as bland and unstimulating a diet as possible; a most important point to be attended to in many cutaneous affections. At the same time poultices and emollient fomentations were constantly applied, for the double purpose of separating

the incrustations, and of subduing any irritation that might exist about that portion of skin that was the immediate seat of the disease. The face, then, having been prepared for the application of some active topical remedies by the removal of the crusts and of what little irritation existed, I determined to have recourse to a mild stimulant, as the sebaceous glands appeared to be in a passive rather than in an active state of hypersecretion, their orifices being dilated, and the sebaceous matter exuding in increased quantity with but little if any appearance of inflammatory action. For this purpose the Sulphuret of Potass was employed, as being a stimulant that I have found more generally useful than any other in cases of chronic passive inflammation of the skin, and which, in this instance, perfectly effected the purpose for which it was employed, the disease yielding entirely in but little more than three weeks from the time of its first application.

The diagnosis of this ceruminous secretion of the sebaceous follicles of the face is readily effected; there being no disease of this region with which it can be confounded, except chronic eczema and impetigo, and from these affections even the distinction is easily made. The vesicular element, and thin peeling scaly incrustations, bedewed with more or less serous moisture, of the first, and the pustular element, with thick, rugged, irregular rich-looking scales of the second, being readily distinguished from the chequered or diamond-shaped waxy incrustations, which, when removed, show the dilated orifices of the sebaceous glands, of the disease now under consideration. From ichthyosis, true fish-skin disease, the diagnosis will also present but few difficulties; the rugged dark-brown or slate-coloured papillated appearance, with the hypertrophied condition of the skin in this affection, being sufficiently marked to prevent its being confounded with the waxy yellowish-brown or gray incrustations, dilated sebaceous orifices, and reddened cutis, of the other disease. Indeed true ichthyosis of the face only is an exceedingly rare complaint, being scarcely noticed by authors. A case, however, was some time since mentioned to me, in which an isolated patch of the disease of the true shagreen

character, and about the size of a half-crown piece, existed on the forehead of a gentleman, by whom it was attributed to the pressure of the hat. In this case, the body was perfectly free from any appearance of ichthyosis, the affection being limited to the forehead. It is questionable, however, whether the affection might not have been an exudation of sebaceous matter, simulating ichthyosis, rather than the true fish-skin disease.

ON THE
THERAPEUTICAL PROPERTIES OF
ERGOTIN, CHIEFLY IN CASES OF
UTERINE HÆMORRHAGE.

By DR. EEBERS, OF BRESLAW.*

PART I.

PREVIOUSLY to entering upon the immediate subject of his essay, Dr. Ebers briefly passes in review several of the most interesting points connected with the peculiarities and medicinal properties of the ergot of rye; he discusses the various opinions which have from time to time been entertained respecting the true nature of the diseased action by which the healthy grain of rye becomes so strangely altered from its natural condition, alludes to the uncertainty with which the ergot in the forms of administration hitherto employed has acted as a remedy in disease, being at one time perfectly inefficacious, at another producing violent, even dangerous effects; also to the unsettled question respecting the mode in which this drug acts: among the several forms of disease in which this remedy has been recommended and employed with advantage, he mentions the beneficial results which MM. Trousseau and Maisonneau have obtained from the use of it in cases of uterine hæmorrhage in the unimpregnated as well as in the impregnated state, observing that his own experience has led him entirely to confirm their observations: he mentions also the fact that hitherto this remedy has seldom been employed in any other form than in that of powder or infusion; and then he proceeds to describe the method of obtaining ergotine as recommended by Dumas,†

the particulars of which process are briefly as follows:—A cold aqueous solution of the powdered ergot is to be obtained, and then heated in a sand bath; by the action of heat a slight coagulation may or may not take place in this solution, owing to the presence of a certain quantity of albumen; in the former case the coagulum is to be separated by means of a filter, and the filtered liquid then to be evaporated in a sand-bath to the consistence of a clear syrup: to this is to be added a considerable excess of alcohol, by which all the mucilaginous principles will be precipitated: after the liquid has stood a short time, so that the precipitate may all subside and the liquid regain its transparency, it is decanted off and reduced in a sand-bath to the consistence of a soft extract; should no coagulation of albumen take place, the solution is to be reduced at once to a half syrupy state, then treated with alcohol, decanted, and evaporated as before. By the above process a soft reddish-brown homogeneous extract is obtained, having an agreeable roast-meat odour (*Bratengeruch*) due to the presence of a little osmazone, and a slightly pungent and bitter taste, somewhat resembling that of spoiled grain. This extract forms with water a reddish-coloured limpid transparent solution; 500 grammes of secale furnish from 70 to 80 grammes of the extract. To the substance so obtained, the French chemists give the name of ergotine, or the “*extrait hémostatique*” of secale. This extract may be given in doses of from two to three grains every second hour. Dr. Ebers then continues:—

I have proved the efficacy of this extract in numerous cases, and I would remark in the first place, that I have used it, and always with the most perfect success, in those forms of uterine hæmorrhage which are attendant upon carcinoma of the uterus, and which so greatly exhaust the strength of these unfortunate patients, and so rapidly lead to their death. It is well known, that all the styptic remedies hitherto recommended in hæmorrhages of this kind either possess very little efficacy, or else they annoy the patients in various ways, and even render their condition worse than it was before: this is the case with mineral acids, opium, and especially the pre-

* Translated for the MEDICAL GAZETTE, from Casper's *Wochenschrift*, 1845.

† *Gazette Médicale*, 31 juillet, 1843.

parations of iron; well known to us, also, is the inefficacy of all external styptics, which, moreover, are often quite inapplicable in cases of medullary and fungoid diseases of the uterus, in which they greatly increase the sufferings of the patient. Amidst the train of evils to which all who are afflicted with any form of cancerous disease of the uterus are continually subjected, the exhaustion of strength, the impairment of the whole process of nutrition, the disorder of the system generally through sympathy with the organs implicated and undergoing destruction by the gradual progress of the malignant disease, it is gratifying to know that there does exist a remedy, which, without in the least disturbing the digestive organs, or producing any other prejudicial effect, is capable of removing with perfect certainty one of the most distressing and exhausting of such evils, namely, the hæmorrhage which is so frequent an attendant: this valuable remedy is to be found in ergotin, prepared according to the above described method.

Inasmuch as none but curable patients are admitted into the hospital of the Charitable Fraternity of this city, the All Saints' Hospital is obliged to receive into its wards all cases, even the most incurable; consequently it has almost constantly under care a large number of women affected with malignant and other diseases of the uterus, especially with medullary and fungoid affections. Among the very critical and distressing events to which these unfortunate patients are constantly subjected, a very common one is hæmorrhage, which frequently terminates in their death, always in great exhaustion of their strength. Latterly I have treated these hæmorrhages exclusively with ergotin; and in order to satisfy myself of the efficacy of this remedy I have only given it in doses of two grains every two hours. In almost all the cases twelve doses were sufficient to arrest the hæmorrhage; only for a time, to be sure, yet for a period of several days, even weeks, and then the progressing destruction of the uterus has (so far as my experience goes) entirely precluded the possibility of any remedy succeeding in checking it.

A second series of observations which I have made for the purpose of trying

the efficacy of ergotin is in cases of atonic uterine hæmorrhage occurring at different periods of life, both in youth, and especially at the critical period of later years, in which females are so frequently threatened with affections of the uterus, particularly those of an organic nature. Of the uterine hæmorrhages which occur in the earlier periods of life, the following two cases, among many others, have afforded me good opportunities of observing the effects of ergotin.

A middle-aged woman, addicted to drink, and belonging to the very lowest class of society, was admitted into the hospital on account of most profuse uterine hæmorrhage. She was apparently of strong constitution, but, at the time of admission, was so much enfeebled by continued loss of blood that she was not able to leave her bed. What was the cause of this attack of hæmorrhage, whether the consequences of abortion, or the effects of medicines taken for the purpose of procuring abortion, or the results of an abandoned mode of living, could not be ascertained: no organic disease was found to have taken place in the uterus: that the hæmorrhage was not of an active, but of a passive kind, with an enfeebled condition of the vessels, seemed to be proved by the woman's general condition. As soon as she was somewhat recovered from her exhaustion by adequate treatment, two grains of ergotin were administered every second hour. She took twenty-four doses within six days, at the end of which time she was perfectly recovered. About a month afterwards, she was again attacked with hæmorrhage, and applied for relief at the hospital, but on this occasion it appeared that the hæmorrhagic discharge was simply catamenial, and was the commencement of a regular menstrual period; it passed off unmolested, not requiring any treatment.

About the same time, another patient, Johanna S., was admitted into the hospital, labouring under a profuse uterine hæmorrhage. From what could be ascertained, it seemed more than probable that, about ten days previously, this patient had suffered abortion whilst in the earlier months of pregnancy, and that, upon returning to her avocations immediately after, she had become attacked with a violent uterine hæmorrhage, which, in a few days, so greatly

reduced her strength, that, although a woman of very robust health, yet, when admitted into the hospital, she was in a state of the most complete exhaustion. The hæmorrhage was continuing very profusely at the time of her admission. In order now to obtain a clear and decided result as to the efficacy of ergotin, no remedial measures beyond simple rest were resorted to, and three grains of the ergotin were at once administered, and repeated every second hour. She had not taken twelve doses before the hæmorrhage abated, and by the time she had taken sixteen it entirely ceased. She seemed after this to recover her strength very rapidly, and on the ninth day from her admission became desirous to leave the hospital; but her wish was not complied with: in fact, her strength was considerably more reduced than she had imagined, but by rest and nutritious diet it was speedily restored.

A third case which I had under my observation was that of a servant girl, of a strong constitution, who, without any obvious cause, lost a large quantity of blood during a menstrual period, whereby she was reduced from a state of robust health to that of complete exhaustion, rendering it necessary for her to give up her situation. A dozen two-grain doses of ergotin entirely restored this patient to health.

It is stated that the infusion and decoction of secale have been already used with advantage, and strongly recommended, by Olivier, Prescott, and others, in cases of this description; I have myself repeatedly made use of these forms of administration, but I have never until lately observed such decided and certain effects of this remedy.

[To be continued.]

USE OF THE BLOWPIPE IN CHEMICAL ANALYSIS: COLOURS GIVEN TO FLAME.

THE colours given by different substances to a jet of flame under the blowpipe are sometimes characteristic of their nature. As it is almost always in the *blue* flame that these colours are manifested, it is necessary that this should be distinct and well defined. This is managed by cutting the wick of the lamp obliquely, the most elevated point being to the right, and by opening the wick longitudinally, in order to introduce into it the point of the blowpipe.

This wick should be of unbleached cotton,

because when bleached by chloride of lime, traces of that salt are likely to remain, and give a reddish-yellow tint to the flame. By practice, a well-marked and defined conical blue flame may be maintained uniformly for some time. This is necessary for the distinction of the colours. When the blue cone is well formed, the substance, which is small and angular, is introduced from above downwards, before the point of the cone. The blue vapour is immediately replaced by various colours, which, after a time disappear, and leave the blue flame in its original state.

Some substances give a colour without passing from the solid state, but in general the colour is much more intense when the substance melts.

Red. According to Buzingeiger, there are only three substances at present known which give a *red* colour. These are, strontian, lime, and lithia, the colour being more or less of a deep carmine red. The admixture of barytes causes the reaction from strontian to disappear. Fluor spar gives an intense red, sulphate of lime very faint, phosphate and borate of lime none at all. Any substance containing much lithia gives a deep-red purple colour, very intense, but this soon disappears.

Blue. The outer flame is coloured of a deep blue by *arsenic*, of a somewhat deeper blue by *antimony*, and of a sky-blue by *lead*. With *antimonial galena*, the blue is at first deep, and afterwards becomes of a sky-blue.

Green. There are only three substances at present known which give a *green* colour to flame—boracic acid, barytes, and oxide of copper. Boracic acid, natural and artificial, gives a rich green. In borate of lime, and other compounds, the green is less distinct. Borax gives a strong reddish halo, and the green colour is not brought out until it has been first moistened with sulphuric acid.

According to M. Fuchs, when a solid phosphate, previously moistened with sulphuric acid, is heated in the flame, it gives a green tint, like boracic acid.

All minerals containing barytes give a deep green, bordering on blue (yellow?). The colour is only produced when the substance begins to melt, but it afterwards becomes more and more beautiful, and lasts longer.

All minerals which contain copper, even in very minute quantity, give to the point of the blue jet, a rich green colour. The minerals of lead which contain traces of copper, produce a rich blue flame, with a green extremity. The copper minerals cease to give this colour when mixed with a salt of phosphorus, unless they contain chlorine, bromine, or iodine.—*Berthier, Traité des Essais par la Voie Sèche*, i. 200.

Name of Patient.	Age.	Sex.	Amount of exercise taken.	Pulse.	Disease.	Temperature of the		
						Mouth.	Hand.	Atmosphere.
						Fah.	Fah.	Fah.

71. A. H.	39	F.	None	96	Debilitas; Prolapsus Uteri.	99°.	82°.	58°.
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Nine weeks only have elapsed since her confinement. She has had milk abscess, now healed; lactation proceeds in left breast; prolapsus uteri followed her first labour, 14 years ago; has had a discharge of thick yellow matter since her last confinement; three days ago began to lose a little blood per vaginam on straining at stool; no coagula; womb descends on exertion. Has had nine children, and three miscarriages besides; has coughed during the last fortnight; night sweats; sense of sinking at the præcordia, with feeling of faintness; urine generally deposits the lithates.

80. C. W.	27	F.	None	76	Chlorosis.	99°.	88.5	59°.
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Chlorotic aspect; nausea; constipation; bruit de diable; dizziness; debility great; dyspnœa; nervous tremor and excitability; swelled ankles.

81. W. F.	12	M.	None	88	Convulsions.	96°.	80°.	58°.
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Every five minutes this lad has a convulsion, consisting of panting of the breath and tossing of the arms; it continues two or three seconds; the fits accompany insensibility, and are followed by coldness of the surface. He has thus been afflicted for nine years, the frequency of the paroxysms increasing; respiration bronchial.

82. A. B.	12	M.	None	72	Phthisis.	98°.	75°.	58°.
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Apnoea and dull percussion—sound of the left lung; ascarides; pain in the belly and at the pubis before passing the evacuations; dysuria; leucophlegmatic aspect.

83. S. P.	15	F.	None	120	Amenorrhœa; Albuminuria.	99°.	81°.	71°.
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The case commenced with hæmaturia, which gave way to purging and muriated tinct. of iron. The urine is rendered turbid by nitric acid and heat; is acid, and has a sp. gr. of 1017. Face, breast, and extremities swollen.

84. M. C.	56	F.	None	108	Varix—Eczema.	98.3	85°.	71°.
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The legs are swelled and painful, without much œdema; the veins are varicose; eczema covers the right lower extremity. The hepatic secretions are scanty; the urinary turbid with lithates; there are creeping chills and flushes; frontal cephalœa; dyspnœa, and slight bronchial crepitus. The state of the legs followed typhus twenty years ago. The patient ceased to menstruate three years ago; she has borne children.

85. E. S.	23	F.	None	108	Phthisis	98°.	76°.	71°.
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Dull percussion sound over both sides of thorax, with bronchial respiration. Slight cough. Palpitation, with a bruit accompanying first sound. Has been the subject of acute rheumatism. Hands and feet always cold. Constipation. Urine turbid with lithates. Emaciation.

86. S. A.	19	F.	2 miles	88	Chlorosis	99°.	78.5	68°.
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Sensation of dizziness; pain encircling the orbits and occupying the eyes. Frontal cephalœa. Appetite perverted; costiveness; pale urine; night sweats; bruit de diable.*

[To be continued.]

HEALTH OF WORKMEN IN TOBACCO MANUFACTORIES.

It would appear from a Report recently presented to the Royal Academy of Medicine at Paris, on the state of health of workmen employed in the large tobacco manufactories in France, that the influence of tobacco on the system, instead of being injurious, seems to act rather as a preservative against the effects of certain diseases

prevalent in the country, such as dysentery, typhus, and other fevers; and it would further appear that, on those individuals who are threatened with phthisical disease of the lungs, the living in tobacco manufactories exerts a salutary influence, and seems to preserve them from being attacked by this disease: in some cases, even, it seemed to effect a cure in those already affected.—*Bulletin de l'Acad. Roy.*, No. 14, 1845.

[We have been compelled to divide the paper forwarded to us by our correspondent. The remaining portion will speedily appear.—*Ed. Gaz.*]

ON THE
SOURCES OF BLEEDING IN PLACENTA PRÆVIA.

By THOMAS RADFORD, M.D.
Consulting-Physician to the Manchester Lying-in
Hospital.

THE hæmorrhage which occurs in cases of placenta prævia is caused by the expansatory or dilatory changes of the os and cervix uteri, which take place in the latter months of pregnancy or beginning of labour, which thereby separate the placenta to a greater or less extent from its uterine connection. By this event two sources are produced from which the blood issues in these cases.

"The uterine sinuses are observable throughout the entire structure of the uterus, but are more developed in the vicinity of the placenta, and are much more numerous on the inner edge of its parietes than on the outer." * * * When the placenta is separated from the uterus, and the decidual efflorescence removed, a number of openings are discovered, through which, if a probe be introduced, it will pass into the uterine sinuses. These apertures are covered over by the decidual membrane, which acts as a protector against the risk of bleeding." (Radford on the Structure of the Human Placenta, 1832.) It therefore follows, that if the placenta, with its decidual covering, is separated from the uterus so as to expose the openings, bleeding must take place. The second source from whence the blood proceeds in these cases is from the decidual surface of the placenta. So long as the placenta is alone separated, and its organization remains perfect, bleeding takes place from one or both of the seats before mentioned. But, after labour has existed some time, the placenta becomes not only further separated, but its structure is disrupted, and its texture broken up, so that another source of bleeding is now created. Under the last-mentioned circumstances, the child is usually born dead, as the blood now proceeds directly from its own circulatory system. The disruption of the placenta is produced by the head of the child forced down by the uterus upon this organ, so as to act upon it mechanically by forcing it against, and partially through, the os uteri. The same breach of structure in the placenta is often produced by rude examination.

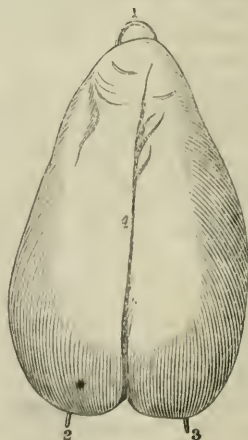
In the Essay already quoted, I was led to draw, from a number of collected facts, the following inference:—"That the child continues to live in cases in which the placenta is completely detached from the uterus, and excluded from its cavity, provided its organization is not broken up*.

Oct. 29, 1845.

CASE OF A LARGE CALCULUS,
VOIDED FROM THE FEMALE URETHRA ENCRUSTED UPON A HAIR-PIN, WHICH HAD BEEN SWALLOWED TWENTY-SEVEN MONTHS AGO.

By THOMAS F. BROWNELL,
Surgeon to the Salford Workhouse.

MARGARET LEIGH, aged 26 years, was admitted into the Salford Workhouse, on the 12th of August, 1845, in the last month of her pregnancy of an illegitimate child. For several weeks she suffered from pain in the sides and back. From Sept. 10th to 14th she complained of constant pain in the urethra, difficult micturition, a feeling of tension and bearing down as from the passage of a hard body of considerable size. On the 14th, after much painful straining and bearing down when voiding her urine, she parted with a calculus, without any manual interference, of which the accompanying sketch is an exact representation.



1. Head of the Pin.
- 2, 3. Points of the Pin.
4. A Groove down the centre of the Calculus.

* [We regret that we could not find room for this communication last week.—ED. GAZ.]

Its weight is 5iv. ʒij. and gr. iv.; its length, 2½ inches; breadth, 1½ in.; and thickness, $\frac{5}{8}$ of an inch. It is of a flattened oblong figure. Its nucleus is a common hair-pin, the points of which, as well as the convex extremity, are equally evident to the sight. Its probable composition consists of phosphate of lime and the triple phosphate of magnesia and ammonia. She has had no pain since parting with the above, expresses herself greatly relieved, and is as well as women usually are towards the close of gestation. On the 21st (one week after) she gave birth to a full grown child, after an easy natural labour, from which she quickly recovered. The woman is still in the Workhouse, and the specimen is in my possession. Upon tracing the history of this case, I find from the evidence of three persons then present, that the pin was really swallowed on June 6th, 1843. The woman was straightening her hair with the hair-pin between her teeth, when one of her companions pulled her hair behind, causing her to laugh, and throw her head back, when the pin slipped down the œsophagus. During the first twelve months she felt little inconvenience, with the exception of slight pain in the bowels, attended with constipation. On the 26th April, 1845, she was admitted as home-patient of the Charlton Dispensary, under the care of the house-surgeon. She remained under this Institution five weeks, during which time she complained of continued acute pain in the left inguinal region, of incontinence and increased flow of urine, a profuse purulent discharge from the urethra, scalding and obstinate constipation, attended with frequent discharges of blood with the fæces. At the recommendation of the house-surgeon, as her case was considered more proper for the Manchester Infirmary, she gained admission into that Institution. There she remained two months, suffering from the same symptoms, only the urine was much increased in quantity, but gave no evidence, upon being tested, of saccharine matter. She frequently parted with six quarts of urine during the night, and generally seven quarts in the twenty-four hours; complained of pricking pain in the left groin, increased on bending the body forward and on sitting down, but never perfectly free from it excepting when

in the recumbent position. She was much relieved while under the Infirmary, but as her confinement was evidently near approaching, was obliged to leave and gain admission into the Salford Workhouse to lie in. I must here remark that this patient never once mentioned to any of her medical advisers the circumstance of having swallowed the hair-pin, lest (according to her statement) she should be compelled to undergo an operation for its removal. As she was pregnant and unmarried, I at once suspected she might have introduced the pin into the vagina for the purpose of procuring abortion; but from the nature of the evidence I have since been put in possession of, I am now fully convinced of the contrary. Being interested in her case, I referred to the medical gentlemen who had the treatment of her, and from them have gleaned the above statements. Since her confinement I have made an examination per vaginam, but without discovering any alteration of structure that would indicate its course into the bladder. She still complains of pain upon pressure at the lower and left side of the abdomen and groin. From the symptoms above related, I think it most probable that the pin passed from the sigmoid flexure of the colon into the left side of the bladder.

TREATMENT OF TETANUS BY TOBACCO ENEMATA.

PROFESSOR COLLES remarked in his lectures, "some cases (of tetanus) have occurred in this city said to have been cured by tobacco. I have not had myself, however, experience in this method sufficient to enable me to speak decidedly of its utility, but it is certainly one that merits attention." The editor of the lectures, Mr. M'Coy, states, that he "saw two of the cases alluded to above, while he was a pupil in Jervis-Street Hospital." They were the patients of Dr. O'Beirne, and one of them, at least, was seen by many of the first surgeons in Dublin. The treatment was simply an enema of the infusion of tobacco, thrown up two or more times each day, according to the effect produced on the system, and both recovered. It is to be regretted that Dr. O'Beirne has not published the result of his experience of tobacco as a remedy for this formidable disease; Mr. M'Coy, has recently learned from him, that he has lately had some other successful cases.

MEDICAL GAZETTE.

FRIDAY, NOVEMBER 14, 1844.

OUR readers must, we think, have been somewhat wearied with the discussions which took place during the Medical-Reform-Bill-fever relative to the suppression of quackery by penal restrictions. It happens, unfortunately for the settlement of this question, that the views entertained by professional men on this subject, are of the most discordant character. One party requires that quacks should be treated as felons, or misdemeanants at the least, and punished by the rules of Turkish justice; another strangely argues, that, by a kind of compensation, they create, by their malpractices, additional work for medical men—in short, that they are a beneficial nuisance; a third coolly adopts the maxim, that the suppression of quackery can be accomplished by no legislation, therefore it should not be attempted! This last-mentioned view is supposed to be strengthened by the assertion, that each person has a right to consult whom he pleases, quack or no quack, about his own complaints; further, that a quack cannot be defined or distinguished from a regular practitioner—that there is a vast deal of esoteric quackery in the profession: hence it is only fair to tolerate it in an exoteric form. It would be a good week's work to unravel the arguments by which these conflicting opinions are supported—to show in what respects they agree with, and in what they are opposed to, each other; but, on the whole, the conclusions forcibly remind us of the sage inference drawn by an acute reasoner respecting the religious opinions of one of his acquaintance, *i. e.* that he was both an Atheist and a

Deist! Owing to this divisor of opinion among medical men, we cannot say we feel much surprised that the Home Minister should have left the subject so unsettled as it is, in the last edition of the *Physic and Surgery Bill*. It is, we think, obvious that any attempt to suppress quackery, must rest more upon a penalty on individuals practising without a proper qualification, than on the mere assumption of a *title*. The 33d clause of the Bill does not go beyond the prohibition of the assumption of a title, a result which is tantamount to no legislation; for it attacks the shadow, and not the substance, of what all admit to be an evil.

We cannot agree with those who think that the State has not a right to interfere in such matters. Men live in society for the promotion of general good; not for the indulgence of their own whims and caprices. Unless this principle be denied, we must admit it as an axiom, that the State has the power to curtail or modify the abstract rights of its individual members, whenever the exercise of this power may tend to the good of the community. We have never yet met with any professional man who was prepared to contend that quackery was beneficial to the *public*: this part of the argument, therefore, requires no consideration: but we must confess our surprise, that invested as we are with a panoply of legislation in the shape of excise-laws against smuggling, game-laws against poaching, or, to come to a still closer analogy, of pilotage-laws against the navigation of merchant vessels by incompetent individuals,—any reasonable person should imagine that he was employing an argument against the suppression of quackery by law, in asserting that an individual has a right to do as he pleases with what concerns his own wishes and inclinations; or, that the true test for legislation, is

whether an offence can or cannot be *put down* by the statute enacted against it! If there be any truth in this theory, why not at once repeal the laws against smuggling and poaching? Experience has clearly shown that it is not possible to *put down* these offences by act of Parliament. No legislation can accomplish this; *ergo*, according to this class of reasoners, who we suspect are the least likely to be injured by the practices of quacks, the attempt should not be made! A minister who might consider this a very beautiful theory, would decidedly object to its being carried out in practice; because certain results, rather disadvantageous to the national revenue, might follow. This kind of reasoning obviously proceeds upon a series of inadmissible assumptions founded on a narrow view of the subject. It is not true that a man living in a state of society has a right to do just as he pleases in matters which concern himself, if the gratification of his selfish views involve injury to the general good; and further, it is not true that legislation is limited to the prohibition of those offences only, which the law can effectually suppress or put down; or the whole of our folio statute-books might be condensed into a small duodecimo. As addressed to the public, it is an *argumentum ad ignorantiam* to maintain that because there is quackery in the profession, it should therefore be tolerated out of it; it would be only fair to say at once that the existence of a lesser, justifies the toleration of a greater evil. Are the members of the Clerical and Legal professions absolutely pure, and without stain in doctrine and conduct? Yet the law extends to them such an amount of protection, that it will not recognise the baptism of a child, or the defence of a civil suit, except at the hands of a properly qualified person; and it ap-

pears so to control the abstract rights of an individual, that he is not allowed to make a clergyman or a barrister, *pen hâc vice*, of his next-door-neighbour. What it does for these two professions, it is only fair that it should attempt for the benefit of the medical profession. The senseless cry of—"it cannot be done," has always been opposed to the suppression of any long continued evil; but the time has passed in which such a cry can be substituted for close reasoning.

We are glad that on this subject our views are supported by one whose opinions must be received by the profession with respect. Professor Royle, with a proper degree of liberal feeling, argues for the benefit which must accrue to society as well as to the profession, by some legislative attempt to suppress quackery.

"But having submitted to a laborious and expensive education, and proved themselves qualified for practice, by passing through the prescribed course and examinations, justice, both to the public and to the profession, requires, that those who have so proved themselves, should be protected in the exercise of that profession. Protected from the ruthless interference of those, who, unwilling to undergo the labour, and too ignorant to pass the required examinations, yet presume to practise, what they have shown themselves incompetent to study. Ignorance is always ready to enter upon a course from which even a little knowledge would shrink.

"Any increase of facility for entering a profession like Medicine, would be lamentably detrimental, not more to the members of that profession, than to the public generally, who would rapidly suffer from the number of incompetent persons who would immediately, and without study, enter upon what, to them, would appear a lucrative profession. *The education of the public has been far too much neglected, for them to judge correctly between those who know, and those who only pretend to knowledge of a profession based on physical science.*

"There is nothing unusual, nor unreasonable, in those who have not proved their incompetency in the first instance, not being admitted to practise a profession upon which the lives of the community depend. We find the principle carried out in the case of pilots, and of officers of the navy; also in the scientific branches of the army; and even where only property is concerned, as in members of the legal profession. When the Government is interested in the revenue, we find that even the venders of exciseable articles must be licensed. Any laxity in admission of any of the above classes, would be immediately followed by injuries of so palpable a nature, as would call loudly for redress. In the Medical Profession, though less obvious, from the obscurity of causes, the injury would not only be fatal, but would go on increasing^{*}."

There can be no doubt that if the Government would condescend to view the subject in the light of a fiscal question, as if it related to the suppression of smuggling, means would be soon found to check, if not to suppress, an admitted evil. All difficulties would then disappear; a quack would be defined as easily as a smuggler; quackery itself would admit of perhaps a more simple definition than forgery, which (judging by the sixty statutes now in force from the time of Henry VII. downwards), has puzzled our legislators for the last four hundred years;—and instead of the law imposing a penalty on the prosecutor by compelling him to institute a most expensive civil action for the chance of inflicting a paltry fine, it would be seen with what astonishing facility the offence of quackery might be punished by summary conviction before two magistrates—like smuggling, poaching, or an infraction of the pilotage laws†. It has

been objected, that many of the poor pretenders in physic could not pay a penalty. We confess that this is an apparent difficulty; but then we have a sort of answer to it in the fact that the excise laws sometimes allow of the imposition of a penalty of a hundred pounds upon an offender who has not as many farthings! In this case, it is true, the offence involves fiscal damage; but we cannot perceive how this sustains the objection, even admitting that it were necessary to render the penalties for unlicensed medical practice so severe as the law in its wisdom has made them against smuggling*. The truth must be plainly told:—the evils of quackery do not reach the revenue —(in some respects, as in medicine-stamps, they directly benefit it)—they are spread over the poorer class of so-

each case: the penalty to the defendant when convicted £20! To estimate the value of this so-called *penal* enactment, let us imagine that the only way in which a smuggler or an unlicensed pilot could be punished for a breach of the law, would be by a fine of twenty pounds, recoverable by the Excise or Trinity Board "as an action of debt in any of her Majesty's Courts of Record at Westminster." To what extent would such a provision operate to repress smuggling and unlicensed pilotage, if each suit should cost the prosecutors £320? Yet, as if some special favour were granted, the Home Minister stated, on the introduction of the fourth Medical Bill, that he had come to the conclusion to leave the power of prosecuting unregistered practitioners in the hands of the Apothecaries' Society! The 31st clause in its present shape is a nullity. It inflicts a heavier fine on the prosecutors than on the defendants!

* It has been said that quackery would still be carried on in secret. Undoubtedly, and so is every other offence, prohibited by statute, to the commission of which there happens to be a strong temptation. Smuggling and poaching are notoriously carried on to an enormous extent in secret; but this does not prevent the law from punishing them as serious offences when detected. It would, indeed, be a palpable absurdity to argue, that penal laws should not be enacted, because an offence may be committed secretly in spite of them. We use this analogy to show not so much a parallel in the offences or the serious results to which they respectively lead, as the principles upon which legislation proceeds in other cases. There is one striking difference:—smuggling and poaching inflict damage upon property—quackery affects the lives of individuals; so that even if the laws against the former were repealed, there would still be good reason for the law to interfere in order to suppress the latter. That quackery can ever be entirely put down by legislation is no more expected by medical men, than that smuggling will be put down by the Revenue and Excise laws, is expected by the fair trader.

* Medical Education, p. 57.

† We quite agree with the statement of the Society of Apothecaries in their first letter to Sir James Graham, that—"the attempt to put down illegal practice by penal enactments has never yet been fairly made." The average expense of six actions to the Society, amounted to £320 in

ciety, at one time rising to view in the shape of a coroner's inquest; at another, in the form of a criminal trial for manslaughter; and at all times inflicting an injury upon those who, by "a laborious and expensive education, have proved themselves qualified to practise." The wonder is, not so much that the Legislature should not make at least an attempt to suppress it, but that we should find in the profession, men who actually encourage this inaction by plausible appeals, founded on an entire ignorance of the rights of persons in a social state, and of the principles upon which sound legislation is based.

Reviews.

A Glance at Hahnemann and Homœopathy. By ERNEST VON BRUNNOW, Author of the First French Translation of Hahnemann's Organon of the Healing Art. Translated from the German, by J. NORTON, M.D. pp. 39. London: Simpkin, Marshall, and Co. 1845.

WE apprehend that a considerable proportion of authors and translators submit the results of their labours to the test of criticism with the intention of eliciting opinions of two kinds from the reviewers—decisions upon the character of the literary productions, and hints upon the capacities of the aspirants for fame themselves, as evidenced by the works under consideration. We shall immediately set Dr. Norton's mind at rest with regard to our opinion of the mental calibre of the translator of "*A Glance at Hahnemann and Homœopathy*," and then proceed leisurely to make comments upon the pamphlet with which he has presented us.

We conceive, then, that Dr. Norton shows a want both of judgment and of common courtesy to the profession, of which, we apprehend, he styles himself a member, in inditing such a tirade as the preface which he has prefixed to his translation for the purpose of rendering it acceptable to the public:—and it appears to us that he has acted

rashly and unwisely in submitting such a specimen of unprofessional argument to the criticism of a medical reviewer. We have long been aware of the immense power arrogated by the sovereign public whom, as medical men, we are bound to serve; and are, of course, acutely conscious of the somewhat imperious and very capricious manner in which that many-headed potentate often insists upon being doctored according to the plans which are decided to be popular for the time being;—but we learn for the first time from Dr. Norton's preface, that the public have the power to "*force upon the profession at large the consideration*" of subjects which the members of that profession generally consider to be unprofitable and unworthy of the sacrifice of their time and labour! We must, however, give Dr. Norton's opinions upon this subject in his own words:—

"In the case of homœopathy, it is public opinion that must force the consideration of the subject on the profession at large. It will not do for a medical man to profess ignorance of a doctrine of medicine (!) or of its practical import, when the knowledge of it comes to be generally diffused: and in proportion to the exactness of the knowledge the public may have, will be the difficulty of the professional man in resisting that personal investigation, by actual experiment, which may lead to his own conviction."

We are surprised that the writer's "*rerum cognitio et comprehensio*" have not been sufficient to teach him that such trash as this will not tend to recommend homœopathy or its advocates to the profession; and that "the practitioners of the old school," as he terms the present race of medical men, will not permit themselves to be either threatened or cajoled into laborious investigations of popular fallacies. We take leave of Dr. Norton with a full conviction that the fundamental doctrines of medicine, as at present taught in our schools, are in no danger of being subverted either by the weight or the force of that gentleman's arguments.

Ernest von Brunnow's short biography of Hahnemann is, in itself, an interesting and rather elegantly written production; and it is evidently the work of a man whose acuteness and power of mind originally fitted him for higher duties than those which appear to have hitherto occupied his time,—

of giving to the world laborious translations of the works of a mistaken theorist. We admire the spirit in which the sketch is written;—the tone of respectful and deep conviction, and rational moderation, with which the scholarly disciple attempts to hand down to fame the character of his friend and teacher, does honour to his feelings; and the ingenuity with which he argues the homœopathic theory causes a regret that his talents have not been exercised in pursuits where good to others and credit to himself might have rewarded his labours.

A Treatise on the Diseases and Special Hygiène of Females.—By COLOMBAT DE L'ISÈRE. Translated from the French, with additions, by CHARLES D. MEIGS, M.D. &c. Philadelphia; Lee and Blanchard. London: Wiley and Putnam. 1845. Large 8vo, pp. 719.

In the present day, when records of actual personal observation alone receive any very attentive consideration from the profession, it is rare to meet with an author who is willing to bestow so much literary research upon the formation of a system, as M. Colombat has devoted to the work before us. And thus it most frequently happens that the writings of highly practical men betray a sad deficiency in acquaintance with the recorded opinions of others, while it is as often observed that, in proportion as a treatise is found more replete with quotations, so it is less marked with the characteristics of a thoroughly practical acquaintance with the subjects of which it treats.

M. Colombat's work is certainly a most elaborate production; the author appears to possess but a moderate practical acquaintance with most of the forms of disease of which he treats, but his reading has been most extensive; and with a neat and accurate arrangement of his subjects he has succeeded in condensing an immense mass of interesting and, upon the whole, well-selected cases, in a highly systematic manner. Where so much research has been employed, it is to be regretted that the author's investigations have not been sufficiently extended to render his work complete. Had this treatise received those valuable additions which English medical literature afforded, it would have become a fitting ad-

dition to the *Epistolæ* of Morgagni: but unfortunately, in this respect, the book is extremely deficient. The author's personal authority and suggestions are chiefly valuable when directed to the surgical treatment of the various diseases and lesions of the female organs. Some of the instruments which he has invented are very ingenious; his mode of treating longitudinal fistulous openings in the vesico-vaginal septum by means of a spiral needle (p. 254), is well deserving of attention, but certain others of his mechanical contrivances are clumsy in form, and perfectly useless; as, for instance, the hideous-looking prehensile tool, figured at page 454, which by a most extraordinary stretch of parental fondness the author characterises as "commodious!"

It will be seen from the above remarks, that we do not consider M. Colombat has thrown any very large amount of personal observation into his work; indeed, we occasionally meet with sections where, although the author discusses the subjects very learnedly, and with some judgment, it appears very doubtful whether he has ever had an opportunity of making himself personally conversant with any cases of the kind.

We cannot recommend M. Colombat's portion of the treatise as a guide in the medical treatment of the diseases of females, as we very seldom find any novel light thrown upon the subjects under discussion, and as the details, while they are deficient in many important particulars, involve numerous principles in which French practice is irreconcilably opposed to our own. Still a valuable hint may be met with here and there, and the author seldom sees upon the side of rashness.

The part of the translator and commentator has been very ably performed by the American editor, Dr. Meigs, a person evidently exceedingly well calculated to give a practical value to a work of this description. In the rather copious notes which this gentleman has introduced, he does not adhere at all in a bigoted manner to the dicta of his author, often correcting or qualifying, and sometimes even protesting against and disproving his statements. Many of the deficiencies in the original work are also supplied in the notes. It is evident that the editor of the treatise is a more practical man than the

author; and we attach a very high value to many of his observations.

In its present form M. Colombat's treatise will be found exceedingly useful by writers upon the diseases of females, and by the recorders of rare cases, who feel anxious to collate other parallel instances with their own. But upon the whole, it is to be considered rather as a book of reference than as a complete and practical exposition of the present state of these branches of knowledge.

Practical Notes on Insanity. By JOHN BURDETT STEWARD, M.D. 8vo. pp. 122. Churchill: London. 1845.

WE have experienced considerable satisfaction in perusing Dr. Steward's remarks; they are characterised by good sense, decision, and benevolent feeling—by that practical kind of humanity which, instead of expending itself in flourishing expressions of philanthropy and compassion, at once effects its end by showing in what manner its objects may be substantially benefited.

The work is principally taken up with remarks upon the diagnosis of mania, and the medical and moral treatment of the insane. Dr. Steward commences by laying down the following axiom, which we believe must be admitted by every one who would hope to treat insanity in a rational manner and with success,—“That pure idiopathic mania arises from disease of the brain, cannot be sustained either by reasoning or facts.” The following are the author's opinions with regard to the prognosis in various forms of insanity.

“First, it is to be recollected, as a fact universally admitted, that the curability of insanity is in an inverse ratio to the time of its duration.

Under proper and early treatment, therefore, I submit that the following forms of insanity—*there being no organic disease*—are curable; viz:—

Cases accompanied by quickened circulation through, or congestion in, the vessels of the brain or its membranes.

Cases accompanied by derangement of the general health, or impairment of function.

Cases apparently originating in excess of any kind.

Cases accompanied by simple œdema, with general constitutional derangement.

Cases following the sudden cessation of rheumatic pains.

Cases following the suppression of any accustomed evacuation or secretion.

Cases following the sudden recession of cutaneous affections.

Also probably curable, if seen within the last three **month**s after the commencement of the attack, are—

Cases where the delusion is limited to one subject, and the mind remains sound as regards all others—*the health being disordered*.

The incurable forms of insanity—of course I refer, in all these divisions, to the majority—comprehend most cases of pure idiopathic insanity, whether the delusion be general or confined to a particular subject; for when, *as in these cases*—the heart's action is good and regular,—the appetite neither in excess nor deficient,—the excretions properly timed and healthy,—the sleep tranquil and refreshing, — neither medical nor moral agency can avail:—it is the natural character of the individual: we may keep him within bounds, but we cannot alter him.

Amongst the incurable cases, are those accompanied by organic disease of the brain.

Also cases of congenital insanity, and generally speaking of epilepsy.

For the purpose of prognosis, there is another circumstance which it is necessary to bear in mind, and that is, the proneness to relapse, in cases of insanity.

Where the predisposition exists, and an hereditary tendency can be traced, few cases continue well more than two or three years at most.

Where the attack is accompanied by impairment of function, the mind returning with the bodily restoration, the cure is generally permanent;—provided no hereditary tendency can be traced, and no natural predisposition exists.

In cases following the sudden suppression of an accustomed evacuation or secretion, whether such evacuation or secretion be natural, as that of the uterus; or preternatural, as hæmorrhoids, epistaxis, &c.; or artificial, as setons, issues, &c.; if, on the restoration of the general health, the affection of the mind vanishes, and there be no hereditary tendency, the cure is generally permanent.” (pp. 7-10.)

The remarks on the means of distinguishing real from simulated mania (contained in the chapter on Criminal Insanity), are very explicit, and deserve careful perusal. The following is one of the many evidences of good sense and right feeling that pervade the volume.

“It is not because a patient is out of temper, or because he may be a little more extravagant than usual, that we are justified in giving an emetic; on the contrary, we

ought to witness the existence of symptoms indicating its exhibition, independently of the maniacal affection;—we are bound to entertain a definite and sufficient object, in the use of this, or any other remedy, before we employ it. To do so, in all cases, is imperative; but more particularly as regards the insane; because, in proportion as the affliction of insanity deprives the individual of his independence, we are bound in every respect the more to consult his interest and happiness." (p. 55.)

Dr. Steward speaks strongly against that barbarous instrument of torture, *the swing*, once so greatly lauded in the treatment of violent maniacs; he says, "unless tried, it is quite impossible to conceive the suffering produced by it,"—he is enabled to speak very confidently, from having tested its effects upon himself. Most persons who have seen much of the insane will, however, agree with him in the conclusion, that "experience does not enable him to agree with those who maintain that restraint is *never* necessary." The remarks upon the classification of lunatics in asylums, and the concluding observations upon certain errors in the law of lunacy as at present administered, are interesting and important. By those who are constantly employed in attending upon the insane, we believe that few of the remarks contained in Dr. Steward's volume will be thought altogether new; still, to the larger proportion of medical men it will convey many judicious and instructive precepts.

PROLAPSE OF THE CORD, AND ESCAPE OF MECONIUM, WITHOUT DEATH OF THE CHILD.

DR. KISKER relates a very interesting case of labour, in which a considerable portion of the umbilical cord became prolapsed, and remained so until his arrival, which was not for an hour and a half afterwards; the woman had a narrow pelvis, and in her previous labours had always required medical assistance to be delivered. Upon his arrival, on the present occasion, Dr. Kisker found the os uteri fully dilated, the head engaged in the cavity of the pelvis, the prolapsed portion of cord no longer pulsating, and meconium escaping; this latter circumstance especially seemed to indicate the death of the child. By means of the forceps, however, he delivered the child as speedily as possible, and in spite of the above unfavourable signs he soon had the satisfaction of seeing it revive from the half dead condition in which it was when first born.—*Casper's Wochenschrift*, June 1845.

ON THE MAGNETIC AND ELECTRICAL PROPERTIES OF LIGHT.

THE four imponderables, Light, Heat, Electricity and Magnetism, are likely to be soon reduced to modifications of one great principle. The close connection existing between light and heat has been long known; the analogous powers which these agents have in effecting the decomposition and re-composition of substances has been long since established by the researches of numerous experimentalists; and we are now reaching the point at which the connection of light with electricity and magnetism, is about to complete the circle, and to reduce to fixed laws what has been hitherto only conjectural. The recent discovery of Mr. Faraday, that polarized light is deflected by magnetism, is another splendid addition to science; and one which may hereafter lead to the explanation of the important influence which light undoubtedly exercises on animal and vegetable life.

We hope hereafter to have an opportunity of referring to the novel experiments which have led to this recent discovery; but in the meantime it may be as well to state, that the researches of philosophers have been for some years directed to the influence of ordinary light in conferring magnetism upon bodies; and that, if we except some singular results obtained by Sir H. Davy, all attempts to deflect a ray of light by electric or magnetic agency have hitherto failed.

It is more than thirty years since the late Professor Morichini, of Rome, published an essay on the magnetic properties of the extreme violet ray of the spectrum*. His researches led to a theory, that magnetism, like heat, light, and electricity, was due to solar influence; and that the sun was the source of the four great imponderable fluids. Professor Barlocchi, of Rome, soon afterwards examined the subject. To him we are indebted for an interesting pamphlet, containing an early account of the experiments which he made on the magnetization of bodies by solar light. As this essay has not been translated, and is, we believe, but little known in England, we propose in this place to give a short summary of the results, obtained in 1829, by Saverio Barlocchi†. While the experiments of Morichini were directed to the variable magnetizing powers of the

* Sopra la forza magnetizante del lembo estremo del raggio violetto. Memoria del Professore Morichini. Roma, 1812.

† Sulla influenza della Luce Solare nella produzione dei fenomeni elettrici e magnetici. Memoria di Saverio Barlocchi Professore di Fisica, &c. Roma, 1829.

coloured rays of the spectrum on steel, those of Barlocci were intended to show that decomposed light has the property of increasing the attractive power both of artificial and natural magnets.

Having exposed to direct solar light a natural magnet of weak power, scarcely capable of supporting a weight of one pound six ounces, it was found to have acquired in three hours an increase of power equal to the weight of two ounces; and after 24 hours its power had become almost doubled. Another magnet of nearly equal power was at the same time exposed in a dark room, where the temperature of the surrounding air was equal to that produced by the solar rays in the first experiment; but there was found to be no perceptible increase.

A more powerful magnet was then subjected to a similar trial. This bore a weight of five pounds two ounces: it was exposed for three hours to the action of light on a *cloudy day*, and in a damp and moisty atmosphere; but it was not found to have acquired any appreciable increase of power. In the course of the two following days, when it was exposed to the direct rays of the sun, its power became doubled, but notwithstanding continued exposure, it underwent no further increase. The power thus acquired by magnets under exposure to solar light, appears to diminish in damp and cloudy weather, but to become increased when the sky is clear and the atmosphere is dry. Results precisely similar were obtained on exposing magnetized bars of iron to solar light and in darkness. These results appear to show that the increase of magnetic power under these circumstances, is really due to light, and not to heat. This solar influence on magnets had not altogether escaped the observation of the philosophers of the last century. It appears from the observations of Cassini at Paris in 1792, that the diurnal variations in the declination of the magnetic needle are less perceptible in the deep caverns of the earth than on the surface: in the latter case, the magnets being fully exposed to solar light, they occupy a long and constant period in their oscillations. The diurnal variations in the declination of the needle establish a similar influence. A delicate needle balanced on its pivot diverges during the morning hours from its meridian towards the west; and about 3 P. M. it appears to acquire its maximum diurnal declination. It then continues to recede to the meridian, until about 8 P. M., where it remains stationary during the night, being no longer under the influence of solar light; but the day following, about 8 A. M. it again begins to diverge from the meridian, going through the same period of change. These deviations vary in extent from day to day; but the maximum diurnal variations (13' to

16') are observed in the months of April, May, June, and July, *i. e.* between the vernal and autumnal equinoxes while the minimum (8' to 10') take place throughout the rest of the year. If the variations of the horizontally balanced needle be compared, it will be observed that from the vernal equinox to the summer solstice the north pole of the needle turns to the east, while throughout the remainder of the year, *i. e.* from the summer solstice to the following vernal equinox, the tendency of the variation will be to the west.

The intensity of magnetic force in different places is measured by the number of oscillations made within a given time by a needle which has been set in motion. Professor Hanstaen, of Christiania, found that the magnetic force on our globe varies not only according to difference of latitude, but that it is subject to daily and annual variations, depending on the variable influence of the sun on our planet. This intensity is observed to decrease from the beginning of the day until 10 or 11 A. M., about which hours it is at its minimum. The intensity then begins to increase, and attains its maximum in winter about 4 P. M., and in the summer from 6 to 8 P. M. In winter the magnetic intensity of the earth is greater than in summer, and the maximum is observed about the winter solstice, the earth being then in its perihelion; the minimum corresponds to the summer solstice, *i. e.* when the earth is in its aphelion. The greatest diurnal variation is observed in summer, the least in winter.

As an additional proof of the magnetism of light, Professor Barlocci adduces the following experiment. Two fine sewing-needles were fixed at the two ends of a very delicate slip of dry straw, which was either suspended in its centre of gravity by a silken thread (care being taken that the fibres of the latter were not twisted), or a little glass cap being fitted, it was placed like a magnetised bar on a pivot. The point of this delicate piece of apparatus was immediately attracted by the light of the spectrum, when brought to its two extremes, even when it was covered by glass to protect it from the agitation of the air. Professor Barlocci attributed this attractive power of decomposed light to magnetic action; because he observed that when the needles employed were so magnetized as to present two opposite poles at the two ends of the delicate bar to which they were fixed, the north pole was not attracted by the violet ray of the spectrum, but rather repelled, while it was readily attracted by the red ray,—a fact which appears to demonstrate that the spectrum actually possesses a certain degree of magnetic polarity in its two extreme colours, red and violet.

He next refers to an apparatus contrived by Watt of Edinburgh, in which a series of magnetized needles were so arranged on a ring of cork as to acquire a rotatory motion when exposed to solar light, and suggests the probability that the influence of the sun on the *Helianthus* may be due to an electromagnetic action. The closing of the petals of the daisy and convolvulus in the evening, and of the *Anagallis arvensis* when the sun is obscured by clouds, may possibly be explained by a similar influence. The petals, stamina, pistils, and leaves of plants are attracted by bodies charged with electricity, and by magnetized bodies when they are in an electrical state. Among many remarkable phenomena in vegetable physiology may be mentioned what has been poetically termed "the sleep" of the leaves of the horse chestnut tree, indicated by their drooping after sunset: this may be due to the loss of magnetic influence during the absence of solar light. Precious stones, as the topaz, amethyst, and sapphire, when electrified, act on the magnetic needle, and are capable of even acquiring polarity, and communicating magnetic properties to delicate steel needles, with which they are placed in contact. This last-mentioned fact confirms the connection now well known to exist between electricity and magnetism.

Professor Barlocci then passes to the consideration of the *electrical* power of light; and as a delicate test for this he made use of the body of a frog. As the subject is exceedingly interesting in relation to animal physiology, shewing that light may produce the effect of a galvanic circuit, and that probably the nervous systems of animals may be in this way impressed by solar influence, we shall here give an abstract of the ingenious experiment of the Professor. The body of a frog, from which the skin and head had been removed, was fixed to a glass insulator, the crural nerve and spinal marrow being attached above to a wire connected with a small disk of copper blackened, and the legs being connected with a wire attached to a similar disk placed below. The apparatus was then exposed to the spectrum in such a way that the violet rays fell on the upper disk of copper, and the red rays upon the lower. When connection was made with the copper wires at the back of the apparatus, muscular contractions evidently took place in the body of the frog. The strength of these contractions varied with the vigour of the animal, the degree of light, and the state of humidity of the atmosphere. When the apparatus was removed from the spectrum to a shady place, where there was but little light, no contractions took place on connecting the wires. Again, on gently warming by a lamp one of the disks, or any portion of the two wires which served to

unite the nerves and the muscles, there was no change. Hence it would appear that the power which in this case stimulated the animal organs and caused contraction, exists in solar light.

As if in anticipation of the remarkable discovery now about to be laid before the Royal Society, Professor Barlocci observes, that by a closer examination of the subject, it will doubtless be demonstrated with certainty that there is a very close connection between solar influence and electric and magnetic phenomena.*

DANGER OF MERCURY IN BRIGHT'S DISEASE.

Mr. HARRISON presented to the Reading Pathological Society, the kidneys of a female in the middle period of life, atrophied to the last stage of Bright's disease. The urine in the bladder was one mass of albumen. For the last ten months she had been complaining of a variety of severe symptoms; pains in several parts of the body, with ascites, and an extreme feeling of depression; the skin resembled ichthyosis; there was dulness over the right lung; the liver very much enlarged; urine scanty, but not tested at this time. The liver was supposed to be the organ most grievously at fault. Anunction of about a drachm and a half of mercurial ointment produced the most violent salivation, followed by sloughing of the cheeks and exfoliation of the jaw with the teeth. After some weeks, hæmoptysis, with diarrhoea of bloody stools, set in, under which she sank.—*Mr. S. L. Walford's Retrospective Address: Prov. Med. and Surg. Journ.* Sept. 24, 1845.

[REMARKS.—The above is an impressive addition to a long list of instances in which the administration of mercury to persons suffering from renal disease, has been followed by salivation of the most uncontrollable and formidable kind. Too much stress cannot be laid upon the injunction of invariably testing the urine for albumen, and taking its specific gravity, previously to submitting any patient to a mercurial course, and of repeating this examination, from time to time, during the progress of this plan of treatment. In no case of chronic visceral disease can even a single dose of any mercurial preparation be safely given, unless this examination has been previously made.—*Ed. Gaz.*]

* Lungi però dal presumere, che possano avere le mie osservazioni tolto ogni dubbio su questo delicato argomento, mi giova solo sperare di avere aggiunto, qualche grado maggiore di probabilità a questa nuova ipotesi; e che continuando i dotti fisici di Europa a coltivare questo ramo importante della scienza, potrà dileguarsi ogni oscurità, e riconoscersi con certezza, come ed in qual modo, la luce solare influisca nella produzione dei fenomeni elettrici e magnetici.

Correspondence.

ON THE TREATMENT OF PLACENTA PRÆVIA.
BY W. NEWNHAM, ESQ.

SIR,—The great question of the best mode of treating cases of placenta prævia is so important, and the general adoption of the proposed plan of detaching the placenta, and then leaving the case to nature, appears to me so fraught with danger to both fetal and maternal life, that it cannot be too thoroughly weighed before we venture upon disturbing the established practice. It is so much easier to detach the placenta, and wait the event, than it is to carry through the case to its termination by turning and completing the delivery, and there is incurred so much less of *apparent* responsibility, that I am fearful especially lest the junior members of our profession may be induced to shelter themselves in their inaction under the protection of great names. It is a point of practice which must finally be decided by the relative safety to the mother; and unless it can be shown that the new practice is attended with decided advantage in this respect, it ought not to be adopted, since unquestionably it places in greater jeopardy the life of the child; and it is with the hope of contributing some facts in aid of this decision that I have ventured to crave a corner in your excellent journal.

On consulting the records of my obstetric practice, I find there have been *thirteen* cases of placenta prævia since the 1st of January 1812, and of these, *twelve* recovered perfectly: the thirteenth case was that of a very poor woman, who had suffered much from hæmorrhage before I saw her, whose external circumstances were as wretched as possible, who had been borne down by the affliction of a large family and a bad husband, and by want and misery in every shape: she was a picture of woe and emaciation, and, to my surprise, she lived two hours after she was delivered. In this case the turning was undertaken as a forlorn hope, and as an effort to be made to save her, rather than allow her to die without such effort.

The preceding results were sufficiently satisfactory to me: that twelve out of thirteen should have been saved, while the thirteenth was only waiting to be carried off by the first shock the system might sustain, was a result as favourable as could have been hoped for, and one which I was disposed to attribute,—1st, to my invariable rule, in every case of doubtful hæmorrhage, to make myself perfectly certain as to the cause of the flow of blood; 2dly, having ascertained that it was from placental presentation, to lose no time in effecting delivery

by turning—to turn at once if the os uteri were sufficiently dilated, or dilatable—and if not, to adopt every possible means to secure this object, and to turn as soon as it was obtained; and 3dly, to the possession of an extremely small hand, which enabled me to do all I had to do with less violence to the mother, and consequently with less present hæmorrhage, and less subsequent irritation.

The above thirteen cases are all that have occurred to me; six of them were under my own exclusive care, and the remaining seven, including the fatal one, were midwives' cases; they are not, therefore, selected cases, or taken from one class of life, but may be considered as a fair sample of country practice.

I am sorry to say, that I have no record of the number of children born living, but my impression is, that this has always turned upon the presence or absence—the more or less of pain—the more or less of delay in the final expulsion of the child: if the child has been born quickly it has been born alive, and if much delay has occurred it has been still-born. I regret the inability to furnish this information, however, the less, because the question of treatment can never be referred to the relative danger to the infant, this being unquestionably greater by the modern proposal of first detaching the placenta.

Such being the result of my own practice, aided by the convictions of all my literary research, I should feel so satisfied with the established mode, that I could not venture upon adopting the more novel treatment, except upon far more enlarged testimony than we at present possess.

Nevertheless, I can conceive of cases complicated with placenta prævia, as in narrow pelvis, or any other case in which the head is presenting, and it might be ultimately necessary to diminish the size of that head: I can conceive of such a case, in which the early detachment of the placenta might give the opportunity for employing the perforator and crochet, and might thus afford a valuable resource in circumstances of extreme difficulty. But this is an exceptional case, and the rule must not be deduced from it. In cases, therefore, of *necessary* hæmorrhage, the *rule* must still be, turn and deliver as soon as circumstances admit; but when circumstances render this rule impracticable, it is a comfort to be able to fall back upon another practice with the conviction that it may be hopefully employed.

No case of nature effecting her own purpose in placental presentation has come before me; but a very intelligent midwife of this place, whose practice includes about 400 labours annually, has told me that she has twice met with this case

in women with very quick labours. She has also *twice* met with what is called spontaneous evolution of the foetus in arm presentation; but I presume that in neither instance would any wise person wait for these extraordinary efforts of nature.

There are some observations on uterine hæmorrhage generally, which I had thought of appending to this paper, but which I must reserve for a future communication.

In conclusion, Mr. Editor, I have only now to say, that I have been somewhat scandalized of late by the number of cases returned as deaths from *child-birth* in your valuable weekly tables: if it were possible for you to furnish your readers with the *causes* of these deaths in child-birth, you would confer an inestimable favour upon the profession at large, as well as upon your correspondent*.

Farnham, Oct. 27th, 1845.

SANGUINEOUS TUMORS ON THE HEADS
OF NEW-BORN CHILDREN.
BY CALEB ROSE, ESQ.

SIR,—In the MEDICAL GAZETTE of the 19th of October, Mr. Kesteven has related a case of sanguineous tumor of the head, occurring in a new-born child; the report of this case I read with much interest, as I was a good deal puzzled a short time since by a similar one occurring in my own practice: these cases are either of rare occurrence, or have been unnoticed by obstetric practitioners; perhaps, therefore, you will allow me to record this case in your journal.

On the 29th of June last, a young woman was attended by me in her first labour; parturition was in every respect natural, and for a first labour unusually easy. Upon inspecting the infant, a boy, about a quarter of an hour after its birth, I found a tumor upon the upper and posterior part of the right parietal bone; this swelling was as large as half an orange; its contents were quite fluid, and the bone immediately around it completely impressed me with the idea of there being a fracture, though I could not in any way account for such an accident; the swelling was entirely different to the ordinary scalp tumor produced by pressure. Eight weeks passed over, and the only alteration in the swelling was, that it had become circumscribed by an indurated margin; this, however, yielded to pressure so as to allow the bones to be felt beneath, and still there appeared to have been a fracture; the contents of the tumor remained quite fluid; the skin over it was not discoloured; there was no pulsation in it, nor did the child's

crying at all affect it; pressure upon it did not inconvenience the little patient, who was indeed remarkably healthy and thriving. I did not see the child (now two months old) for four days, and at my next visit I was told that the swelling had entirely disappeared; this was almost literally true, for the only trace of it was a slight thickening of the subcutaneous tissues; the bone was quite sound, and there was nothing to indicate that it had ever been fractured.

I have lately read the paper by Mr. Adams in Braithwaite's Retrospect, and I imagine my case to have been an example of the second variety of cephal hæmatoma, as described by that gentleman.

During the progress of this case I was struck with the very palpable fluidity of the contents of the tumor, its long continuance with so little alteration, and then its sudden dispersion: the resemblance to a fracture was also very exact; once or twice I thought I felt bone when firmly pressing upon the centre of the swelling, but I could not be sure of it. There were no symptoms to treat, therefore I did nothing, merely watching the child carefully in case anything untoward should happen. The practice supported by Mr. Adams would certainly remove the effusion more speedily, but I do not think so decisive a measure is called for; truly, as Mr. Kesteven remarks, one or two cases can hardly form a rule of practice; but I must say that, provided no unpleasant symptoms supervened, I should be inclined to leave these cases to nature, or at most to apply some stimulant to promote absorption; perhaps the application of a solution of iodine would have this effect.

Swaffham, Norfolk,
Oct. 24th, 1845.

ILLUSTRATIONS OF THE NECESSITY OF
LEGISLATIVE INTERFERENCE WITH THE
PRACTICE OF MIDWIFERY, &c. &c.

BY W. BROWN, M.R.C.S.E.

THERE is no stronger confirmation of the fact that people are not safely to be entrusted with the care of their own health and lives, than that, in a period so calculated to inspire anxiety and fear, as that of parturition, women will continue, and husbands will at least *allow* them to continue, to place their lives in the hands of those who not only have not one single qualification for the office of midwives, but are generally rendered almost incapable of acting by age and infirmity. I here propose to furnish two glaring illustrations of the evils occasioned by the want of proper restrictions on the practice of midwifery; a subject of some *public* interest at the present time. Because we bring forward the delinquencies of ignorant old women, we must not be supposed to forget the two or three

* [An Analysis of the Registrar-General's Report on the Mortality from Child-birth will appear in our next number.]—ED. GAZ.]

cases which have recently come to light of unaccountable and most brutal mismanagement of women in labour, by persons within the pale of the profession. Such instances, however, are pretty sure to be fully exposed; but it is not so with the more numerous, more general, and usually less striking, neglects, delays, and injurious inter-meddlings of ignorant and aged midwives. The cases which I am about to detail will serve the purpose of shewing that ALL who practise the art of midwifery should first have to give some adequate security to the public of their competency.

On the 15th ult., Mrs. D., the wife of a farmer and butcher, was confined by a midwife of her tenth child: soon after this, and before medical aid could arrive, she was a corpse, from flooding. The whole affair had occupied about two hours from the time of delivery. The midwife was a woman nearly ninety years old, and almost *blind*! The case of course created some sensation in the neighbourhood, which has not yet subsided. Yet, one week afterwards, the wife of another farmer, living not more than a mile and half distant, had the same old woman to attend her in her labour of the eleventh child; and with what *must* have been the same result, if the medical attendant had not timely arrived. The source of danger was the same—flooding: a result likely to take place in females of the ages of these patients, who had had large families of strong and robust children, and in whom, therefore, all the parts must have been much stretched, weakened, and lax.

Such examples as these are not alone important in regard to the individuals who are the immediate victims of them; they are *more* important in their general effects. Who does not know the anxious, and almost despairing feeling, of many pregnant women, if they are delicate, or especially if they are advanced in years, and have not had a child for a long time, even when all is well around them? As an instance in point, I may adduce the following. Three or four months ago I attended Mrs. W. in her confinement. Her then youngest child was six or seven years old, and she herself was nearly 40 years of age. During the earlier periods especially of this last pregnancy she had felt a constant anxiety and apprehension, contrary entirely to what had been the custom with her on former occasions: she had this time suffered from a constant foreboding that something was wrong. The child was born with that deficiency of cranial development which *must* render it an idiot. Yet she herself, her husband, and the other three children, are noticeable for acuteness. For examples of the influence of the mind in pregnant females, we may refer to the siege of Antwerp, where, in half the cases of

pregnancy, either miscarriage occurred, or the children were born hydrocephalic, &c. Take, again, the reign of terror in France, where, either like miscarriages occurred, or congenital idiocy, or chorea in the offspring.

I now come, however, to detail a more specific instance, perhaps, than that of the second farmer's wife, of the influence of the panic occasioned by the case of Mrs. D. It was a case of miscarriage. The subject of it is a delicate, very slight, nervous person. She is advanced in years, and was pregnant of her second child very rapidly on the birth of the first. She was in the sixth month of gestation. For the last three months she had suffered more or less from a descent of the uterus, for which she had worn a napkin closely fastened up as a support. Occasionally, when the descent was worse than usual, there would be a very slight discharge of blood. If at any time she was in good spirits, the womb would keep up; but if anything depressed her more than usual, the descent would be aggravated. The case of Mrs. D. made a very powerful impression upon her. It increased her anxiety, especially if she was left alone for a time, almost to a despairing feeling, and proportionally aggravated the prolapsus, together with its distressing sensations, and also the occasional oozing of blood. It is true that in this unfavourable state of things she took a short visit to some of her friends, and that in doing so she suffered very painful sensations from the motion of the vehicle, and also a more copious discharge of blood. On the evening of the 5th inst. she was very despondent, and in the act of stooping felt a gush of fluid burst from her. She sat down for a few minutes, and, on rising up again, had such a hæmorrhage as suddenly prostrated her. She was carried up stairs, cold vinegar cloths were applied to the vulva, &c. On Mr. Hender's arrival, he found her in a faint state: the loss of blood had been very great, and was still going on gradually. Having brought her, by adopting all usual means, into a better condition, and believing that the hæmorrhage had been so violent that the child could not live, and having found the os uteri to be dilated to nearly the size of a crown-piece, he gave her two doses of the tincture of *secale cornutum*. This, however, had not the least effect in inducing anything like pains. Mr. Hender, it may be remarked, had ascertained that the case was not one of *placenta prævia*, partial or complete. In the morning, there being still a complete absence of pains, he gave her two more doses of the tincture of ergot, but with a like negative result. I then took charge of the case. There was no immediate active interference, either in the shape of plugging, or of turning and

bringing away the foetus. I put a wide flannel bandage over the whole abdomen, as a support to the abdominal parietes. From this the patient derived much comfort. Having attended to all other more general matters, I left her in the afternoon, with a dose of opium and acetate of lead to be taken in the evening. Between five and six o'clock the next morning pains suddenly came on, and with about three of them, before any medical man could arrive, foetus, placenta—all, was expelled. It was an arm presentation. The patient herself wished the child to be kept back; it was, however, forced out, doubled up, with the secundines with it, all of a heap. The child seems to have perished when the violent attack of hæmorrhage first came on, as she felt it strongly just before the liquor amnii burst away, but not afterwards. When I arrived I rebanded the patient, and she has since done in every way well.

I may here make one remark in regard to the last case described, which is, that although there was an interval of twenty-four hours between the first outbreak of the hæmorrhage and the expulsion of the contents of the uterus, yet there were no pains whatever until the last moment. This was very different from what occurred in another alarming case which I had a few days before (but which proved to be a case of mole pregnancy, of the kind "where the parietes of the ovum had been thickened and lobulated by masses of coagulated blood."—Rigby). In this case, likewise, there was an interval obtained of some twenty hours' duration. But *during* this interval, and especially the first twelve hours of it, there were occurring regularly, strongly, and rather quickly, the grinding preparatory pains that are referred with such distress to the back.

Callington, Cornwall,
Oct. 20, 1845.

SANGUINEOUS TUMORS ON THE HEADS OF NEW-BORN CHILDREN.

BY JOHN AUDLAND, ESQ. M.R.C.S.L.

SIR,—Having read a letter in the *MEDICAL GAZETTE* of Saturday last, on "Sanguineous tumors of the heads of new-born children," by Mr. Kesteven, I am induced to forward you for insertion an account of two cases which occurred in my practice, should you deem them worthy of a place in your columns.

Mrs. W——, residing a few miles from this place, was confined of a healthy male child on the 30th of September, 1842. The labour, as is always the case with her, was severe, owing to a contraction of the brim of the pelvis. Two days afterwards, my attention was drawn by the nurse to a swell-

ing on the infant's head, and on examination I found a soft elastic swelling extending from the middle of the left parietal bone anteriorly, over the lambdoidal suture, and almost to the occipital tuberosity behind; above it extended from the sagittal suture to the inferior edge of the temporal bone. There was no discolouration of the skin, no pulsation, pressure upon it caused no pain nor inconvenience, and as the head in other respects was perfectly formed and the infant well, I concluded that there was effusion of blood or serum under the scalp caused by pressure of the head during labour. I advised cold lotion and pressure to be applied. On the 6th the swelling was somewhat larger, and although I recommended patience, and gave a favourable opinion as to the termination of the case, the parents were anxious and desirous to have further advice. An experienced practitioner, many years my senior, was fixed upon, and we met on the 10th. Before he saw the infant, I told him what I thought was the nature of the case, and the opinion I had given the parents. On examination he differed from me, and mistaking the hard ridge around the base of the tumor for the edge of the bones, he came to the conclusion that a portion of the bones was deficient, and that the swelling was an encrusted tumor containing a watery fluid, and communicating with the brain; in fact that it was of the same nature as spina bifida.

He, however, advised it to be punctured, the opening to be closed, and an attempt made to procure contraction of the cyst. I punctured it with a lancet, and out issued a quantity (two or three ounces) of grumous blood, and the bones of course were found perfect. The opening was carefully closed, and pressure and a cold lotion applied. The following day the swelling was almost as large as before. By constantly applying the lotion, and keeping up pressure by means of strips of adhesive plaster, the swelling gradually subsided, and by the 1st of November it had altogether disappeared.

The other case was that of an infant, born on the 25th of March, 1845. The swelling was situated in exactly the same place; it was not quite so large, but had the same characteristic appearances as the former case. It was treated by evaporating lotions and pressure, and disappeared in about six weeks. The labour was quick, so much so that the child was born when I arrived, but for two or three days previously the mother had felt a constant bearing-down pain, and was much inconvenienced by the head of the child forcing itself down into the lower part of the pelvis.

No doubt the swelling in these two cases was caused by some vessels under the scalp

being ruptured during labour, and is in every respect similar to those swellings produced by blows on the scalp, and which Pott and other surgical writers mention, as being liable to be mistaken for fracture with depression, on account of the hard ridge around the base.

Applying cold and pressure to promote absorption, seems to me the best plan of treatment, or perhaps the tumor would as readily disappear if left, as it was in Mr. Kesteven's case, to nature. Puncturing the swelling might be followed occasionally by serious consequences, although in my case it seemed to do neither good nor harm.

In both these cases, as well as in Mr. Kesteven's, the tumor was on the left parietal bone. No doubt in all three the parietal protuberance presented at the brim. This, according to Nægele,* is a very unfrequent presentation, and whether the hand in these cases adapts itself less readily to the passages, I cannot take upon myself to say, but further experience may perhaps determine.

Tintern, near Chepstow,
Sept. 22d, 1845.

MEDICAL ATTENDANCE ON THE POOR IN SCOTLAND.

SIR,—I cannot allow the letter of your correspondent from Dollar, in your September Number of the 26th, to remain unnoticed in your pages, as he clearly misunderstands the medical provision for the poor in the late Poor-Law Act for Scotland. He says, that "medical attendance to paupers gratis is no longer charity to the poor, but a boon to the rich paying assessments." The medical relief which the parochial boards are *required* to give to the poor only extends to those enrolled in their books and receiving parochial relief (Act, sect. 69). Now the gratuitous medical assistance which many gentlemen are constantly in the habit of giving to the poor, embraces a far wider class than this, and where the charity is, in many instances, even greater, and the occasion more urgent, than in the case of the enrolled poor. I hope and trust no medical gentleman will be found, therefore, who, upon the strength of the very limited application of the Act, will discontinue his medical assistance to the poor.—I am, sir,

Your obedient servant,

JAMES RANKINE, M.D.

Ayr, Oct. 25, 1845.

ACUTE LARYNGITIS SUCCESSFULLY TREATED BY TARTAR EMETIC.

BY MARTIN M. BULL, M.R.C.S.

Miss J.—, æt. 22, had had a sore throat for a fortnight, which was worse on Thurs-

day, Oct. 23d, 1845. On the evening of that day she went out into the open air, which was cold and damp. The following day a hacking cough came on in the morning, continuing during the day; the throat was tender in the region of the larynx all the afternoon. Feeling chilly, she had a pediluvium, and went to bed at 6 P.M. About 9½, she awoke in a condition which she thought was nightmare—alarmed, feeling as if about to fall from a height, with a feeling of oppression at the chest, unable to move, speak, or breathe; the latter apparently from constriction in the throat. In about a quarter of an hour a cough came on "in paroxysms." When she first awoke she felt a pain in the larynx; it was at first throbbing, then aching; subsequently "the inside felt raw, as if scalded with hot water."

At 10 P.M. I found her suffering with an incessant, short, dry, ringing cough; respiration stridulous, performed with much difficulty, with occasional paroxysms of complete apnoea, lasting several seconds. The voice was hoarse. She complained of severe and constant pain in the larynx, especially on the right side; it was very tender externally. Deglutition very difficult and painful, inducing a paroxysm of increased dyspnoea; tonsils and uvula inflamed, but not much swollen; eyes suffused and watery; countenance flushed, indicating much distress. Pulse frequent, not hard; skin not remarkably hot; lower extremities cold. I applied eight leeches over the seat of pain, administering simultaneously a dose of a linctus of Vin. Ipecac., Tinct. Camph. Co. and Mucilage, and a solution of three grains of emetic-tartar in an ounce and a half of water, by degrees, as the patient could only swallow at intervals, and small quantities. Nausea was speedily induced, and soon followed by actual vomiting, which was very painful. Coincidentally with the induction of nausea, the cough abated, and soon nearly ceased; the breathing and deglutition becoming more easy. The leeches drew well, and soon came off, the bites bleeding freely for three hours, during which time there was a manifestly progressive improvement in the symptoms; the pulse fell to 72, and became quite soft; the cough occurred seldom; and the breathing was performed almost inaudibly. The patient complained of headache and "deadly nausea," but dozed several times. Between 12 and 1 A.M. she to Hyd. Chlor. gr. iv.; Pil. Col. Co. gr. v laryngeal pain less. A bran-poultice w applied to the throat about 2. She slept good deal after this. At 4, pulse 84, firm respiration pretty free; skin dry. V. S ad 3vij. produced slight faintness.

Hyd. Chlor. gr. ij. fit. pil. 3tiâ. qq.

* Vide Dr. Churchill's Theory and Practice of Midwifery, page 157.

horâ sum. c. Cochl. ij. Ampl. Mist. sequentis.

R Potass. Nit. ʒj.; Antim. Pot. Tart. gr. j.; Liq. Ammon. Acet. ʒiss.; Aquæ, ʒivss.

After this she felt very sick, and the first two doses of the mixture caused actual vomiting. The pain went off during sleep soon after the bleeding. At 7½, found her asleep; pulse about 100, firm; blood sizy. 10½, no pain; a sensation of fullness in the larynx remaining; pulse about 80, quiet. 7, P.M. Headache; pain under the lower jaw on each side; skin moist; pulse quiet; breathing unembarrassed. To have an aperient draught. Oct. 26th. Better. 27th. Sensation of fullness nearly gone; pulse 72; skin moist; deglutition not at all painful; gums slightly spongy. To discontinue the calomel. 28th. Convalescent. Sensation of fullness gone.

The prompt and decided relief afforded in this case by the administration of tartar-emetic, and the *direct* application of leeches, appear to me to be worthy of note; as both of these proceedings have been said to be improper in cases of this nature.

Amersham, Oct. 29, 1845.

CAUTIONS TO BE OBSERVED IN THREATENED ABORTION.

DR. RADFORD concludes a paper upon the above subject with the following practical observations:—

1st, As flooding is never unattended with danger if it is allowed to continue unchecked for a length of time, and as it may exist in different degrees of violence without inducing uterine contraction, it ought, if possible, to be suppressed.

2d, As pain may exist in different degrees of violence, and for a considerable length of time, but yet may be subdued if proper means are adopted; on the contrary, if it is allowed to proceed without interference, the expulsion of the ovum is sure to follow.

3d, The first duty in the treatment of abortion is to make a careful vaginal examination to ascertain the state of the cervix uteri. If its figure, size, thickness, and length be normal, it is the duty of the obstetrician to adopt means to preserve the ovum, and subdue the attendant symptoms; on the contrary, if we find the cervix uteri is shortened, partially or entirely distended, so that the figure of the uterus is changed, and is beginning to assume, or has assumed, an oviform shape, the abortive process should be encouraged by every means in our power, at the same time that we have due regard to those contingent circumstances which are attended with hazard.—*Provincial Med. and Surg. Journal*, Sept. 17.

Proceedings of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, November 3d, 1845.

DR. THEOPHILUS THOMPSON, PRESIDENT.

Tracheotomy and Laryngotomy.

MR. PILCHER, in reference to the case detailed at the last meeting, said that he agreed with Mr. Roberts that the inflammation was of an erratic character, and that the seat of it, causing the more formidable symptoms, was at the upper part of the rima glottidis, and that the chordæ vocales were involved. Regarding the operation as necessary, where should it be performed? Generally, laryngotomy was the least advisable proceeding, for the larynx was often the seat of the disease. Tracheotomy was better. There was certainly more fear of hæmorrhage from the external incisions, in tracheotomy, but this hæmorrhage could be arrested previously to the opening of the tube itself. This was not the case in laryngotomy, in which there was usually an artery wounded, the hæmorrhage from which might not be always so harmless in its consequence as in the present instance.

MR. ROBERTS believed that, in his case, tracheotomy would have been the more advisable proceeding, as it could be performed at a spot further removed from the seat of disease; but he could not resist taking advantage of the facility which presented itself of opening the larynx. With regard to the artery, it would not be wounded in a transverse incision over the larynx, and a tube could be introduced through such an incision without a perpendicular one being made. The symptoms, in his case, proved the disease to be seated high up, but still there was this objection to tracheotomy, that difficulty would be experienced in the frequent introduction of the tube; the necessity for which occurred in this case. He objected to the performance of the operation by means of the trochar and canula, as the latter would have required removal every few minutes, in consequence of its small size.

DR. G. BIRD remarked, that, with a properly-constructed trochar and canula, no such difficulty as that mentioned by Mr. Roberts would be experienced. He referred to several cases operated on by Mr. Cook and Mr. Hilton, in Guy's Hospital as evidence of the superiority of the canula and trochar.

MR. BISHOP considered the trochar and canula the best instruments with which to perform the operation; as hæmorrhage

always took place, and the pressure of the instrument would prevent the escape of the blood into the air-passage. He objected to the operation at all in the cricoid thyroid space. The removal of the canula might be prevented by the use of a syringe. He could not help thinking that if, in the early stage of Mr. Robarts' case, a stimulating gargle had been applied to the throat, or the fauces had been washed over with a solution of nitrate of silver, the disease would not have gone on to the production of œdema of the glottis.

Dr. BENNETT quite coincided with the opinion expressed by Mr. Bishop. He regarded the case as one of œdema of the glottis, consequent upon the condition of the fauces, and that this condition might have been rectified by the means recommended by Mr. Bishop. As the case occurred, however, it was evident that any delay in the operation would have been fatal. He made some remarks generally on the treatment of affections similar to the one under discussion.

Mr. ALDER FISHER inquired the experience of members generally, with respect to the trochar and canula, in the performance of tracheotomy?

Dr. G. BIRD drew attention to the fact that disease of the kidney might be a predisposing cause of œdema of the glottis; and stated that in cases of this affection the urine was very frequently albuminous.

Mr. HEADLAND inquired whether the inflammation of the throat, in this case, might not have been the result of the influence of a special poison? Should we not, then, endeavour to find a special remedy? He had often found guaiacum of service in cases of relaxed and œdematous throat.

The PRESIDENT drew attention to several points in the case. Nitrate of silver had not been applied. There was redness of the velum, but it was not extreme, at one part. The urine was free from albumen. The effect of the mercury, after the operation, as soon as the remedy had time to exert its special effect, was to entirely remove the urgent symptoms.

EASY MODE OF APPLYING LEECHES.

A READY and expeditious method of applying leeches may be effected by rolling up a piece of card or stiff paper into the form of a tube, within which the leech is to be placed lengthways; one end of the tube may then be closed, and the other, corresponding to the mouth of the leech, applied to the surface where the leech is required to bite, in the same way as that adopted in the use of an ordinary leech-glass, the place of which this contrivance is intended to take.—*Schmidt's Jahrbucher*, No. 2, 1845.

Medical Intelligence.

EXHUMATION OF SKELETONS.

Determination of Stature from the Long Bones.

IN some excavations lately made on the site of the ancient priory of Lewes, two skeletons have been disinterred evidently of very great antiquity. One of them is supposed, from an inscription on the cist, and local circumstances, to be that of Gundreda, fifth daughter of William 1st, and the other that of her husband, William de Warren. The bones were examined by two surgeons, who found them to be of a firm texture, hard and solid, and in a high state of preservation, especially those of Gundreda. The skeleton of the latter was nearly perfect, and, judging from the length of the bones, the bodies were assumed to have been considerably above the middle stature. The measurement given of the bones is as follows:—

	Male.	Female.
Femur	19 $\frac{3}{4}$ inches	15 inches.
Tibia	15 $\frac{1}{4}$ „	13 $\frac{1}{4}$ „
Humerus	12 $\frac{1}{2}$ „	12
Stature,	6 ft. 1 in.	5 ft. 8 in.

As the skeleton of the female was complete, it would have been advisable to have taken the stature by placing the bones in their proper order. There is great difficulty in judging of stature from the length of the long bones, and there is always uncertainty about the measurement. Thus, as Devergie has remarked, there is a considerable difference in the length of the tibia according to whether it be measured from the articular surface at its head to that at the ankle, or to the extremity of the inner malleolus. The same objection applies to the measurement of the ulna. The humerus of a full-grown soldier we found to be, by taking the extreme points, only 11 $\frac{3}{8}$ inches. The average length of this bone in a man from 5 ft. 6 ins. to 5 ft. 9 ins. is stated to be 12 $\frac{1}{2}$ inches—the exact length which it was found to be in the skeleton of William de Warren. The great difference in stature depends, however, on the lower extremities, and the thigh-bone of the male is here of considerable length, being two inches above the average of adults of middle height*. The tibia is also unusually long. It is therefore probable that the body of the male had the stature assigned to it. We think, however, the stature of the female has been over-estimated. The thigh-bone is below the average length of that of females of only five feet; but the humerus and the tibia have the full length of females of that age. It is probable that she was not more than 5 feet 2 inches. For the sake of understanding these measurements in future cases, it ought to be stated from

* See page 702.

what points of the bones they extended. The great indestructibility of the skeleton, when kept from air and moisture, is clearly shown by the state of preservation in which these bones were found after 750 years' interment !

Dr. P. B. AYRES has been elected Physician to the Islington Dispensary.

Dr. HEMING has resigned his appointment of Physician-Accoucheur to the Westminster Dispensary.

OBITUARY.

DIED on the 9th instant, Charles Badham, M.D.; Professor of Medicine in the University of Glasgow. Dr. Badham was long known to the profession as one of the oldest and most respected members of the London College of Physicians. He was an elegant classical scholar, and a learned and impressive lecturer. We believe that Dr. Badham's health has been in a declining state for several years.

At Copenhagen, in his 72d year, Christian Fenger, Director of the Royal Academy of Surgery in that city, and Chief Surgeon to the King of Denmark.

Selections from Journals.

ANIMAL CHEMISTRY.

CHEMICAL AND MICROSCOPICAL EXAMINATION OF SEVERAL KINDS OF SPUTA.
BY SCHERER.*

Sputa of Pneumonia.

UPON mixing portions of pneumonic sputa with water, and filtering the mixture, there was obtained a clear transparent fluid, which became turbid upon boiling; upon the addition of a drop of acetic acid this turbidity became converted into a flocculent precipitate which an excess of the same acid did not completely dissolve. Acetic acid, when added to the cold liquid, also produced turbidity, which did not disappear in an excess of this acid. Alcohol caused turbidity, also a precipitate of white flocculi. It would appear, therefore, that this liquid contained albuminate of soda in solution, together with another soluble substance—most probably mucus. After being allowed to stand at rest for twenty-four hours, this clear filtered fluid became whitish and turbid, depositing a sediment of small white granules.

Upon examining beneath the microscope the matters which were left on the filter, they were found to be composed of a large quantity of distended mucus corpuscles, con-

taining distinct nuclei; also of many separate nuclei, and of a large quantity of nucleoli, or granules.

As above stated, the watery fluid obtained by filtration became turbid in about twenty-four hours, and deposited a number of small granules; whence it would seem that this formation of granules had been carried on after separation from the organism, and was probably effected by the influence of the oxygen of the air on the albuminous fluid. [Dr. Golding Bird, however, noticed a similar deposit take place in the viscid glairy fluid secreted during the first stage of acute bronchitis, after exposure for a few days to an atmosphere of hydrogen; whence it would appear that oxygen is not essential to its formation. When examined beneath the microscope, the white cream-like precipitate that was formed appeared to consist of minute round particles, and possessed all the chemical properties of insoluble albumen.*] These granules are insoluble in water and dilute acetic acid, which they were not before oxidation. When once separated in this solid form, they probably act as ferment-globules to the remainder of the fluid, the decomposition of which they speedily induce. The like has been observed in vegetable juices containing albumen, such as the juice of grapes: through the influence of the atmosphere the globules first appear as small solid particles; these gradually increase in quantity, and the fluid becomes turbid from the presence of them. At the same time saccharine fermentation commences, and is most probably produced by the influence of these small corpuscles acting as a ferment. This turbidity invariably takes place in all those fluids in which albumen exists, either alone or in the form of albuminate of soda, and especially where the fluid is much diluted with water; such, for instance, as in blood, urine, &c. This formation of the granules, which takes place in the fluids whilst cold, corresponds to the formation of the fine pellicle, in fluids containing casein or albuminate of soda, on slowly warming them. It seems most probable that in these latter cases this change also results from the action of the atmospheric oxygen, [a view which is confirmed by the fact that the pellicle in the latter case does not form when the fluid (as milk) is exposed to an atmosphere of carbonic acid.—Tr.]

Sputa of Broncho-Pneumonia.

Upon examining beneath the microscope the tenacious adhesive sputa (in which were large air-bubbles) of this affection, there were found large quantities of epithelial scales and of mucus corpuscles immersed in an amorphous, gelatinous-looking mucous substance. The mucus corpuscles were dissolved, though

* Chemische und Microscopische Untersuch. zur Pathologie.

* Philosophical Magazine, 3d series, Vol. 13.

not completely, in acetic acid; their cell-walls were thereby rendered thinner and more transparent. The margins of those corpuscles were less contracted than those of pus corpuscles. The mucous substance within which these particles were retained was very abundant; on the addition of acetic acid it swelled out and became partly dissolved. The above peculiarities distinguish this amorphous mass and the mucus corpuscles from normal mucous substance and ordinary mucus corpuscles, inasmuch as both these ingredients in the normal state are not only insoluble in, but coagulated by, acetic acid. It appears, therefore, that this secretion, particularly the amorphous substance, was chiefly composed of albuminous matter, having a disposition to solidity, and therefore allied to fibrine,—a view which was confirmed by the further chemical examination of it. Thus, when mixed with water and digested for a short time, there was obtained upon filtration a fluid containing a tolerably large quantity of albumen, and from which not a trace of mucus was precipitated by acetic acid; the matters insoluble in water, which remained on the filter, became almost entirely dissolved when warmed in acetic acid, and a precipitate was formed in the solution by ferrocyanuret of potassium, showing clearly its albuminous nature.

It appears, therefore, that the secretion from the bronchial mucous membrane, when secreted slowly in its natural condition, constitutes ordinary mucous substance, but becomes albuminous when secreted rapidly and under the influence of an inflammatory condition; and that this albuminous matter, when brought into contact with air, becomes gradually converted into a modification of fibrine; in croup it becomes actual fibrine.

Sputa of Chronic Bronchitis.

The sputa in this case were from a patient in whom examination after death discovered the existence of bronchitis, with considerable softening of the bronchial mucous membrane. Mixed with the thickish globular sputa were some yellowish cheesy-looking masses. Examined beneath the microscope these sputa were found to contain a quantity of pus corpuscles and numerous drops of fat; the former were readily soluble in acetic acid, leaving behind triple nuclei; the acetic acid coagulated some mucous substance, which was not visible before; there was no epithelium discoverable. When portions of these sputa were mixed with water, and filtered, a fluid was obtained, which became turbid on boiling, and let fall a flocculent precipitate. In the filtered fluid acetic acid also produced turbidity, which did not entirely disappear on adding an excess of the acid. Alum also caused tur-

bidity, owing to the presence of pyin. When digested in water these sputa gave out a large quantity of fat. The cheesy-looking masses contained in the sputa, when heated in a platinum dish, at first melted, and then burned with a clear bright light, leaving a black carbonaceous ash, which had an alkaline re-action when moistened, and contained rather a large quantity of phosphate of lime.

PATHOLOGY.

POINTS IN THE ANATOMICAL PECULIARITIES AND DIAGNOSIS OF CANCER OF THE BREAST. BY DR. ALBERS, OF BONN.

1. CANCEROUS tumors of the breast are at first usually round, uneven, and nodulated, yet perfectly defined.
2. On cutting into a breast containing a tumor of the kind, the line of demarcation between the cancerous structure, and the adipose and cellular tissue of the gland, is clearly defined; the tumor, however, cannot be removed like a cyst, for it is firmly attached to the surrounding healthy structures by a kind of fibro-cellular tissue, which tissue can be traced but a very little way into the substance of the tumor itself.
3. So long as it remains small the tumor is moveable, but as it increases in size it becomes fixed, partly from its coming into contact with muscular and unyielding parts, and partly from its becoming adherent to the skin. Inasmuch as the tumor is usually developed immediately beneath the skin, it is very soon perceived as a small lump, which becomes especially evident, since the gland has a great tendency to waste.
4. The skin over the tumor becomes remarkably contracted or puckered, an appearance which it more rapidly assumes the nearer to the skin the tumor is situated.
5. Excepting the medullary and fungoid variety, the cancerous tumor of the breast has a hard bone-like feel, the result of its peculiar structure, and it commonly sinks to the depending part of the breast, in consequence of its great weight.
6. The cancerous disease usually makes rapid progress in the neighbourhood of the nipple, which it surrounds: upon making a section of the nipple its healthy structure is found to be entirely supplanted by the cancerous tissue, no trace of lactiferous tubes being found, and no orifices at the extremity of the nipple; this degeneration of the structure of the nipple is, however, by no means an invariable attendant, being sometimes wanting.
7. In minute structure a mass of medullary cancer is composed mainly of fibres and cells, which assume many varieties of form: the cells in healthy tissue are of a tolerably uniform size, but in morbid growths of this kind there are found numbers of all sizes lying together, and intermixed with the

stroma of the mass, and with exudation material; these cells also vary considerably, as being more or less angular or elongated, and not presenting the regular characters observed in ordinary tissue; many of them are unprovided with nuclei. The fibres are remarkably fine and delicate. The tumors themselves usually contain a considerable quantity of moisture. In medullary cancer the cells detected by the microscope are of large size; they compose the chief part of the mass, few fibres being found. In hard cancer the cells are very small, and the diseased mass contains a large quantity of fine woolly fibres interwoven through its substance. 8. Fatty matters, frequently in the form of plates of stearine, are found abundantly in these malignant masses, also occasionally rhomboid crystals, apparently the ammonio-phosphate of magnesia (?) 9. The distribution of blood-vessels through a cancerous tumor is always irregular; these vessels are most developed at the circumference, and consist chiefly of veins; towards the centre of the mass there are very few: the walls of the vessels are delicate and soft, easily tearing, which accounts for the traces of hæmorrhage so frequently found within the substance of these tumors. 10. In chemical composition, albumen and fatty matters predominate over gelatine; two varieties of gelatine, namely, chondrine and gluten, are occasionally met with. 11. The adipose and cellular tissue in the neighbourhood of hard cancer is remarkably atrophied, and the fat itself very pale, whilst around a mass of fungus hæmatodes (a variety of soft cancer), the tissues are hypertrophied, and of a deep, sometimes dirty yellow colour; in the case of alveolar cancer the fat remains of a pale yellow colour. 12. Cancer usually affects one breast alone, and if removed tends to recur in the same breast, rather than attack the other, which commonly becomes atrophied.—*Schmidt's Jahrbucher*, No 2, 1845.

BOOKS RECEIVED FOR REVIEW.

Rees on the Analysis of the Blood and Urine, 2d edition.—Wilson's (E.) Practical Treatise on Healthy Skin.—Hughes' Clinical Introduction to the Practice of Auscultation.—Todd's Anatomy of the Brain and Spinal Cord.—Budd on Diseases of the Liver.—Ballard and Garrod's Materia Medica.—Grantham's Facts and Observations in Medicine and Surgery.—Phillips on the Potatoe Disease.—Chelius's Surgery, by South. Part 8.

GERMAN MEDICAL BOOKS for Oct.

Böhn, J., das Schielen und der Schnenschnitt. 8vo. Berl. 108.—Canstett und Eisenmann's Jahresbericht über die Fortschritte der Gesammten Medicin in allen Ländern. Erlangen, 1843, 1844.—Eitner, J. F. W., Enchiridium medico-chirurgi-

gimm. 8vo. Breslau. 5s. 6d.—Erdl, M. P., Entwicklung des Menschen und des Hühnchens im Eie. Vol. I. Pt. 1. 4to. Leipzig, 2l. 6s.—Fischer, J. N., Lehrb. d. Entzündungen und organ. Krankheiten des Auges. 8vo. Prag, 9s. 6d.—Frank, M., Erkenntniss u. Behandlung der Ohrenkrankheiten. 8vo. Erlangen, 9s. 6d.—Fritze, H. E. und O. F. G. Reich, die plastische Chirurgie. 4to. 48 plates, Leipzig, 2l. 8s.—Griesinger, W., Pathologie u. Therapie der psychischen Krankheiten. 8vo. Stuttgart, 12s.—Hyrly, J., Lepidosem paradoxa. 4to. plates, Prag. 16s.—Idem, vergleichend-anatomische Untersuchungen über das innere Gehörorgan. 4to. Prag. 32s.—Ingarden, E. N., Syphilidologie. 8vo. Wien, 9s. 6d.—Klencke, P. F. H., Abhandlungen aus d. Gebiete d. Physiologie u. Pathologie. 8vo. Berl. 4s.—Kramer, W., Beiträge z. Ohrenheilkunde. 8vo. Berlin, 7s. 6d.—Melicher, L. J., die angeborenen Verrenkungen. 8vo. Wien, 7s.—Oppenheim, Zeitschrift der Ges. Medicin.—Wittstein, Ueber die Darstellung und Prüfung Chemischer und Pharmaceutischer Präparate.—Zeitschrift, oesterreichische, homoeopath. Vol. I. 8vo. Wien, 12s.

ROYAL OBSERVATORY, GREENWICH.

METEOROLOGICAL SUMMARY

For the week ending Saturday, Nov. 8.

	Max.	Min.	Mean.
Height of Barometera	30.2	29.34	29.69
" Thermometer	60.3	28.3	47.2 ^a
Self-registering do.	79 ^b	15 ^c	
" in the Thames water	49.5	46 ^c	

^a From 12 observations daily. ^b Sun.

RAIN, in inches, 0.12: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 3.2° below that of the climate of London for the year. The extreme hebdomadal range in the self-registering thermometer was 61°.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Nov. 8.

BIRTHS.	DEATHS.	Aver. of 5 yrs.
Males . . . 630	Males . . . 448	Males . . . 491
Females . 596	Females . 496	Females . 472
1226	944	963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James . . (Pop. 301,326)	153
NORTH—St. Marylebone; St. Pancras; Islington; Hackney (Pop. 366,303)	121
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London (Pop. 374,759)	191
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar (Pop. 393,247)	211
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich (Pop. 479,469)	241

Total 9

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURES

Delivered at University College Hospital,

By DR. C. J. B. WILLIAMS, F.R.S. &c

Taken in Short-Hand by our own Reporter, and revised by the Professor himself.]

LECTURE IX.—July 17, 1845.

Cases of epileptic paroxysms—Fits succeeding to a fall—Minor and major fits—Diagnosis from encephalitis, &c.—Aggravation by antiphlogistic treatment—Cure by soothing plan and antispasmodics.—Fits in a girl. History; remarks—Paralysis of the lower extremities—Diagnosis—Treatment by blister, purgatives, hydrocyanic acid, and valerian—Great improvement—Hysterical aphonia—Cure.

Observations on the nature of convulsive fits—Distinction from apoplexy—Causes and pathology of the paroxysms—State of the circulation in the nervous centres—Effect on respiration—Nature of sleep—Explanation of effects of determination of blood to the head—Practical inferences on the treatment and prevention of convulsive diseases.

TO-DAY I resume the subject of affections of the nervous centres, which I began to notice in a former lecture. The cases then adverted to were those of fits of stupor, with more or less convulsion, but the stupor not amounting in degree to apoplectic coma, inasmuch as there was no stertorous breathing, and the stupor was soon relieved. I mentioned reasons for supposing that those affections arose from a congestive condition of the brain.

The next cases that we have to consider appear to be of a mixed kind, and to be as much allied to hysteria as to epilepsy, so that they might be called the hysterical variety of epileptic paroxysms.

The first case is that of George Wilson, which I will read, as reported by Mr. Cadge. "Aged 24; admitted June 19th. Moderate stature, pale complexion. Before his present illness he was in the habit of going about the country with a cart. Has always been of sober and industrious habits. Has had sufficient food at all times, but not clothing. He has been a good deal exposed at times, and frequently had rheumatic pains. He married a year ago. The state of his mind up to his present illness was invariably cheerful. None of his family is subject to fits. He enjoyed good health till about a year and a quarter since, when he became the subject of pains in the vertex, and

giddiness which came on at times. Soon after this he fell from the cart upon his head; the fall he supposes was caused by a sudden attack of swimming in the head and giddiness, while removing some sacks." This, you see, was under the influence of violent exertion. "He lay insensible for a time, but eventually walked home. The wounds caused by the fall healed soon, and he felt no other effect at the time than faintness and weakness. About a fortnight after he was seized with a fit, which made him insensible for half an hour, during which he struggled a good deal; the eyes became staring, and rolled in the sockets. When he recovered, he followed his usual employment, but he felt himself getting weaker, and his legs and arms trembled as he walked. About nine months ago he fell again during an attack of giddiness, and, as before, fell from a cart upon his head. This caused him no great suffering at the time more than faintness, but soon after he had another convulsive fit, which lasted upwards of an hour. He has been gradually becoming incapable of following any employment since that time, owing to weakness, pain in the head, and occasional giddiness, and within the last three months he has been subject to what he terms fainting fits, which differ from the others in being of shorter duration, and there being no struggling, but the loss of consciousness being equally complete. They have recurred generally three or four times a day, but he has continued for several days, sometimes a week, without any. A fortnight since he had another convulsive fit, with rolling of the eyes and foaming at the mouth; this lasted a long time. He has been attended by a medical man, who bled and cupped him repeatedly. His head has been shaved and slightly blistered; he has spinal tenderness, and the whole back has been blistered, and is now extremely sore."

"On the morning of admission he had several fainting fits; complains of pain on the top of his head, and also in his arms and legs. The pupils are dilated; pulse 96 and weak; tongue slightly furred; appetite not very good, skin moist; urine abundant, pale, and clear. Specific gravity 1015, with a slight excess of the phosphates. Says that any little excitement will bring on a fit, and he often feels palpitation before a fit comes on. Feet and hands are often cold. There is excessive tenderness of the occiput and nucha, and near the upper part of the spine, even where the surface is not blistered."

This seems to be a case of epileptic fits, brought on apparently by injuries which he had received, and we have in these fits the usual distinction to which the French have given the denomination of the *grand-mal*

and the *petit-mal*: the great fit accompanied by violent convulsions, and being to a much greater degree in fact than the other; the little fit, or what is called a fainting fit, being a loss of consciousness, but no convulsions; sometimes this fit lasting only a few minutes, and not leaving the degree of disturbance and exhaustion behind, that the great and convulsive fits occasion.

The question was, whether in this case there was any serious disease present, and it was a question that could not be answered in the first instance without further watching the case. He had incurred the risk of serious damage to the contents of the head; the fall with which he had met might have induced inflammation of the meninges of the brain, and subsequent effusion of lymph, which might be the foundation of permanent structural disease, or there might have been actual inflammatory affection present at the time. I was quite sure, however, on first seeing this patient, that a great deal of his symptoms was what is called purely nervous derangement of the nervous system, independently of any decided inflammation or permanent structural change. There was no evidence of anything like active inflammation present; there was neither heat of the head, flush of the face, beating of the blood-vessels of the head, of the carotids or temporal artery, no headache or uncomfortable feeling, increased on lying down, no contraction of the pupils or intolerance of light, and no feverish symptoms. The urine, which is a very important criterion in such cases, was not of an inflammatory character; it was pale and copious, such as we commonly find occurring in nervous cases. Further, we find that he was subject to palpitation of the heart, and exhibited many other symptoms, upon which I have not now time to dwell, of a nervous character.

Another reason which led me to suspect that the chief part of this condition was not inflammatory, and probably not dependent on permanent structural disease, was, that he had got worse, instead of getting better, under the severe and active discipline to which he had been subjected. He had been bled and cupped, and blistered extensively, yet with all this he got worse and worse; and comparing these facts with the symptoms alluded to, I was led to the supposition that the greater part of this affection was nervous excitement. Under that idea I gave him merely a soothing, sedative, anti-nervous medicine, it may be called—hydrocyanic acid, with infusion of valerian, and a dose of pilula aloës cum assafoetida every night.

The only alteration in the treatment was, that finding the pills did not sufficiently open the bowels, a day or two afterwards

I added to them a little croton oil. Under this treatment he rapidly got better, the fits speedily ceased, and in three days from his admission he was entirely free from them. It was remarkable that the excessive tenderness of the upper part of the spinal column diminished as the blistered surface got well. As he lost his fits he improved in strength, and he was dismissed on the 19th, cured for a time, but it was pretty clear that he would be likely to have a recurrence of attacks of a similar character under any circumstances which should greatly excite on the one hand, or greatly exhaust on the other. I saw him a fortnight afterwards, having had a slight recurrence of the fits, but I supposed it was only transient, for I have not heard of him since.

The next case is that of a little patient now in the house, bearing some resemblance to that just read. (Reported by Mr. Grundy.) Helen Coupees, aged 8 years, admitted June 29th, not an unhealthy looking child, of fair complexion, little colour. None of her family subject to fits. There does not appear to have been in her former history any affection connected with her present illness.

"The first symptom of her present illness made its appearance about Christmas last, in the form of giddiness in the head. The child would either run round the room, or seize anything in the neighbourhood, and complain of swimming in the head. At first these attacks excited no alarm, they occurred at irregular intervals, perhaps two or three during the day. The eyes during the attacks looked rather wild, otherwise there was nothing remarkable in the child's manner. The fits lasted only a minute or two; when they went off there was a disposition to sleep, and she continued for a month or so without much alteration." At this time you will observe that there was no loss of consciousness, only giddiness. "After this the attacks became more severe, and the mother thinks she noticed a slight twitching of the muscles of the right side of the neck and right arm. In April she became an out-patient, and was treated with the sesqui oxide of iron, half a drachm twice a day, and a dose of calomel every other night. She has taken this medicine regularly till the present time; the twitching of the muscles passed off entirely, but the fits gradually have become more severe: frequently she has fallen down and become quite unconscious for the time.

"The fits came on usually after excitement or fatigue, and were generally followed by sleep. She continued in the intervals free from any signs of illness for some time, but lately there has been an increasing weakness of the whole muscular system, so much so that at the present time she is

unable to stand alone,"—not only unable to stand, but she could not move her feet in bed, she could scarcely even stir a toe when touched, so exceedingly weak were her lower extremities; and not the lower only, for she could not hold her head up, and when lifted it fell back as if the muscles of the neck were powerless.

"No cause for the disease can be assigned. At present she complains of no pain; skin cool; bowels rather confined; impulse of the heart very strong and abrupt." This was at the time of my first seeing her. I was remarking this great strength and abruptness of the heart's action, when presently "she was seized with a fit, in which the limbs became extended and stiff, the thumbs drawn into the palms of the hands, and the toes towards the soles of the feet; the muscles of the neck became rigid, and the head fixed; the muscles of the face and eyes became involuntarily and alternately relaxed and contracted, but the jaws remained wide open. The glottis also was affected, and inspiration short and somewhat interrupted, and produced a slight croupy sound. During the fit the carotids beat violently. She recovered gradually after two or three minutes, and the muscles, which had just been rigid, were in almost paralytic weakness:" seemed in a state of exhaustion from this convulsive affection.

This fit, which I saw, was more of a tetanic character, than of the character of clonic spasm. There was some alternating relaxation of the muscles, but their rigidity was the predominant state; shewing, therefore, an approach to the state of tetanus. The remarkable exception to the tetanic state was the condition of the jaws; the jaws, instead of being closed firmly as in such instances, were widely and forcibly opened. The eyes rolled at the time, and she exhibited every appearance of being perfectly insensible. These fits recurred again and again, particularly coming on during the night. There is not the slightest reason to believe they were feigned, she is too young a child to be likely to feign; and they have every semblance of being genuine.

Now here was another case which had a very formidable appearance, and might have justified us in considering that there was organic disease. It is not at all certain that there is not, such a disease may be present, and the event alone can show whether that is the case or not. But in this case, as well as in the one before alluded to, I had the full conviction that although there might be something organic as the foundation of the attacks, yet a great part of their severity, their frequency, and perhaps their very existence, was dependent on a temporary cause, on something which had lately greatly increased: and, if so,

there was a possibility of its being removed by measures calculated to counteract or dispel such cause.

Now to determine whether there was any considerable organic disease, or inflammation, we have to consider the state of the patient in the intervals. The child, after the fits, was in a state of extreme exhaustion and weakness, more than mere fatigue; it amounted in some degree to paralysis; and this rather countenanced the supposition that there was some permanent mischief, something remaining when the fits were removed. But, except this weakness, which affected the whole body, but chiefly the lower extremities, the child did not show any symptoms of structural disease. The intellect was clear, and the faculties were intelligent; her general health did not appear seriously injured; there was no excitement or fever indicating inflammation, nor were there symptoms of organic debility; no great emaciation, or pallidity, or rapidity of pulse, or oedema. The countenance looked healthy; the appetite was good; and except that the bowels were rather costive, the other functions were not materially disordered. The tendency to palpitation, however, was present, and was observed, in many instances, to precede the fits.

The treatment that I adopted here was very like that of the last case, with this difference, that inasmuch as no antiphlogistic treatment had been adopted before her admission into the house, I thought it right to use these measures but merely to a slight degree. Accordingly a blister was applied to the back of the neck, and she was given medicine the same as in the former case: small doses of croton oil every morning, so as to act on the bowels fully, and hydrocyanic acid with valerian and hyoscyamus. This treatment, with a slight modification, we have continued to the present time. The hydrocyanic acid has been increased in quantity, and the purgative changed. The croton oil made her very sick, and it was omitted, rhubarb powder and occasionally a dose of calomel being substituted for it. Latterly she has been taking some compound colocynth pill, which acted exceedingly well, and the blister has been repeated.

The result of this treatment has been a great improvement; such an amount of it as leads me to hope that the child will altogether recover. The fits have become less frequent within a few days, and as they have become less frequent she has regained strength in the lower extremities, so much so, that for several days past she has been able to walk with very little assistance. The fits are now confined to the night, and then they do not disturb her sleep; she seems to

know nothing about them, and they are only observed by the night nurse. I think there is every probability of the disease having gone a little further in this case than in the other; that as a consequence of the frequent recurrence of these fits, either a slight amount of inflammatory effusion took place at the base of the brain, or permanent congestion, leading to that weakness of the lower extremities which puzzled all present. If we find in a few days that she does not further get rid of the fits, and gain more power in her lower extremities, we must repeat the counter-irritation, and in addition to the hydro-cyanic acid, which is a soothing medicine, I shall give the tincture of cantharides internally; for I have observed it act most favourably in such cases, either as a diuretic, or by a more specific influence on the nervous centres.

There is another case, which I do not think it necessary to read. It is that of Sarah Head. She had something like a fit approaching to the character of the others, but she is obviously a very nervous girl, and her attack had come on after continued illness accompanied by various nervous symptoms. She was brought to the hospital chiefly for a loss of power of articulation; a paralysis of quite a local kind. She was treated by medicine merely tending to soothe the excitability of the nervous system, and produce not excessive, but free evacuation of the bowels, and her voice was soon restored. She was dismissed cured nine days after her admission. There are some other cases which we have not now time to notice.

With regard to these cases, chiefly the two first, they exhibited the character of what may be called epileptic paroxysms, with some variety. The former case shews that such attacks may come on even many times in the day; that they may be accompanied by great exhaustion of the whole system, exhibit many proofs of extreme severity in themselves and in their effects on the general health, and yet be only transient: they pass off under little more than palliative measures.

This leads us to inquire what it is that can cause these attacks, which are thus so severe, and yet so transient. Any one not aware of the nature of these fits cannot but be alarmed and horrified at their appearance. To see a person in an epileptic paroxysm seems to be like witnessing the agonies of death, and death in the most appalling form; and yet after a few minutes the patients are restored to themselves—their consciousness returns, and they can tell nothing at all of what has happened. Their consciousness has been suspended at the time, and those violent contortions, which

excited such feelings of commiseration and concern among the beholders, have been mere automaton movements, in which the will of the patient has had no share; yet these fits are alarming and awful spectacles.

The paroxysms which I mentioned in a former lecture were also those of loss of consciousness to which convulsions were sometimes superadded; but after the recovery of consciousness there was left more or less of stupor, arising apparently from a congested state of the brain which remains for a time. In the cases, on the other hand, of which we are now speaking, there is a sudden loss of consciousness, with sudden and violent convulsions, lasting for a longer or a shorter time, generally a short one, and terminating almost as suddenly by a complete cessation of the involuntary motion and a complete restoration of the natural consciousness. The former fits, I before stated, bore more resemblance to apoplexy than to epilepsy, in the longer continuance of insensibility, in the slight amount of convulsions present, and in the semi-comatose state remaining for several hours before recovery. The difference from apoplexy is one of degree rather than of kind, the oppression of the cerebrum scarcely extending to the medulla oblongata; the breathing, therefore, not being impaired in a dangerous degree. Now these fits, as I before mentioned, could be well explained under the supposition that they were induced by congestion; and their successful treatment by depletion, evacuation, and derivation, countenanced this notion. This treatment succeeded, but it required some days to remove the confusion, headache, and other symptoms arising from remaining congestion.

But neither this explanation nor this treatment will apply to fits of epilepsy, such as those of Wilson and Campees. Congestion, enough to abolish consciousness, is not a state to be suddenly produced, and in the next minute as instantaneously removed: neither will congestion alone account for the violent convulsions which attended the severer form of the paroxysm. So, likewise, as to treatment, we see that Wilson had been freely depleted, evacuated, and counter-irritated, till his whole back was raw, yet the fits had increased in severity and frequency.

What is the true nature of these fits? Of what morbid elements do they consist? In the first place there is suspension of consciousness and volition; this occurs in all the fits, slight and severe; but in the severe fits, there are added convulsions; that is, exalted function of the excitatory system. These two elements, then, constitute the fits—suspension of the functions

of the brain, and excitement of the function of the medulla.

But how can we account for this interruption to the function of one part of the nervous centres, and exaltation of that of the other? Can we give any reasonable explanation of it? I think that we can, and that in strict accordance with the whole facts of the history and treatment of these paroxysms. I would ascribe the fits to the mode in which sudden determinations of blood to the head modify the circulation through the nervous centres.

It has been observed in experiments on animals, that a certain amount of pressure on the brain causes stupor; a greater amount produces convulsions also. I have seen the same phenomena exemplified in a human subject, in whom a portion of the skull was incomplete from malformation; and the fact has been repeatedly observed in hydrocephalic patients. In these experiments, the pressure impedes or arrests the circulation through the brain, and by suspending its function causes stupor: but the current of blood being stopped from going through the brain, will go with greater force and rapidly through the cerebellum and medulla, and thus exalt their functions in an inordinate degree. The remarkable anastomosis of arteries in the circle of Willis supplies the channels for this diversion of force; and I cannot but consider this a wise provision of nature, to secure to the medulla oblongata, essential as its function is to respiration, an adequate supply of blood under varying circumstances of pressure or altered circulation.

And are not the respiratory movements increased in the epileptic fit? Most certainly they are; and so far from apnoea being the cause of insensibility in this fit, as Dr. Marshall Hall supposes, it is a mere occasional and accidental matter, an epiphenomenon, caused by spasm of the glottis, which is sometimes mixed up with the other spasms. Nay, I will go so far as to say that the increased energy of the involuntary respiratory movements is a great mark by which we may distinguish epilepsy from apoplexy, the worst forms of which essentially impair them. You will stare when I tell you that I have seen more than one patient in an apoplectic fit struggling for breath by *voluntary* effort! The involuntary powers of respiration have been impaired, and the powers of sensation and volition have been not totally abolished, so that the patient feels the want of breath and struggles for it. In these cases there has been hæmorrhage in the tuber annulare or medulla oblongata.

In epileptic and hysterical convulsions the functions of the medulla are excited, whilst those of the brain are in abeyance;

and it is because among those of the medulla that of respiration is well maintained, that the insensibility of an epileptic paroxysm, however long, is not dangerous to life, as the coma of apoplexy. Has the idea never crossed you that there is a small degree of the same thing occurring in ordinary sleep? I have long suspected that sleep is dependent on a diminution of the circulation through the brain, and a corresponding increase through the medulla: the sensorial functions are more or less suspended: the medullary functions are exalted. Hence the contraction of the pupil. Hence the sufficiency of the involuntary movements for respiration, now the sole means. Hence the greater liability to the occurrence of spasmodic and convulsive attacks during sleep, as instanced in the girl Coupees. Hence the superior hypnotic influence of moderate doses of opium, which exalt the medullary function at the same time that they impair the cerebral. Hence, too, the wakefulness often caused by hydrocyanic acid, which remarkably impairs the functions of the same medulla. But I want further and more direct proofs, before I can confidently broach this theory of sleep.

Admitting the notion that fits of epilepsy and convulsive hysteria are due to a diversion of the circulation from the brain to the medulla, we see an explanation why they begin and cease so suddenly. Any one who has watched the circulation through a frog's web must have perceived that if one of the anastomosing vessels becomes obstructed by any cause, the current takes a circuit the other way as freely as if there were nothing to obstruct it; but by and by, when this obstruction, be it artificial or otherwise, is removed, then the current suddenly goes back altogether, and restores the part to its natural condition. So it is with the blood-vessels of the brain. When the causes, whatever they may be, which have disturbed the circulation in the nervous centres, and thrown the whole direction of the current through the spinal system at the expense of the cerebral system, are removed, the current suddenly becomes changed; it is rested, the circulation passes equally through the brain, consciousness returns, and the superfluity thrown upon the spinal cord is reduced.

But supposing this change of circulation sufficient to account for the phenomena, what facts have we to prove that such a change attends the paroxysms? One of the first is, that in all these cases, where there is a great tendency to the recurrence of these paroxysms, there are signs of derangement of the vascular system. The fits are, I believe, in almost all cases, palpably and obviously preceded by symp-

toms of determination of blood to the head; there is an increased pulsation of the carotids, or at the back of the head; or there is palpitation of the heart, directing increased force through the vertebral arteries. We find this illustrated by numerous cases that I have adverted to in former lectures as well as in the present. The immediate cause of a paroxysm is in general some moral or physical excitement producing violent action of the heart, particularly if the latter promotes a flow of blood to the head, such as with a stooping posture or over prolonged exertion. Many other things might be said in corroboration of the same point. The subjects in whom these fits are apt to occur are usually those who present in a very high degree susceptibility to derangement in the vascular system. They are subject to palpitation of the heart, to violent throbbing of the head, sometimes in the carotids, and sometimes in the back of the head, sometimes in other parts of the body, but chiefly near the heart itself. They are often anæmic subjects, in whom the blood is unequally distributed, being monopolised by the parts nearest the heart, while the extremities are comparatively bloodless and cold. But there are other instances in which similar fits occur in plethoric subjects, and in these I believe that congestion in the brain is a chief part; I have not time, however, to speak of them now.

There is one thing more which will require explanation. You may feel some difficulty in understanding how it is that palpitation of the heart, or violent pulsation of the carotids, can be accompanied by impaired circulation through any part of the nervous centres. In order to give an explanation of this I must refer you to an analogous phenomenon present in these cases. Generally speaking these persons are nervous and weak subjects; they cannot have an increase of the circulation in one part without other parts suffering from loss. These patients will tell you that as soon as they begin to have a fit, their feet and their hands become cold, and you may sometimes find that the pulse at the wrist is scarcely to be felt, at the very same time that the throbbing in the carotids is so extraordinarily great. Under these circumstances the force is most irregularly distributed: and the less completely filled the blood-vessels are the more irregular is the circulation of the blood. Hence, too, although the blood is beating with great force in the carotids, the force may be inefficient to set the blood circulating through the whole of the nervous centres. You will find this explanation of the different results of determination of blood to the head, in my *Principles of Medicine*. In anæmic cases in particular,

the nervous centres retain a larger proportion of blood than the rest of the body; and from the peculiar structure of their vessels, (particularly the venous sinuses, which are rigid channels), and the bony case that surrounds the whole, they cannot contract as vessels of other parts do, to adapt themselves to the smaller quantity of blood.

This monopoly of blood has two effects. If the heart is much excited, it may set the whole blood in the nervous centres in circulation; the consequences are, sensorial excitement and delirium; and this class of symptoms nervous anæmic subjects present during the irritation of reaction or fever. But in other circumstances we find, not excitement of the sensorial function, but the reverse, stupor, while the spinal function becomes exalted to the highest degree. This is because the determination of blood to the head, strong as it is, is insufficient to set in motion the whole mass of blood in the brain; the current flows with increased force by the vertebral and posterior communicating arteries to the medulla and base of the brain—hence the convulsions; whilst the blood in the hemisphere of the brain is comparatively stagnant—hence the insensibility.

The great practical inferences from these observations are, that nervous susceptibility, as it is called, and a tendency to these hysterical or epileptic paroxysms in the severest forms of such affections, depend on irregularities of the circulation, and the great indication for the cure or prevention of these attacks is the adoption of means which shall equalise the circulation—render it as equal, as steady, and yet as complete as possible in every part of the system—not to allow one part to monopolise the blood, but to take various means to ensure an equal distribution in every part.

The means by which we effect this will vary in different cases. The determination to the head is in some instances so strong as to threaten inflammation; or there may be signs of serious cerebral congestion: here blood-letting may be required, but the loss of balance generally takes place most in anæmic subjects, who can ill afford the loss of blood, and whose disorders arise, in a great measure, from this very cause. Hence depletion, although necessary in a few urgent cases, is generally an exceptionable remedy, and the object, in most instances, is to improve the vigour of the circulation, and increase the quantity of blood, rather than the reverse. But the leading indication is, to insure the equality of its distribution. Although we do not abstract blood, yet it is a clear indication to derive it from the head and spine, and we effect this by various means; to wit, by

cold to these parts, and particularly to the back of the neck, by heat to other parts, particularly to the extremities; by purgative and diuretic medicines, by blisters, or other means of counter-irritation. These remedial measures variously combined and applied are all severally useful in such cases. We attempt the same objects more habitually by various regiminal means that keep up the cutaneous and extreme circulation; by regular, but moderate, exercise; by warm clothing of the surface and extremities; by the shower-bath, or cold sponging, followed by friction and other practices which promote a thorough distribution of blood throughout the body.

We have found that the action of the heart is often much disordered; the patient is very excitable, and subject to palpitation: this cannot occur without increasing the disorder of the circulation. Remember that the increased force of the heart does not set the circulation right; for at the time that its throbs are violent in the chest, the pulses are weak at the extremities—here, in truth, is the cause of the fits. It is therefore an object to prevent these attacks of palpitation; this is one reason why I gave hydrocyanic acid, digitalis, henbane, and valerian; and most valuable they are. I do not know any medicines which are so successful in diminishing epileptic or hysterical convulsions; reducing its irritability, and acting as they do by tranquillizing the action of the heart, preventing those bursts of violent movement which derange instead of promoting the circulation.

Another indication will be the removal of all causes of excitement that set the heart in inordinate action—moral emotions, over-exertion of any kind, any irritation of the alimentary canal, of the uterine system, of teething. Infantile convulsions come from similar causes; they cluster together as a group of the same class. Any irritation which sets the heart in violent action may bring on paroxysms. I maintain that these sudden attacks are brought on mainly through an irregular distribution of blood dependent on a violence of action or a determination of blood from some similar cause. Teasing and irritating measures often do harm in this way. For example, Wilson's fits seem to have been increased by severe counterirritation; and they soon ceased under a soothing plan.

Lastly, there is a further indication to improve the tone of the whole system of blood vessels. There are some cases in which we find a beating in the carotids and subclavians, and fits ensuing as a consequence and we cannot perceive that there is any palpitation of the heart. It is not that the heart acts more strongly, but a loss of tone takes place in the great arteries. They become unduly large,

and let the current of the heart's force into them in too great a measure, causing a determination of blood. This takes place in an atonic state of the system, and is generally connected with other symptoms of loss of tone—weakness of muscles, depression of strength, liability to flushings of the face, loss of power and heat in the extremities, and so forth. It is a great indication in such cases to improve the tone of the system; and it is under this head that we may notice the operation of what are called tonic remedies. This is a very large class; some of these remedies do not appear to be stimulant at all; they seem to have very little operation besides being tonic or promoting the tonic contraction of animal fibre. Such, apparently, is the operation of nitrate of silver, sulphate of zinc, sulphate of copper, and some others. These are amongst the most useful remedies in diminishing the tendency to these paroxysms; and I suspect they effect it in the manner I have just surmised.

But there is another class of remedies still more useful, and I believe they are more useful because they promote the restoration of the natural circulation in a double mode—I mean chalybeate tonics, mineral acids, bark, quinine, &c.; but none stand so high as the preparations of iron. They improve the tone of the blood-vessels, and operate as astringents. None is so useful under such circumstances as the tincture of muriate of iron. In other cases the other forms of iron may be preferred, but in these cases, where there is palpitation of heart and failure of circulation, the muriated tincture of iron is the best I know. And there is another operation beside that of increasing the tone of the animal fibre, namely, the restoration of the proper quality and quantity of the blood; and by effecting this the inequalities of circulation are also reduced. I have stated in the present lecture that these inequalities are usually connected with *anæmia*. In proportion as that is removed, so the vessels are better filled with blood of a better quality—more abundant in red particles, and in proportion as it is better circulated to the extremities, less expended on parts near the heart itself, in that proportion will the tendency to these fits or other evil results connected with irregular circulation diminish. Hence we find that although by hydrocyanic acid, digitalis, and other means of tranquillizing the circulation, in the first instance we can best prevent a recurrence of these paroxysms, yet we produce a permanent cure best by the tonic class of remedies. They improve the tone of the body, the condition of the general circulation, and render the heart's action more effectual for this purpose.

LECTURBS

ON CERTAIN

METALS & METALLIC PROPERTIES.

Delivered at the Royal Institution,

BY PROF. FARADAY, D.C.L. F.R.S. &c.*

IV.—May 3d. 1845.

Speculum metal. LEAD, density. Manufacture of shot—softness—crystallization—elasticity—oxides of lead—manufacture of glass—action of water upon lead.

IN the last lecture I omitted to make a remark upon a speculum that was placed before you. Speaking of bronze, I said that it was an alloy of copper and tin; speculum is also an alloy of these two metals. Bronze was the hardest and toughest substance which the ancients knew for making cutting instruments; yet this alloy (speculum) made of the same substances, (with a little arsenic) but in different proportions, is as brittle as glass. It is not so much with the view of illustrating its properties as a highly reflecting body, as to show the extraordinary contrast with respect to brittleness and toughness that I now refer to it. I believe that a plate of glass would resist a pistol shot better than an enormous plate of metal, consisting of an alloy of copper and tin in these proportions. The difference between the toughness and brittleness of this alloy, and of bronze, depends upon the relative quantities of copper and tin.

Now, with regard to LEAD, the subject which is to claim our attention to-day, there are certain properties common to it, and to other metals, while there are other properties peculiarly associated with it of a most useful character. Here is a specimen of crystallized lead, which I have placed in a glass, and left there for the purpose of showing the pure tint of the metal when free from the contact of air. It is very different from tin, which is a white metal; the colour of lead is *blue*. It is heavy amongst metals, its specific gravity being 11.35, and is fusible at a moderate heat. These two properties of weight and fusibility are applied in all metals, but especially in the case of lead, to useful purposes. One application of heavy bodies, and for which lead above all others is useful, in consequence of its gravity connected with its fusibility, is for projectiles. I have before me a specimen of a projectile from the battle of Navarino; it is in union with one of the timbers of a British ship. It is a good illustration of the force with which a ball can become embedded in timber, without entirely destroying the latter.

Lead is used very extensively for the manufacture of projectiles. Whatever may be the object, the projectile should have that degree of momentum and power which is fitted for the particular occasion. This requires two conditions; at one time you want a large shot which is dense and heavy; at another, a shot which shall be heavy and small. A heavy shot will go further than a bulky one: for this reason shots are cast partly hollow at the centre, and when the object is to increase the distance which they are capable of being carried, they are filled with lead to make them heavy. The specimen before you is, I believe, the largest sized ball that is used of lead; above that, iron is employed, or iron filled with lead. I should hardly think it worth while to illustrate these points of the philosophy of metals, were it not that there are many facts of daily interest connected with them.

I shall now direct your attention to the circumstances under which the weight of this substance is important. Where we have two things of different size and gravity, it is obvious that they will differ in their effects as projectiles, and still more when you come to examine the variation with respect to softness and hardness. But my present object is simply to state, that lead is valuable as a shot or projectile, because it will go easily through things that will resist other substances. I should find it impossible to throw a pea through the paper screen behind me, but such is the force of lead that it goes through it at once. You perceive that on throwing a few peas and shots put together at the paper, all the peas come back, whereas all the pellets of lead have gone through.

Hastening to the results of this action, I may say that a man may readily cast bullets in moulds of the kind before you, and lead being easily fused, no other substance comes out so well. If I want to make a ball of a given size, I can melt the lead for it, pour it out, and it becomes at once of the shape that is required for the projectile. The ball when cast forth, does not break into fragments, but keeps its sphericity, answering every purpose of a projectile. But there is a very beautiful process which is used for the purpose of making smaller kinds of projectiles which we call shot; and there is so much interest about the manufacture of lead shot, that I will illustrate it. A very important point is, that the shot should be perfectly equal in size, and perfectly round in form. These properties are given to them by the process, not of casting, but one that depends on the mutual attraction of the particles one to another, as some say; others assert, by the attraction of the surface, or a kind of capillary attraction. In making these shot, the object is to let the

lead ooze through a little hole so slowly that it shall hang by the smallest neck, and then its weight is sufficient to make it drop off in a liquid state, and the beautiful form depends on this circumstance, the globule being in the air the particles exert attraction one to another, and it assumes a spherical form; this drop of lead is allowed to fall through the air. I shall make a rough experiment in order that you may see the manner in which it oozes out. There is a kind of sieve with holes in it which is placed at the summit of a tower 150 feet in height. A large drop must fall through a vast portion of air before it becomes solid; if the globule be small, it need not fall so far. You have seen those lofty structures near Waterloo Bridge. Shot manufactories are usually made of that height in order that there may be depth enough for the shot to fall through the air, and become cool before they get to the bottom. Below they have a tub of water into which the shot falls. They proceed very carefully as to the temperature of the lead. They first of all take a great quantity of such rubbish as I have here, which they disperse and spread about the bottom of the cullender. This cullender is then filled with melted lead; the lead goes through quietly, and at last a beautiful result is obtained. You observe that on pouring the lead through this cullender, successive drops pass through, after the others are delivered. If I hold a plate at a certain distance from the cullender, I then get a splash of lead; if I go lower, I get something like a shot, and according to circumstances—the temperature of the lead, and so on,—will be the result. By the time the lead passes to the bottom, we have a certain temperature, not too hot nor too cold, and the splashing of the metal which you before saw does not take place. The shot take their form not from the water into which they drop, but from the air. Although I have only a fall of five feet, some of these shot are not badly formed; of course if I had had fifty feet fall they would have been made ten times as well. Were you to look up one of those towers from the interior, you would think it of a most enormous height—for in looking up a narrow circular space the height becomes magnified under the eye, and you would there see a little shower of shot coming down, which the cullender is delivering off into the space below. So true is the descent of the shot, that they fall quite perpendicularly, and are all collected within a very small space. The shot, after falling into the water, are taken out in this round state.

I must no longer detain you on this subject, except to point out the mode in which the bad shot are separated from the good. They take a board, incline it, and place the

shot upon it. If it be a true sphere it will run in a line round the inclination, but if there be any irregularity it will not run straight down, but obliquely, and in this way a very correct division is made between the good and the bad. They have a still more beautiful process by which they have recently separated one shot from another, and which depends upon this; the truer the shot is to a sphere, the more momentum will it acquire in passing down an inclined plane. The shot are delivered upon a table of this kind; those which are true speedily overshoot two given marks, but those which are not quite true overshoot one mark, and do not reach the other until some time after, during which time the table is raised.

Let me now take you to the *softness* of lead. Lead is a very soft metal, and I do not know that I can better illustrate comparative softness and hardness, than by taking two or three pieces of metal, and comparing one with another. Lead is so soft that I can scratch it with my nail. If I take a sovereign, put it between two smooth plates of lead, lay it on an anvil, and give it a smart blow, I shall make no sensible effect on gold, silver, or other substances, but I shall obtain on the lead a good impression of both sides by a single blow. The edges of the impression are nearly as sharp as in the original coin. There are before us a number of illustrations which show the softness of lead.

This leads me to another point. Here is a cannon-ball such as is now formed, and is meant to be used thus. Through a hole the cavity is filled with leaden bullets, gunpowder is then introduced, and a fusee, after which it is fired off in the usual way, goes a certain distance, and then the gunpowder is inflamed. In experiments made at Deal some of these balls were thrown with gunpowder, and look at the effect. The lead shot was put in, the shell made up, but when picked up after it had been fired, the lead shot were found all knocked together, and by the softness of the metal they had formed one coherent mass. The blow given by the gunpowder on the shell drives it forward with such power as to overcome the *vis inertiae*, and the lead is packed at the back of the shell by the blow it receives in the chamber of the cannon; consequently in all these cases you find the mass of lead, consisting of numerous shot fixed in one large lump at the opposite end. I have broken some part out of the mass in order to show what shape the balls take, when fired off altogether like the shot in the Shrapnell shell. This fact illustrates the comparative softness of lead. It is impossible to cast a bullet in a mould of the kind before you without leaving an empty space or *vacuum*

within. Cut any bullet across its axis, you are sure to find a hole; and, indeed, the act of cutting also illustrates the softness of the lead. I have made a section of one of the bullets before me, and you observe that there is a hole into which a pea could be introduced, and that, not at the centre of the shot, but at one end, destroying therefore its equilibrium, throwing the centre of gravity out of its proper form, and thus causing it to take an irregular course when discharged. On this account they now take advantage of the softness of lead, and make bullets by pressure; and here is the apparatus by which it is done. The lead takes various forms until true bullets are obtained, which have no aperture within them, but which often have an octagonal form, by which they are rifled more beautifully than those that are spherical.

I have obtained a plumber's vice in order to illustrate the softness of lead. The plumber wants lead of this kind for cathedral and cottage windows, and many other purposes. He requires an opening down the middle, and two projecting plates on each side, that he may let in his panes of glass. They are let in very easily and held very firmly. He has here a substance which he can cut off, solder, or do anything with that he pleases. The plumber gets the lead of the shape he wants it, partly by its fusibility, and partly by its softness, and finishes it off by this vice, consisting of two wheels within, which are meant to go into the depression, and then there are two cheeks intended to confine the sides of the lead, and make it a cutting instrument. If I put this piece of lead in the side of the instrument, and then put a piece of lead through not quite so large, you will perceive how beautifully the workman applies this principle of the softness of lead, and brings through the machine precisely what he wishes. There is in this operation an action both of wire-drawing, and compressing the edges. The wheel lays hold of the lead and pulls it along by the edges; the cheeks will not give way, and it is therefore wire-drawn between the cheeks, rolled between the wheels, and comes out of the form he requires. These strips of lead are what he carries about with him from place to place and uses. If, through the softness of the lead, he gets it wrong, he can, owing to the same property, make it right again. If I take these strips of lead with all their irregularities, owing to their softness, I can make them straight and perfect as they were in the first instance. Lead applied to cathedral and other windows has great power in resisting corrosion from the atmosphere on account of the adhesion of a superficial coat of oxide.

Lead is more crystalline than mica, or calcareous spar. I have in the bottles on the table a few illustrations of the crystallized state of lead. They would require half an hour carefully to examine them; these arborescent plates are crystals all partaking of one character, and are exceedingly beautiful. They are formed by the chemical action of a solution of a salt of lead, which is decomposed by a piece of zinc above, but the point I wish to illustrate is, the crystalline form which the lead takes. I have lead here that has been fused in a ladle, and on pouring it off we have crystals, but they soon go dull and lose their beauty, except to him who looks very closely at them. Here is a mass of small crystals of lead procured in separating lead from silver by fusion and crystallization. Here are other specimens also illustrating the crystalline character of lead.

A great many metals are crystalline; for example, bismuth and copper, of which there are very fine specimens before you. Antimony, copper, gold, silver, and platina, are all crystalline. Some divide with great facility in one direction, and resist in another. I cannot pull them in one way, but I can separate them in another. But this is not the case with lead or malleable metals; when crystalline, the slightest exertion tends to pull the parts asunder. They give way, and the strength of attraction appears to be the same in all directions. Curious experimental investigations have been carried on with regard to the crystalline property of the metals.

Had I time, I might dwell much on the adhesion of the particles of metals. If I take a piece of lead, and give it a certain shape, and then move it a little on, it will come back by its own elasticity. Unless it could do so, you could not have a sonorous body. Here is a leaden bell; you may ring it in a certain manner, and it has the power to return by a series of vibrations producing sound. If I took silver I could produce a louder sound, its elasticity being much greater than that of lead. There is another point about the attraction of particles that I must mention. It has been said, when the metals have been beaten, or pressed, or hammered, they have the power of contracting to a smaller space when the original force is removed. I do not know of an instance where this holds good; nor do I know that there is an instance of pressure reducing an absolute solid compact body to a smaller bulk at one time than another; but in metals this is said to be the case. I have made inquiries on the subject at Woolwich; they deny that it ever takes place, though I have stated in this room that it does; but I am informed by the officers there, that the specific gravity of

lead subjected to high pressure, is not greater than that of lead which has just come out of the mould.

There is a singular point about the casting of lead, which is, that when lead has been recently cast it has its maximum hardness, and those who make leaden pipes, bullets, or shot, always find themselves obliged to let the lead remain six or seven weeks in order that it may get soft, and they are then able to work it much better. This is owing to a singular property in this metal which we do not understand. At the lead works at Waterloo Bridge they make leaden pipes simply by the compression of an enormous mass of the metal. The pipe is made to almost any size and length, and nothing limits it except the capability of giving it pressure through a mould, to impart to it form; they make the lead hot in the first instance, after which it is left to get cold. There are many curious points about the cohesion of metals when hot and cold; I must not dwell on these, but take those subjects which are of more importance.

In the short time that remains I must bring before you some of the general effects that result in consequence of the relative attraction of lead for oxygen, chlorine, and other bodies. When lead is first cast, it is bright, and when we keep it, it takes that blueish-white tint which every body recognizes to be the colour of lead. Its surface then presents a thin film of the compound of lead with oxygen, which is so retained in its place by the subjacent lead that it does not leave it; and it becomes a plaster, or a kind of varnish, on the surface, protecting it from further chemical action of the same kind. When lead is prepared in a peculiar way, it burns more brilliantly, and with more violence, than phosphorus. Here is an experiment which shows the powerful affinity of lead for oxygen; and its affinity for chlorine is equally great. Take a compound of oxide of lead with a vegetable acid (the tartaric), and form a salt which we call the tartrate of lead. If we put the salt into a glass tube, and heat it to a dull red heat, the tartaric acid will become decomposed, and nothing will be left in the tube but lead in fine division, mingled with vegetable charcoal. When the lead is thus prepared, we observe that it has a very strong attraction for oxygen. It is not one part merely that becomes oxydized, but every particle of the metal can be exposed to oxygen at once, and the probability is that this compound will take fire and burn the moment I open the tube. You observe the combustion; it is the lead that is burning, and it will set fire to the paper, and form white fumes very different from anything you have hitherto seen. The fumes that are going up are the

result of the oxydation of the metal. The lead and the charcoal are both burning by simply exposing them to the oxygen of the air at common temperatures.

We will now see what happens when the powder is thrown into pure oxygen, and what kind of combustion takes place under these circumstances. This substance (calcined tartrate of lead) is a fire-work of a better kind than any I can shew you. [The most intense combustion ensued on the powder being projected into a vessel of pure oxygen.] Here is yellow oxide of lead formed, which was discovered long ago, the first or protoxide of lead. What can surpass the affinity of the metals for oxygen, or their claim to be considered combustible substances, when an effect like this is produced with lead? The same effect takes place, not only with lead, but with iron, zinc, and other metals, modified only by the state of the body.

I have forgotten one experiment that I should have mentioned before; it is connected with the chemical affinity of lead for oxygen, but I will see if I can bring it into effect before we part. I put into two dishes sheets of clean lead as nearly alike as possible; to the one I add a little distilled water, and to the other a little common water—such water as comes into cisterns that are made of lead. The fact which I wish to bring out is the difference in the chemical action in the case of pure water and water containing the ordinary saline substance dissolved in it.

With regard to lead, it forms three oxides. I am not about to bring before you a history of these oxides, but to illustrate the fact of their production. There is the protoxide, the one produced when lead burns in the air; then there is the substance commonly called red lead, which is another preparation having distinct properties; then there is a third compound, the peroxide of lead, which also possesses different properties. These three oxides differ in properties solely in consequence of the different proportions of lead and oxygen which enters into all of them. Referring to a table of equivalents presented at the last lecture, we will call the number of lead 104. Although lead is so active in taking oxygen from the air, it by no means takes the largest or the smallest quantity, the same quantity of oxygen takes 104 parts of lead, nearly 200 of gold, 23 of iron, so that lead is midway between those metals which have the greatest and least affinity for oxygen. Mercury can displace silver by taking away oxygen; copper can displace mercury, while lead, zinc, or iron, can displace copper: so I might go on through a series of chemical decompositions, showing that one metal has more affinity for

oxygen than others. Notwithstanding the strength of the affinity of lead for oxygen, we can easily take it away from its compounds with that body by introducing a piece of zinc.

Amongst the compounds of lead there is one rather important, because it enters into the composition of what we call flint-glass—glass that is striking for its lustre—in the manufacture of which Great Britain has succeeded more than any other nation. Our flint-glass is carried to high perfection, and it owes its weight, and a great deal of its brilliancy and refracting power, to the lead which it contains. Here are two or three bottles made of flint-glass, and from the lead contained in them, they have lost their transparency, and become black by the action of sulphuretted hydrogen which has been kept in them. I will show you the result of making a highly refracting glass, in order to point out the lead in it. These glasses are alike in composition, and both contain about two-thirds the weight of metallic lead; the silica and the borax do not make up more than one-third. It is a little of that lead which, being brought out and accidentally reduced to the metallic state, forms those beautiful dark lines and curves in different parts of the glass. These veins render it objectionable for optical uses.

Then, again, we have certain compounds of lead which are valuable as a basis for colours. I will present one or two, because they are much used for this purpose. One of these is white lead, the fine pigment used by the painter, which, though objectionable for one reason, that is, its changeableness, he nevertheless employs. He gets effects by the use of white lead as a medium for other colours that other substances will not give him, although they are white, and remain so a much longer time. I have here oxide of lead dissolved as a salt, and if I add an alkaline carbonate, I shall have carbonate of lead produced. It is here formed in a humid, and there in a dry way, by placing the metal, under certain conditions, in contact with air, water, and surrounding bodies yielding carbonic acid. Another body is the iodide of lead, which is a beautiful pigment; you will recognise it as one of the colours used in painting. I will show you a third kind, and here I am obliged to use a substance of an offensive odour, namely, sulphuretted hydrogen. If I take pure white lead, and bring the solution containing sulphur near it, such affinity has this body for sulphur that we shall immediately have the combination I am about to show you. You see the extraordinary change caused by the production of sulphuret of lead which takes place from the action of sulphuretted hydrogen. It will turn every salt of lead black, or even to a metallic

lustre. What was white becomes black; and in this way the change in affinity is shown. Now, we depend upon these effects for the detection of lead; there is no process more delicate to show minute portions of the metal. I have here put metallic lead under the ordinary condition of action in contact with air and water, and I will try whether I cannot show you the difference which has taken place by this test. Lead, by its fusibility, softness, malleability, and durability in the air, under common circumstances, is able to be applied to the manufacture of cisterns or pipes to any extent; we keep water in the former, and have a supply of water through the latter. If the water be pure, and the lead pure, a chemical action takes place that might, under certain circumstances, be of the most deleterious kind. I have put, as I have said, into one dish a portion of clean sheet-lead, and covered it with distilled water; into another, a portion of clean sheet lead and common spring water, and we find, it may be to our surprise, that the distilled water acts on the lead, and the lead on the water, and that a series of changes are going on from the lead combining with the oxygen, and in a certain state the combination becomes dissolved in water. Here we have a specimen of the crystals of the hydrated oxide of lead thus produced, and the metal forms other compounds after the first action has commenced: but what I am desirous to point out is, that this change never takes place in lead when common or ordinary water is used. Here are two bottles that were prepared Aug. 12, 1835. One contains common spring water, and there is a little deposit, but the water is free from lead. The other contains distilled water, and there is the third of an inch of carbonate of lead deposited, and the metal is much more acted upon. The air has not been entirely excluded, and you see the relative effects that have gone on. In the experiment, which has been going on only for a quarter of an hour, far more lead has been taken up by the pure water (distilled) than by the impure (the spring water). This experiment shows that if pure water were supplied to us by nature, it would be injurious to health, and, for this reason, among many others, that it would become poisoned by being kept in leaden cisterns, or transmitted through leaden pipes.

COMPLEXION OF WOMEN SUFFERING FROM CARCINOMA UTERI.

It is perhaps worthy of notice, that in thirty-three cases of carcinoma uteri occurring amongst my out-patients at Guy's, twenty-three of the women were of dark complexion.—*Dr. Ashwell on the Diseases of Women.*

Original Communications.

NOTES OF OBSERVATIONS IN
SURGICAL PRACTICE.

By ALEXANDER JOHN HANNAY, M.D.
Surgeon to the Glasgow Royal Infirmary.

I HAD thrown together the following notes of certain points in surgical practice, for the consideration of one of the societies of this city. Whatever may be the value or interest of these points, in the estimation of qualified judges, I have been induced to deem them worthy of being laid before the profession; and it may be, that the practices they inculcate are not unworthy of adoption.

The topics are:—

1st. The use of a roller or bandage carefully and firmly applied, in diminishing the quantity of blood lost in amputations of the extremities.

2d. A method of shortening the painful dissection back of the flap or cuff of skin in circular amputations of the extremities, particularly of the thigh.

3d. Rule for our guidance in the use of stitches in keeping together the edges of a flap after amputation.

4th. The benefit of administering an anodyne a short time before the first dressings after amputation.

5th. The treatment of fractured ribs by broad straps of adhesive plaster bound firmly round the chest.

6th. Ruptured tendo-Achillis; a novel, simple and successful way of treating it.

On the use of a roller or bandage carefully and firmly applied in diminishing the quantity of blood lost in amputations of the extremities.

To diminish the loss of blood in amputation is a point of the highest importance. The well-informed surgeon knows how anxious the profession have ever been to attain this; the experienced surgeon also knows how bitter and how serious are the consequences of the loss of blood, even of very moderate amount, occasioned by amputation—how severe the shock induced thereby to the system, and how vehement and exhausting the reaction which succeeds to the depression. From amputation affording the only chance of saving life,

we are often called upon to hazard the risks attached to it, in persons who have already lost nearly as much blood as the frame can tolerate, or who are reduced to the lowest ebb by profuse and protracted purulent discharge, and by colliquative secretions. To save a few ounces of blood in such cases is of vital importance,—the life of the patient depends on it;—and certainly the energy of the economy in working out a cure, and in bearing up under the severe shock inflicted by the removal of a large member, is manifestly and seriously affected by it. Experienced men, then, will hail with satisfaction every piece of practice calculated to secure in any degree an object so important, as the saving of blood in the amputation of the large extremities.

The tourniquet was with this view uniformly had recourse to; and certainly its power in arresting arterial hæmorrhage when properly adjusted is complete. But it must be obvious, that by the pressure of its strap on the large venous trunks, high up in the limb, these vessels and their smaller tributaries are gorged. A considerable additional amount of blood is consequently lost. I am confident that in amputations in which the tourniquet is applied, the loss of blood from the venous trunks, is manifestly augmented. All this additional bleeding may be spared, and the arterial loss as certainly prevented, by the substitution for the tourniquet of pressure by a skilful and experienced hand, which, when it can be had, should in my humble opinion always be trusted to. Still the hand that undertakes to arrest bleeding in these circumstances should be a skilful one, one practised in this very manœuvre; and I acknowledge that some time ago I had a very cogent lesson on this point. Trusting to the hand of an assistant, either careless or unskilful, I found that, in that instance at least, I had been much better served or assisted by a well-applied tourniquet. I believe it almost unnecessary (in this city it is quite unnecessary) to say, that the assistant alluded to was not any one of my very able and esteemed colleagues, with whose assistance I should feel myself secure in the performance of any operation I am ca-

pable of performing. But, besides the above well-known and now generally adopted piece of practice, there is another, which I have conjoined with it in amputations of the upper and lower extremities, with the most unequivocal advantage in the way of diminishing the quantity of blood lost. *It is the application of a roller or bandage, very equally and neatly, very firmly and perfectly, so as to compress with all bearable firmness the limb from its very extremity up as high as the points of amputation will admit.* I had often seen, and those who do not employ this bandage will yet have an opportunity of observing, that the veins of the portion amputated are pouring out blood most copiously, often doubling I believe the quantity of blood lost; which I aver will always be saved by a tight and well-applied bandage. I may perhaps over-estimate the power of the precautionary procedure I now recommend. I cannot over-estimate, however, the end which it aims at; viz. saving the patient's blood in many cases of amputation of the extremities; to the effectual attainment of which, it is my honest conviction, the measure now advised will very powerfully contribute: conjoined with skilful manual pressure (in place of the tourniquet), it will prove as effectual as the nature of things will admit. The roller must, to be serviceable, be applied carefully and exactly, carried up the limb from its extremity with perfect equality of pressure. I usually apply it immediately before the operation, and when the limb can, without much inconvenience, be lifted up above the level of the body, whereby the veins may be kept during its application, in as empty a state as possible. I cause it to be held in that position when applying the bandage.

There has occurred to my mind one objection to the practice in question, and I admit that in some cases there may be some weight attached to that objection. When the limb to be amputated is inflamed, and consequently very painful, it can ill bear sufficient tightness of the bandage; I have seen the roller occasion considerable distress in a few cases; but I hold that the inestimable advantage of saving blood secured by the bandage more than outweighs the above objection,

which moreover is speedily removed by the amputation.

II.—*A method of shortening the commonly tedious and most painful dissection back of the flap or cuff of skin in circular amputations of the extremities, particularly of the thigh.*

There is no part of the circular amputation of the thigh, for example, so painful as the dissecting back a sufficient cuff of skin, and unfortunately it is at the same time the most tedious, as well as the most unseemly part of the operation. Any plan calculated to shorten it, to expedite this part of the operation, must be a great improvement. When an assistant at amputations performed in this way, I always felt a desire to have a scalpel in my hand, and to dissect back one side, whilst the principal operator was accomplishing the other. I now invariably put this into practice, requesting the person assisting to dissect back the cuff of skin on one side, whilst I am doing the same on the other; thus is the most painful and most tedious part of the operation shortened by one half. The practice is therefore, in my opinion, worthy of imitation.

III.—*Rule for our guidance in the use of sutures or stitches in keeping together the edges of a flap after amputation.*

On this point there was much difference of opinion, and I am not aware that the point is yet settled on any firm or satisfactory principle; whilst some employ them in all cases, others as constantly reject them. Both these extremes are bad. There can be no doubt that union takes place more completely, more speedily, and more surely, when stitches are used in cases properly admitting of their introduction, the characters of which I shall immediately proceed to shew. At the points where they are introduced union is often speedy, perfect, and permanent, and at these and no other points has union been effected. On several occasions I have often regretted that I had not put in a few more of them: but I have been taught that they are not proper in all cases. I was early in my professional life prejudiced against the use of them by a

very untoward case in which they were used. A strong muscular Irishman had his foot and ankle crushed, so as to require amputation; this was performed by a very skilful and dexterous hospital surgeon, who adopted the flap operation. He made a large flap of the very muscular calf: the skin was rather scanty for the mass of muscle, and when brought over the muscle, the skin was put on the stretch. The surgeon attempted by a few stitches to keep together its edges, which could be made to meet by much dragging, so that when sewed the skin was much stretched, and rather tense; consequently, the stump became inflamed with much pain; great constitutional irritation with nervous symptoms ensued, and death was the result. Since that period I find that whenever stitches are put in the edges of flaps that are rather short, and so made to effect a stretching or dragging of the parts, they are inevitably mischievous.

I therefore offer it as the result of my observation, that when a flap is of sufficient length to meet without the least dragging or stretching, then and there are stitches beneficial, and seldom to be omitted; but on the other hand, if the flaps be scanty, and if the employment of a stitch would keep them on the stretch in the least degree, then will they prove mischievous, and should not be employed. I need hardly say, that the introduction of the stitch through the muscular structure of the flap is never admissible. I am pretty sure that I once saw a stitch which was introduced so as to pass through that tissue produce the most serious evils.

"But in this and in all other stumps, the approximation of the lips (by stitches), will depend upon the laxness of the skin, and the quantity preserved by an artful double incision; for the skin must not be drawn together so tight as to put it upon the stretch, lest it should bring on an inflammation and pain.—*Sharp's Critical Inquiry*, 4th Ed. p. 286.

IV.—*The benefit of administering an anodyne a short time before the first dressing after amputation.*

The first dressing after amputation of one of the large extremities often inflicts a very serious shock on the system, which we should try to miti-

gate. And here I acknowledge my obligations to my former colleague, Dr. Pagan, for an important hint in reference to the subject under consideration: that skilful and experienced surgeon always gives, as he informs me, an opiate after the dressing is finished, and with manifest advantage. As it is some time before the opiate takes effect, I have usually given the opiate (a rather powerful one) thirty or forty minutes *before* proceeding to the dressing, and, it seems to me, with evident advantage, the sufferings of the patient, and the shock to the system, being thereby manifestly mitigated. The administration of it before the dressing ensures the anodyne effects of the opiate much sooner after the dressing, and probably shortens, as well as mitigates, the distress occasioned by the process, as well as its depressing effects on the æconomy. My observation of the good effects of the practice, leads me to have recourse to it in the first few dressings after amputation of the large members in every instance; and respectfully to recommend its adoption from the benefit and comfort it secures to the sufferer. The anodyne should, to derive all the benefit it is capable of securing, be given fully half an hour before the dressing be proceeded with.

Since I wrote these remarks, I chanced to look into Van Swieten's Commentaries on the Aphorisms of Boerhaave, and found there a strong encouragement to the administration of a narcotic in such cases. Van Swieten directs the administration of it before the amputation, on the same principle as I have advised it before the first dressing. "Narcotic remedies," he says, "may be, therefore, of the greatest use, exhibited an hour or two before the operation; but this not with a view that, by laying the patient asleep, he might be insensible of his pain (for to give opium in such a quantity would be extremely dangerous), but only to remove, or at least to diminish, the fear of the present operation." Sect. 469. This quotation is part of a disquisition on amputation, which I was little prepared to find in a medical work, and from which not a few appear to me to have borrowed freely. I cannot say what benefit others may derive from a perusal of it, but I have read it with deep interest and much improvement.

V.—*The treatment of fractured ribs by broad straps of adhesive plaster bound firmly round the chest.*

The simplicity of the following method of treating fractured ribs may excite a smile among professional men, but I know it has effaced many a look expressive of pain and distress, nay, even agony, caused by the accident in question. The utility of a tight bandage in restraining the movements of the ribs (the cause of pain where these bones are broken) is well ascertained. But the material, (cotton, linen, or flannel), usually employed, relaxes, glides over the surface of the chest, presses unequally on the points of that division of the body, and often fails to mitigate the patient's distress. For many years I have made use of adhesive strap as the restraining girdle around the chest, and with happy effect. The following is the mode of applying them:—I cut the most adhesive and best made Diachylon plaster I can procure into strips four inches and a half broad, and of sufficient length to surround the thorax with a tail, which, after meeting around that cavity, will reach fully a foot beyond the point of meeting. I place the patient in a warm apartment, and close to a good warm fire, so that the plaster may be readily and thoroughly warmed, and kept perfectly soft during the application of it. Having ascertained the seat of the fracture, and having the plaster thoroughly softened, I place the middle (the sailor would call it the bight) of the strap on the fractured points. An assistant and myself each pull the ends of the strap very tightly, whilst another assistant supports the patient by preventing him from yielding in the direction we are drawing the plaster. The patient also empties his chest by expiration as forcibly as he can, at which conjuncture the strap is brought in contact with, and made to adhere to the chest, encircling it tightly all round; the ends are crossed over each other. This first strap, or girdle, is followed by a succession of them, laid partly over each other, or imbricated: each strap should cover a third of the width of the one next it: they are applied in the same manner as the first, which, in the end (from the straps reaching up to the axilla, and down to the lower part of the chest, compressing that

cavity powerfully), becomes slack, and another one is required to be put round over it. I then, to secure the firm and complete adhesion of this cuirass of plaster at every point, smooth it over with an Italian iron sufficiently, but moderately, heated.

I have now adopted this practice for many years in private, and have taught it to the pupils of the Glasgow Royal Infirmary, some of whom, with myself, can bear testimony to its facility of application, and its perfect efficiency. It is immediate in its relief, and does not generally slacken till its support is no longer needed. I need hardly add, that it enjoys its advantages from the adhesion every where diffusing, over the whole surface of the chest, a most equable pressure; whereas the sliding bandage usually employed comes to press most on the prominent parts, and is therefore inefficient. Besides, the stiffness of the strap affords a certain and very suitable amount of support which the bandages hitherto employed to encircle the chest, do not afford. Indeed, a piece of plaster is often put on the surface over the broken point below the cinctures in ordinary use in these cases. I have just recalled to mind the circumstance which led to my adoption of this method of treating fractured ribs. I was labouring under the most agonizing neuralgic pain of the thoracic parietes during my convalescence from continued fever. Many kind professional friends who visited me suggested diverse remedies, but all in vain; the late Dr. Abercrombie at length suggested a broad strap of plaster to be wrapped tightly round the chest. It proved instantaneously and permanently effectual, and pointed out to me the value of the strap in all cases requiring a firm girdle round the chest, to check, or altogether prevent, its respiratory movements. I have employed it also in cases similar to my own repeatedly since, with like success.

VI.—*Ruptured tendo-Achillis—a novel, simple, and successful way of treating.*

Ruptured tendo-Achillis is also very effectually and completely treated by the application of adhesive straps which I apply in the following manner:—In cases of this accident, I place the foot in a moderately extended position. I then place a strap of very adhesive

plaster 2½ inches broad, and warmed, reaching from the toes on the plantar aspect of the foot, passing over the heels; it is then carried up, pretty firmly stretched, straight to the calf of the leg, and as high as the ham; it should not touch the skin over the tendon at this stage of the application. There is, at this period of the dressing, an arch formed between the plaster and the surface of the ankle, or small part of the limb. Similar straps, say two or three, are placed exactly as this one, upon it, and by its side, to straighten it. All this time the foot is kept, as at first, moderately extended, and retained in this position whilst a turn or two of a roller, or a strap of adhesive plaster, is placed round the calf of the leg, and around the dorsal end of the foot, to prevent the straps first applied from yielding. Things being thus adjusted, I apply a roller firmly from the toes up to the knee. In doing this, the plasters first applied, and forming an arch at the back of the ankle, are, by the firmly-applied bandage, pressed down, and brought into contact with the skin covering the ruptured parts of the tendo-Achillis. In this way the torn ends are brought and held in close contact, and prevented from separating in every direction, support being afforded them on each side; and all movement of the ankle, particularly its extension or flexion, being prevented, there can be no separation of the torn ends; they must lie in perfect quietude, and in apposition the most approximate for speedy union. This is accomplished with the least possible uneasiness to the patient, who can, by the help of a crutch, move about to a limited but convenient extent. I have accomplished by it several very rapid cures of the accident; it is an apparatus easily and soon procured, and its cheapness recommends it to institutions for the relief of the poor and destitute.

Glasgow, Oct. 10, 1845.

Since I transmitted my notes, I found a reference in Chelius' System of Surgery, to a notice of the treatment of ruptured tendo-Achillis by the application of adhesive strap, by Dr. Edmondston. That gentleman was the subject of the injury, and from personal experience found the inconvenience, tediousness, and inefficiency of all the methods then in use. He

applied straps round the limb; you will observe that I apply them not around, but along the limb. Our methods correspond in nothing but in the material employed. His cannot fix the foot and its motions at the ankle sufficiently; and this I regard as a great defect in his method, of which I had no knowledge till last night. Dr. Edmondston further strongly recommends the employment of adhesive straps in sprains; I can corroborate the utility of this practice. Dr. E. concludes by saying, "I have little doubt they (straps) would be eminently useful in fractures of the leg or forearm."—*Ed. Med. and Surgical Journal*, vol. xvii. p. 91.

I find, too, in Chelius' work, that Malgaigne also employs adhesive straps to the chest for fractured ribs. I rejoice to think that the practice which from its simplicity and unattractive character might pass unattended to, as of little utility, will now come before the profession supported by the authority of the above distinguished surgeon. It is a great improvement, in the cases alluded to, to employ plaster spread on pretty stout linen; it does not yield or give way as cotton cloth does.

October 17th, 1845.

AN OBSTETRIC RELIC.

IN the cathedral of Tortosa, in Spain, is preserved the miraculous *Cinta*, or girdle, which the Virgin, attended by St. Peter and St. Paul, is said to have brought down in person from heaven in 1178, and delivered to a priest. The gift was declared authentic in 1617 by Paul V., and to justify his infallibility, it works every sort of miracle, especially in obstetric cases. In the spring of 1822, the *Cinta* was brought in solemn procession to Aranjuez, in order to facilitate the accouchement of the two Infantas! Vocata parturius Lucina veris adfuit.

Montium custos nemorumq. e Virgo
Quæ laborantes utero puellas
Ter vocata audis.

In all ages and countries, where the science of midwifery has made small progress, it is natural that some spiritual assistance should be contrived for perils of such inevitable recurrence as childbirth. The panacea in Italy was the girdle of St. Margaret, which became the type of this *Cinta* of Tortosa. This was resorted to by the monks in all cases of difficult parturition.—*Ford's Spain*. The power of the mind over the body will account for the miraculous effects of the *Cinta*.

ILLUSTRATIONS OF THE
INTEREST AND IMPORTANCE OF
THE STUDY OF CASES OF SUDDEN
OR VIOLENT DEATH.

BY ALEXANDER HARVEY, M.D.

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[Concluded from page 1103.]

IV.—*Of the study of cases of violent death, as illustrative of the agency of the remote or external causes of disease.*

It is unnecessary to dwell on the great practical interest and importance of this part of the history of diseases, with a view to the *prevention* of these, in individuals and communities, by the *avoidance* of their external causes. It is a subject, however, which is open to many sources of fallacy and error, and the investigation of which is beset with peculiar difficulties. Mankind in general are apt, in regard to it, to err on the side of credulity, and went on all occasions, and with the utmost confidence, but often on no better ground than that of *post hoc, ergo propter hoc*, to attribute diseases to circumstances in any respect special or peculiar which may have recently or immediately, nay, at any time, preceded their occurrence. Not a few medical men, on the other hand, go to the opposite extreme of scepticism, and refuse to acknowledge the existence or the agency of many of the assigned or supposed causes of disease, however well established, by long and varied and seemingly accurate observation, their reality may appear to others.

It is not difficult to explain satisfactorily what has now been stated. The external causes of diseases either arise out of the very conditions of our existence, and the circumstances in which we are habitually placed, or consist of influences which have only a local and temporary existence. The former are very numerous; the variations of them more so; and the relations of different individuals to them infinitely diversified. How difficult, therefore, must it be to appreciate and estimate the exact influence of each, and what a wide field is there for error and diversity of opinion! The latter are, in their very nature, concealed from actual observa-

tion, and can be made known to us only by their effects. How easy to deny altogether the existence of such "occult" causes; or, admitting this, erroneously to assume the agency of some that exist only in the imagination.

Again, none of the causes of disease operate with absolute and uniform certainty. Of a given number of persons placed at the same time under the influence of some one given circumstance, *e. g.* contagion, the greater number may experience no bad effects. Yet, what is more common than to hear the agency of that circumstance denied as the cause of the disease which certain of those exposed to it become affected with, because the majority remained intact? Again, the same circumstance may, in different individuals, give rise to very different diseases, and exception be taken to it on that account, as an efficient cause of disease at all.

Once more, the combined agency of two or more causes is often concerned in, and appears to be essential, in many cases, to the production of disease. Thus, a specific contagious poison is believed to be the direct cause of fever: in some, it may of itself suffice for the excitation of that disease, but in others it may, and in some it appears absolutely to, require the concurrent agency of the predisposition given by debility; in others, still, these two causes may prove innocuous till after exposure to cold, or cold and wet, or a debauch, or some unusual muscular exertion. What more easy than to overlook or deny the operation of any one of all these causes, and especially of the unseen contagious poison.

It is obvious that a subject beset with such peculiar difficulties, and open to so many sources of error and fallacy, must involve, as Dr. Alison justly observes, a kind of evidence

* This sort of reasoning has been happily ridiculed, as Dr. Watson remarks, by comparing an epidemic to a battle. "A man might say,—I was in the battle of Waterloo, and saw many men around me fall down and die, and it was said that they were struck down by musket balls; but I know better than that, for I was there all the time, and so were many of my friends, and we never were hit by any musket balls. Musket balls, therefore, could not have been the cause of the deaths we witnessed." And if, like contagion, they were not palpable to the senses, such a person might go on to affirm that no proofs existed of there being any such things as musket balls" (Watson's Lectures, 1st edition, vol. 2, p. 700.)

essentially different from that on which we proceed in other medical inquiries. The greater part of that evidence, indeed, must consist of comparative observations as to the circumstances under which diseases themselves originate; and decisive observations of this kind lie peculiarly in the way "of the medical officers of fleets and armies, who are perfectly informed of the whole circumstances of the organized bodies of men under their observation, and often see these circumstances suddenly altered, or have even the means of altering them at pleasure."* It may be added, that, superior as are the opportunities in this respect which these medical officers enjoy to those possessed by practitioners in civil life, "the peculiar value of such observations has never been so well understood as during the last war."

But in the investigation of this subject we may also derive important aid from the observation of cases of sudden death, and the manner of their production, by the known and acknowledged agency of various external causes operating violently on the living body, or of the essential conditions of vitality being rapidly and completely withdrawn. The effects thereby produced on the vital parts or organs, their relation to their respective causes, and the circumstances under which the agency of these is exerted, are of such a nature, speaking generally, as not to admit of dispute. They are all matters of fact; clear, unequivocal, decisive. How admirably they thus serve to elucidate the more obscure agency of the external causes of diseases is exceedingly well stated by Dr. Latham, and will appear from the remarks, at the close of this paper, taken from the "Clinical Lectures" of that distinguished physician. Nor is it a trifling service they render us in the investigation, that they dispose our minds to acknowledge the existence and the agency, as causes of disease, of influences that are wholly, or in great part, hidden from actual observation, by shewing us indisputably that influences of a precisely similar kind do exist, and are capable of destroying life. Does one deny that a peculiar poison engendered in, and emanating from, a human body labouring under

fever, and received into the body of another, is the immediate cause of fever in this other? We may refer him to the rapidly fatal effects of the bite of the rattle-snake, and shew him in the animal the poison, and the organs containing it—and that, too, a fluid which chemistry cannot demonstrate to be poisonous—and compel his assent to this much at least, that in attributing fever to a specific animal poison we are not referring it to a cause different in kind from that whose agency he cannot but acknowledge.

Enough, I hope, has been said in this, and the three preceding papers, to shew the great interest and importance of the study of cases of sudden or violent death, as illustrative of the leading symptoms and the general nature of diseases,—of their more intimate or essential nature,—of their modes of fatal termination,—and of the agency of their remote or external causes; and that in respect of those diseases especially which are the most dangerous to life, and, therefore, most demand our attentive consideration.

The study of them may, accordingly, be recommended to the serious attention of the practitioner, as being well fitted to aid him essentially at the bedside of the sick, by enabling him in obscure and perplexing cases of disease, to judge more accurately than otherwise he might be able to do regarding the diagnosis, prognosis, and treatment. And in an especial manner may it be recommended to that of the medical student as the best possible introduction (after the preliminary studies in anatomy, physiology, materia medica, and chemistry), to the more difficult study of diseases.

It is with such or similar views of the great value of this study, that Dr. Alison very properly begins his *Outlines of Pathology and Practice of Medicine*, by the consideration of "Cases of sudden or violent death." "The simplest exemplification (he remarks), of the laws of morbid action is to be found in cases of sudden death, and in the action of violent injuries; and we therefore premise a short account of different fatal injuries to discussions on the pathology of any diseases;"—remarking also, that "having illustrated those cases, we may afterwards refer to them with advantage, as the

* Alison, *Hist. of Med.*, in *Cyc. of Prac. Med.*, p. lxxxv. *Outlines of Pathol. and Prac. of Med.*, pp. 47-8.

facts most analogous to the changes that constitute disease." And, elsewhere*, speaking of the difficult study of diseases of the nervous system, he observes, that "the proper course to be pursued is—first, to study the various primary effects of external injury, whether concussion (previous to the accession of inflammation), or compression from depressed bone or effused blood; next, the effects on the functions of the nervous system, of other external causes operating suddenly and violently—cold, heat, electricity, hæmorrhage, and especially narcotic poisons; and then, having acquired precise information as to the direct effects of these powerful external agents on the nervous system, to direct our attention, last of all, to its diseased states resulting from internal changes."

Dr. La-ham, also, in a manner peculiarly his own, and with singular force and clearness, expresses similar sentiments. Speaking of forensic medicine, he says—

"I know no department of public teaching which, if it be entrusted to good hands, promises more benefit to medical science and medical practice than this. It undertakes to illustrate the modes in which injury, disease, or death, arrive from those external agents or accidents that are most signally hurtful to animal life; from poisons of every kind; from lightning; from hanging and drowning; from corruption of the air; and from every method of simple violence. Thus forensic medicine is conversant with all the highest points of physiology and pathology; and its very purpose requires the greatest exactness in the nature and display of its proofs. It requires, in truth, that they should be so made out as to be obvious to such understandings as ordinary men are accustomed to bring with them into a jury-box.

"Here, then, is provision made, within a large and interesting field, for demonstrating to you the effects of external agents as the causes of disease, and all matters of fact.

"The display of the fatal effects resulting from the causes enumerated to several vital parts and organs, furnishes so many demonstrations of the possible ways in which the same parts and organs are capable of suffering

from causes less hurtful. Not long ago, poisoning was an affair of the utmost darkness and mystery; but now, the rationale of poisoning in its several kinds is so well made out, that I am able to refer to it for the best instances which pathology affords of cause and effect in the manifest influence of external agents and accidents for the production of disease.

"Poisoning and the severer injuries, are a sort of *pathological experiments*. They produce upon this or that organ all the phenomena which any conceivable disease can exhibit; and they produce them in the greatest simplicity, because the subject is often previously in a state of health. Thus it is that they furnish an admirable introduction to the study of what is called spontaneous disease in the same organs."*

In concluding this series of papers, I beg to particularize the Review, in the 26th volume of the *Edin. Med. and Surg. Journal*, of Mr. Travers' work on "Constitutional Irritation," as a source of most valuable information on this interesting and important subject in its relations to pathology and practice of medicine.

CONVERSION OF BENZOIC INTO HIPPURIC ACID.

Dr. JAMES E. BOOTH and M. H. BOYÈ, of Philadelphia, have published in the "Transactions of the American Philosophical Society," a valuable paper on the above subject, accompanied with numerous experiments, embodying the following results:—

1. The formation of uric acid in healthy urine is not affected, either in regard to its quantity nor to its external properties in general, by the introduction and transformation of benzoic acid into hippuric acid in the system.

2. The time required for the benzoic acid to pass through the system, and appear as hippuric in the urine, is from twenty to forty minutes after its introduction with food into the stomach. Its occurrence continues for four or eight hours, but then ceases.

3. The quantity of hippuric acid obtained from the urine is greater than that of the benzoic acid taken. In round numbers, it may be stated to be one third more.

4. Urea is not in combination with the hippuric acid in the urine.

5. The base with which the hippuric acid is combined, and which keeps it in solution, is ammonia.—*New York Journal of Med.*

* Brit. and For. Med. Review, vol. iii. p. 303.

* Lectures on Subjects connected with Clinical Medicine. 1836, pp. 125-6-7.

ON GRANULAR DEGENERATION OF THE KIDNEY AND LIVER,

AND ITS RELATION TO TUBERCULOUS AND CANCEROUS DIATHESIS.

By DR. H. EICHHOLTZ.*

SINCE the attention of pathologists was first directed by Dr. Bright to a peculiar affection of the kidneys, which is invariably found connected with an albuminous state of urine, and with the occurrence of dropsy in different parts of the body, this affection has formed the subject of numerous researches. Although the various symptoms which characterize this peculiar disease of the kidney, have been well worked out, and nothing seems left to be done on that head, yet one cannot say so much with respect to the structural degeneration which is found after death to have taken place in this organ. The microscopic examinations of this disease which were made by Gluge, Valentin, and Hecht, have not, so far as I know, been repeated with similar results by later inquirers. The first good description of the nature of this degeneration was furnished by Henle, and appended by him to the history of the case of a person who had died of Bright's disease, and the particulars of which were published in the journal conducted by himself and Pfeufer.

Of the liver also, there is an affection which is not less important than the above noticed disease of the kidney, and is probably even of more frequent occurrence than it; it was denominated cirrhosis by Laennec, and when fully established, it would seem from the observations both of Hallmann and of Henle, to consist in an abnormal development of fibrous tissue. In this disease, as in granular kidney, through the development of a new tissue in the substance of the organ, the capillary system of vessels, and later, on vessels of larger size, become compressed, and the affected parts are thus rendered quite anæmic, so that frequently, when cut into, not a drop of blood can be obtained from them. In advanced stages of both diseases also the affected organs present a lobular appearance, and become indented with cicatrix-like depressions, through contraction of the

newly developed fibrous tissue. From this characteristic appearance Henle was led to apply the name cicatrix-tissue to the newly formed material. That granular degeneration of the kidney and of the liver do sometimes occur coincidentally is quite certain, and this circumstance might already have led to the opinion, that both the degeneration cannot be the result of an especial affection confined exclusively to the organ attacked, but that the cause thereof must have a deeper seat. If in the following observations it be shown, that not only the liver and the kidneys may be affected in this manner, but that also the spleen may be implicated in the disease,—if, moreover, the results of examinations after death shew quite certainly that not only are the kidneys, the liver, and the spleen found thus diseased, but that also the cure of previously existing phthisis may take place, and that likewise, in consequence of a peculiar condition of the blood different to what occurs in phthisis, this abnormal fibrous structure may be developed in the lungs, and so lead to the cicatrization of tuberculous cavities,—nothing can be wanting to establish the truth of the above stated view, that the cause of this peculiar degeneration has a general, and not a local seat. Inasmuch as it is only attempted here to establish the nature of the disease by the results obtained from post-mortem examinations, but little therefore will be offered about the history of the cases, or the treatment they were submitted to, especially since on these points nothing new can be contributed.

Degeneration of the kidneys.

CASE I.—A lad, aged 12, died with symptoms of Bright's disease: his urine during life was highly albuminous, and contained a large quantity of fat.

Autopsy.—The kidneys were found considerably enlarged; their tissue was more flabby than natural, and remarkably pallid, especially the cortical substance; here and there the pale surface of the organ was marked with irregular shaped spots of a violet-red colour. When cut into, the cortical substance was found converted into a whitish yellow mass, dotted over here and there with reddish spots. This yellow substance, when examined more closely, had a

* Translated for the LONDON MEDICAL GAZETTE, from Müller's Archiv, 1845.

flaky appearance, and was observed to extend down between the bundles of medullary substance. A drop of the whitish fluid with which the cut surface of the organ was bedewed, was removed with the scalpel and placed beneath the microscope, when a number of irregular rather dark coloured bodies was observed. In order that each of these bodies might be the better observed, a little water was added to the drop of fluid, upon which the several bodies lost their dark appearance, owing to a number of small molecular particles being dissolved from their surface, without the form of the body itself being altered. As before stated, the form of these bodies was irregular, yet in each of them length preponderated over breadth, and this again over depth: when a current was excited in the water they did not roll about like globular bodies, but floated along, always retaining the same surface uppermost: upon agitating the fluid still more, their position speedily became changed, so that their form and relative diameters could be easily distinguished. The results of this examination could leave no doubt of these bodies having formed the contents of the uriniferous tubules, from which they had been squeezed by the stroke of the knife in making the section of the kidney. A few inflammatory globules of Gluge, but no pus corpuscles, were observed. The uriniferous tubules themselves were difficult to discover, and it was only sometimes on a thin section that the outline of one or more could be traced any distance; these were not so rectilinear as usual, but presented a number of constrictions more or less marked, which were of too frequent occurrence to be regarded as the natural appearances described by Henle and were no doubt occasioned by the development of a new tissue of a fibrous character, by which the tubules were on all sides surrounded. When we succeeded in isolating a single fibre, it was observed to be small, and faintly granular; acetic acid caused it almost entirely to disappear, but its integrity was restored by iodine water, which reagent is almost indispensable in microscopic researches. This fibrous tissue became very evident, when portions of the macerated cortical substance were examined.

CASE II.—A girl, 9 years of age, was admitted into hospital with extensive ascites and anasarca. Under treatment the dropsical swellings subsided, but the child eventually died.

Autopsy.—The kidneys were large, firm, of a general whitish yellow colour, variegated with dark violet spots, and marked here and there with cicatrix-like depressions. When cut into, the place of the cortical substance was found occupied by a whitish yellow substance, which had extended to between the bundles of tubular substance. With the microscope the above described fibrous structure was made out, also cells which were elongated, and evidently about to pass into fibres; moreover, there were observed cell-nuclei and fat. From the circumstance of the skin in this little patient being rough, scaly, and desquamating, it seemed most probable that a preceding attack of scarlet fever had been the cause of this disease in the kidney, but this could not be ascertained from her history.

Degeneration of the liver.

CASE III.—A man, aged 45, was admitted into hospital, labouring under delirium tremens, together with ascites; a severe attack of pleuro-pneumonia carried him off. The surface of the body presented a slight yellowish tint, but was not distinctly jaundiced.

Autopsy.—The liver was enlarged, of a yellow nutmeg-like colour, tolerably bloodless, and had a fatty greasy feel on its cut surface. When examined beneath the microscope, a large quantity of fat was observed, which in part floated free, in part was contained within the hepatic cells. Besides this, the hepatic cells presented a peculiar appearance: instead of exhibiting, as usual, a good-sized nucleus and nucleolus, and being filled with a finely granular matter, they appeared to contain, besides oil-globules (which many of the cells did not possess), a very dark matter, which, on closer inspection, was found to have a fibrous character. At first, it was supposed that this fibrous matter was deposited in the interior of the cells, but shortly it was ascertained that around some of the freely floating cells not only was there a kind of fibrous atmosphere by which the cells were invested as it were, but that also there were distinct fibres run-

ning directly across the cells; and lastly, that there were some cells from the circumference of which proceeded a greater or less number of off-shoots or processes, which clearly were the extremities of fibres deposited on the cells. By acetic acid, these several fibres were rendered pale, but had their integrity restored by iodine water. When a piece of the substance of the liver was pressed between two plates of glass, some more or less irregular-shaped spots appeared, some of which were light, others dark, each being surrounded by a still darker circle. The contours of the individual hepatic cells could not be distinguished in this mass, being completely hidden by the new product around them. When the free floating cells contained fat globules, these had, in many cases, through compression by the fibrous substance, assumed irregular forms, very different to the rounded shape which is commonly characteristic of oil globules.

The entire substance of the liver was strewn over with granulations, especially on the free margins of the organ, which were beginning to be rounded off.

CASE IV.—A man, æt. 47, was admitted into hospital labouring under extensive ascites. The man suffered from hæmorrhoids, and the superficial veins on the surface of the abdomen were considerably enlarged. The urine was dark coloured, but with this exception, and a slight yellowness of the skin, there were no symptoms of jaundice. Paracentesis abdominis was performed, and a large quantity of yellowish fluid evacuated; but a re-accumulation speedily took place, and the man shortly after died with symptoms of peritoneal inflammation.

Autopsy.—The liver was diminished to about one-third its natural size, was lobulated on its surface, and had a firm compact texture; when cut into, no blood escaped from it, and on the cut surface were observed a number of dark yellow granulations, varying in size from pins' heads to lentils, and placed on a whitish ground; the blood-vessels appeared quite obliterated—a fact sufficiently proved by the absence of blood when the organ was cut into. Examined beneath the microscope, these granulations were found to contain few hepatic cells, and these few were singularly pale, and many of them unprovided with nuclei; some of

the cells were filled with dark points, and a few contained fat-cells, although, on the whole, fat was rather deficient than increased in quantity. The granulations consisted almost entirely of a fibrous net-work, the individual fibres of which were intimately woven together; the hepatic cells seemed to have been constricted by this fibrous network, and almost all to have dwindled away. The under surface of the peritoneum was beset with granulations of an opaque white colour, and varying in size from millet-seeds to lentils: these granulations contained in their interior the tubercle-corpuscles described by Lebert, but were also surrounded by a firm fibrous kind of sheath, containing elongated cells, and cell nuclei. The peritoneum immediately surrounding these granulations was of a deep red colour, but exhibited none of the melanotic deposit so frequently found by Lebert and Cless around peritoneal tubercles. Moreover, on the peritoneal surface of the intestines, and on the meso-colon, were observed a number of milary semi-transparent granulations, which also contained tubercle-corpuscles in their interior. The omentum was converted into a dark red fleshy-looking mass. Not a trace of tubercle was found in the lungs. The gall-bladder was greatly enlarged, pale in colour, and not unlike the urinary bladder; the bile which it contained (which was not examined for forty-eight hours) had an acid reaction, contained a quantity of tenacious mucus, some albumen, and a small quantity of bile-colouring matter; it was not examined for bilin. The spleen was loaded with blood.

Degeneration of the kidneys and liver.

CASE V.—A woman, æt. 34, had, on admission, very extensive ascites and anasarca. Whilst in hospital the amount of dropsical effusion varied, at one time increasing, at another diminishing. The patient eventually died. The urine was commonly of a clear yellow colour, but it was never chemically examined.

Autopsy.—The lobulated form of the liver sufficiently indicated the presence of fibrous tissue in its structure. The organ had a general greyish colour, contained but little blood, and was marked with yellowish white wavy lines, which consisted of fat-vesicles, and between which were scattered numerous brownish spots.

The kidneys were about as large again as natural; their external surface was densely covered with yellowish white granulations, between which a number of blood-vessels were observed ramifying. On making a section, these granulations were found to occupy the entire cortical substance, and to have extended down between the pyramidal portions of the medullary substance. A small particle was scraped from the cortical substance, and placed beneath the microscope, when there were observed in it (a) a few fat-vesicles, (b) a large quantity of various-sized exudation corpuscles, some of which were strung together in rows of two or three; others formed irregular heaps, whilst others, again, were lying singly; (c) some very dark and mostly elongated masses, which were also entirely made up of various-sized exudation-corpuscles: the dark, almost black, colour of these masses resulted from the close packing of the exudation-corpuscles: they were rendered paler by acetic acid. With the exception of their form, which was round, or nearly round, these exudation globules resembled in all particulars the inflammatory globules of Gluge. When a single granulation was examined, it furnished exactly the same results. Besides these granulations, there were also observed, in the cortical substance of the kidney, a number of whitish striæ running towards the pelvis of the organ, and having a firm, almost cartilaginous, consistence. When examined beneath the microscope, these striæ were found to be made up of pale granulated fibres, which were rendered still paler when treated with acetic acid. These fibres were not of one uniform width throughout their entire course, but were alternately dilated and contracted: here and there a fibre was interrupted, and its place was occupied by a body, one extremity of which was elongated, and the other dilated—a kind of caudate cell, just as is observed in the transition of cells into fibres.

It was interesting to observe in these kidneys the successive transition of exudation-corpuscles into cells, of these cells into fibres, and, as I believe, of fat-vesicles into exudation-corpuscles. It seems probable that the fatty condition of the liver in this case might be accounted for, by supposing that in this organ, as in the kidneys, fat was first deposited, and would subsequently

have been converted into exudation corpuscles; a supposition which is strengthened by the circumstance of fat-vesicles being still found in the kidneys: these vesicles would doubtless have disappeared gradually as the exudation corpuscles increased in number.

Degeneration of the liver and spleen.

CASE VI.—A girl, æt. 19, was admitted with ascites and anasarca. An attack of typhus, contracted whilst in the hospital, carried her off. Upon examining the body, there was found, besides commencing cicatrization of some intestinal ulcers, purulent infiltration of the lower lobe of the right lung, cirrhosis of the liver, and a peculiar condition of the spleen. Instead of being soft and friable, as this organ is commonly found after death, it was in this case quite hard and compact in structure; not a drop of blood escaped from the cut surface, which, in colour, very much resembled the flesh of salmon (*lachs fleisch*). In size, the organ was at least as large again as natural. When examined beneath the microscope, fibrous tissue was observed especially to preponderate in the structure of the organ; but since this is one of the tissues naturally found in the spleen, we are not exactly justified in concluding that the degeneration here undergone corresponded with that affecting the liver; although the increased size, and the compactness of tissue of the organ afford great probability that it was the same. The kidneys were large, full of blood, and somewhat hard, but not degenerated.

Degeneration of the kidneys, liver, and spleen.

CASE VII.—A man, æt. 44, was admitted suffering from ascites and anasarca; he had also cough, with scanty expectoration. The dropsical effusion gradually subsided, and the patient became greatly emaciated. Nausea and vomiting, with profuse diarrhœa, eventually supervened, and were followed by coma and death.

Autopsy.—In the upper lobes of both lungs there was some purulent infiltration, the result of pseudo-lobular pneumonia; the pulmonary tissue surrounding the purulent parts was œdematous. The intestines were pale, but quite healthy. The stomach was enormously dilated. The liver and kidneys were degenerated through the development of fibro-cellular tissue within

them—the latter was almost entirely disorganized; externally they had a white brawn-like aspect, and were marked on their surface by cicatrix-like depressions. On making a section, the reddish brown bundles of urinary tubules were observed pressed down towards the pelvis of the kidney, and surrounded by a whitish brawn-like substance. The spleen was enlarged hard, and similar in colour and other peculiarities to the one in the last case. The urine which was obtained from the bladder was loaded with alumen.

[To be continued.]

ON DETACHING THE PLACENTA IN SOME CASES OF PLACENTA PRÆVIA.

By THOMAS RADFORD, M.D.

Consulting-Physician to the Manchester Lying-in
Hospital.

CASES of placenta prævia are justly allowed by all writers and practitioners, to be amongst the most dangerous complications of labour; and none, however skilled in obstetrics, ever become engaged to attend a case of this description, without feeling great anxiety of mind as to the termination.

These cases are individually attended with very different relative circumstances, and therefore they demand for their management, a different plan of treatment. To adopt a particular mode of proceeding, from deductions drawn from statistical calculations, and especially from defective data, is sure to lead to an erroneous conclusion. We ought to be informed of the different relative constitutional or local conditions which existed in each case; of the moral and physical qualifications possessed by the attendant practitioners; and surely it cannot be denied that every essential circumstance in the case, or which has a contingent influence on it, should be taken into account before an accurate balance can be made out.

Obstetric statistics, as they are now published by different writers, are altogether fallacious, because they are in many cases brought forth to prove some favourite doctrine.

The practice of first detaching the placenta ought never to be adopted unless,

1st. The danger to the woman is so great from exhaustion as to render the ordinary plan of delivery by turning the child hazardous.

2nd. Where there exists some obstacle to the extraction of the child, either from distortion in the bones of the pelvis, or tumors connected with it, or in its cavity, but connected with the soft parts.

3rd. Where the child is dead.

It becomes the duty of the obstetrician conscientiously to adopt that practice which affords the greatest safety to both the mother and the child. But it is an acknowledged principle of British midwifery, to save the life of the mother in preference to that of the child, when one life is in jeopardy, or must be sacrificed in order to save the other. In cases of placenta prævia, I fully agree in the practice suggested by this rule; because the danger depends on a temporary cause, which does not extend its influence to impede the progress or interfere with the safety of succeeding labours. But even in these cases, the child still living in utero should have justice extended to it, and its life ought never to be wantonly sacrificed. Then, as detachment of the placenta is nearly certain destruction to the child, it follows that this practice ought never to be adopted when the constitutional or local condition of the mother would allow the ordinary method of turning and extracting the child to be safely performed.

Before we undertake either the operation of turning or that of detaching the placenta, we should duly consider what is the condition of the cervix and os uteri. It is not my intention on the present occasion to enter into a detail of those cases, which must be treated on the ordinary principles of practice, but enough has already been said to shew that, in my opinion, they form the great bulk.

In the Provincial Medical and Surgical Journal (Jan. 22d, 1845), I made the following observation:

“First. Then as neither delivery nor detaching the placenta ought ever to be attempted, until the cervix and os uteri will safely allow the introduction of the hand, rest, the application of cold, but above all the use of the plug, must never be omitted in cases where they are respectively required.”

During the early months of pregnancy, the increase of size is mainly confined to the body and fundus of the uterus, so that the cervix presents downwards a characteristic stem-like projection. The change of develop-

ment which this part of the organ undergoes during the latter months is gradually progressive, and presents an undilated and undilatable canal of greater or less length according to the stage of pregnancy, so that it is quite impossible to know whether the placenta offers itself first, before those changes of oviform expansion are produced upon it, either as the result of a natural action, or of an abnormal change provoked by the excited contraction of the fundus and body. Then, under such an organic condition, would it be prudent, nay, would it not be rash on the part of the practitioner, and extremely dangerous to the patient, to adopt the practice of detaching the placenta?

It would be worse than idle curiosity to forcibly carry the finger onward through the os and cervix uteri to ascertain whether the placenta was situated over this part; indeed, it might be fatal to the patient. Nothing, it appears to me, can warrant the practitioner in proceeding to this operation on a bare suspicion that the placenta is placed here. To dilate this portion of the uterus with the finger, so as to pass the hand, or to attempt to use any instrument to detach the placenta when perchance it may not there exist, might involve the operator in a serious responsibility. The practice of detaching the placenta is not a means to be recommended in the treatment of the hæmorrhage attending premature labours, as an invariable method to be adopted in these cases.

Is this operation called for in preference to the ordinary mode of delivery, because it happens to be a first labour complicated by placenta prævia? The leading feature of a first labour is tediousness produced by a great indisposition in the soft parts of the mother to yield; they have a new function to perform, and it requires a long time to bring them into a condition physically safe to allow the head of the child to pass through. This unyielding condition is normal, and only becomes abnormal by the interference of a meddlesome practitioner. Then, is this natural condition of the os uteri a reason why we should adopt a practice which at once destroys the child, and renders it hazardous to the mother? Certainly not; for we possess means which are

more applicable to cases of this character.

The os and cervix uteri should invariably be dilated or dilatable when the placenta is to be detached. It ought to be already so open, or in a condition to be further opened to admit the hand safely to pass through it; there should be no contusions, no organic lesions resulting from the operation; safety should be our watchword. The hand is the only instrument by which the placenta should be detached, and, indeed, I hesitate not to state, that it cannot be safely and effectually separated by any other means. It has been asserted otherwise by a late writer, who says, that the finger, or an instrument analogous to that used by the late Dr. Hamilton, for the induction of premature labour, may be employed to effect this detachment. In those cases of unavoidable hæmorrhage which occur before the expansion of the cervix uteri, it would be quite impossible to force the finger along the cervical canal and reach the edge of the placenta so as entirely to detach it, and in those instances which occur at the latter part of pregnancy or beginning of labour, with a rigid os uteri, or even with a dilatable state of this part, it appears to me to be out of the power of the operator with the finger alone to reach so far as the edge of the placenta. The circumference of this organ is well known when it is placed over the os uteri; its centre is not always in a direct line with the centre of the opening, but there is every variation in its position here.

But the attempt to detach the placenta with the finger appears to me to be a safe procedure, compared with the use of the metallic instrument above mentioned to effect this detachment, when it cannot be done with the finger. Can we imagine that a piece of steel can be passed through the os uteri, and adapt itself to the surfaces of the placenta and the uterus, in all the varied relations that the former observes to the latter? Can we depend on the delicate application of these means in reference to the uterine tissue? Can we effect a complete and uniform detachment of the placenta? Can we always be certain that the placenta is placed over the os uteri, when the parts are so

rigid and contracted as to render such a plan necessary? I hesitate not to declare my opinion against the safety, propriety, or practicability of such an operation.

It has been estimated from statistical calculations, that there is one death in three of mothers in cases of placenta prævia; but this average according to my experience is far too great, the particulars of which shall at a future time be laid before the profession.

Notwithstanding the alleged high rate of mortality, as the result of the ordinary treatment of placenta prævia, I have no doubt in my mind, that a most fearful preponderance of maternal and fetal deaths will be produced, if the new plan of treatment suggested is followed.

RESEARCHES ON INFANTICIDE.

BY M. ORFILA.

ORFILA has been recently led to investigate a somewhat unusual question connected with the subject of infanticide, namely, whether it be possible to distinguish the ash of burnt wood, from that resulting from the combustion of a newly born infant. He has given the details of numerous experiments undertaken for the purposes of determining this point, and has drawn the following conclusions from the results.

1. If the ash of a burnt foetus does not contain a sufficient quantity of ossific matter to allow of its being at once distinguished from other kinds of ash, we may recognise it by the following characters:—When calcined with potass in a porcelain crucible, cyanide of potassium is obtained; when treated with diluted sulphuric acid, sulphuretted hydrogen is invariably given off: and the acid solution which remains after the reaction has been allowed to continue for two or three days, always contains biphosphate of lime. 2. The ash obtained from the oak and fir, when calcined in the same way with potash, is found to yield no cyanide of potassium; it does not disengage any sulphuretted hydrogen, nor does it form any biphosphate of lime, when digested with sulphuric acid. 3. The ash of turf and of the vine plant disengage a very slight quantity of sulphuretted hydrogen. 4. The ash of coke does not furnish any cyanide of potassium, but when treated with sulphuric acid gives a notable proportion of biphosphate of lime with the disengagement of a large quantity of sulphuretted hydrogen. 5. The ash of oak, or of the fir, when mixed with coke, ash, and the residue of animal matter, behaves in a manner closely similar to that of the ash of a foetus, with the exception of furnishing a much less quantity of cyanide of potassium, of sulphuretted hydrogen, and of

phosphate of lime. 6. Turf-ash furnishes neither cyanide of potassium, nor phosphate of lime, but disengages much sulphuretted hydrogen when treated with sulphuric acid.

7. It follows from the above, that the medical jurist ought to be exceedingly cautious in pronouncing upon the nature of ashes, in any case in which he cannot ascertain with certainty that the combustion of the foetus has been effected by oak or fir wood, or with any other wood which contains neither nitrogen nor sulphur; because there are other combustible materials which might in reality have been employed, and which behave towards some of, if not all the above mentioned agents, almost exactly as does the ash of a foetus.—*Annales d'Hygiène*, and *Gazette des Hôpitaux*, Juillet 1845.

[REMARKS.—The very large proportion of phosphate of lime present in the ash from the animal body (from the skeleton) would always distinguish it from the ash of any of the vegetable fuels here referred to, which might have been employed for its destruction by fire.—*Ed. Gaz.*]

PUERPERAL ABERRATIONS AND MANIA.

BY M. COLOMBAT AND DR. MEIGS.

GENERALLY speaking, all these caprices, all these oddities and maniacal states, disappear after delivery: insanity, however, which, besides, does not come on until after the parturition (puerperal insanity) sometimes continues throughout the lifetime of the patient. The therapeutical treatment, under such circumstances, is almost always impotent, and consists, indeed, wholly in a few bleedings, some counter-irritants to the skin, and derivatives applied through the intestinal tube. C.

M. Colombat says truly, that puerperal mania does, in some instances, last as long as the life of the patient; but it would be wrong to assume from this that the cases of non-recovery are few. On the contrary, the cases of recovery are numerous, while those of persistent mental alienation are very few, and those in which death occurs are very rare indeed. Dr. William Hunter, of London, was asked what opinion he had formed as to the prospect of recovery of a lady who had been brought to London to see him. "Ah! that's not the question in these cases," replied he; "the question is, not whether the patient is to recover, but when?" If Dr. Hunter ever made the above remark, it should be deemed a consolatory item in the budget of distress connected with such cases: yet it is true to say, that not a very few persons, seized with the symptoms of puerperal mania, perish, sooner or later, from lesions of the encephalon, consisting of softening, or effusion or even extravasation of blood within the parietes of the cranium. M.

MEDICAL GAZETTE.

FRIDAY, NOV. 21, 1845.

THOSE who have paid the least attention to the progress of medical science, cannot have failed to notice the rapid advances which have been made within the last few years in the study of ORGANIC CHEMISTRY. As Englishmen we can take but little credit for any share in these advances: if we except Dr. Prout, it would be difficult to name any English chemist, who has acquired repute from his researches in this branch of science. We have numerous excellent treatises on Chemistry written by men who have attained a high reputation as chemists; yet when we look to the manner in which the subject of Organic Chemistry is treated, we find but little that is original. The analyses of the blood, bile and urine, whether healthy or diseased, are given for the most part second-hand: they are, indeed, the old analyses of Berzelius, Thénard, and Lecanu, which have been copied by one author after another, for years together, without any attempt being made, either to verify the results or to improve on the modes of analysis adopted. In the last edition of Turner's Chemistry a very large space is certainly assigned to that portion of the science which treats of the chemical composition of organic substances: but even here the desire to comprise a large amount of matter within the compass of a portable volume, has compelled the author to give but very slight sketches of an important class of substances, highly interesting to the medical practitioner.

It appears to us to be a matter for deep regret, that knowing the extent of their subject, the authors of all modern treatises on chemistry will persist in introducing into their works so

much of what may be called Chemical Philosophy. Such subjects as the polarization of light and heat,—the laws of diathermancy,—double refraction and crystallization, together with the complete history of electricity and magnetism, are much better fitted for works specially devoted to Physics than to those which are professedly chemical. When, moreover, we consider, that the introduction of such extraneous matters is attended with the necessary exclusion of much chemical information of great importance to the pathologist and pharmacist, we think our readers will agree with us in condemning this practice*. While a considerable space is devoted to laying down rules for calculating the number of rays of heat which traverse rock crystal and salt respectively, or for determining the specific electricity, isomorphism, and density of atoms, the methods of distinguishing one salt from another, of identifying particular substances, or of detecting morbid changes in the animal secretions, are entirely passed over. That which is really chemical is neglected for that which is purely physical. It would be just as reasonable to introduce mineralogy, crystallography, geology, and meteorology, into works on chemistry, as to occupy so large a space with such subjects as those just mentioned. If writers would only reserve them for an appendix, Organic Chemistry would not be deprived of the fair space to which it is entitled. We should then probably have all that a chemist requires—i. e. a mere sketch of these subjects; and for further information the reader might be referred to those works on Physics in which they are professedly and appropriately treated.

The merit of having given a great

* We must except from this remark Dr. Gregory's recently published work on Chemistry. Physics are here properly excluded, and a much larger space is assigned to Organic than to Mineral Chemistry.

impulse to modern chemistry is due to Liebig. In his treatises on animal and vegetable chemistry he has broached a number of theories which, if they have not satisfied physiologists and pathologists, have led to much experimental investigation and important results in England as well as on the Continent. The economical application of chemistry to the useful arts and to agricultural science, as it is developed in the works of Liebig, has induced manufacturers, farmers, and men of the world, to pay attention to a subject which they had hitherto treated as but little calculated to assist them in their respective pursuits; and thus we have now numerous works detailing all kinds of processes for the manufacture of manures, the growth and rotation of crops on chemical principles, the profitable use of various descriptions of guano, &c. It is questionable whether the impulse has not been of late rather too strong in this direction, and that experiments have been performed without a proper knowledge of principles; thus leading to disappointment and wasteful expenditure.*

To medical men the applications of organic chemistry to pathology, are of especial interest. The diagnosis of several diseases is now much assisted by resorting to a chemical examination of the blood and urine; and it is by no means improbable, according to Liebig's prediction, that the next great step made in the advance of medical science will be through the aid of organic chemistry. There are unfortunately many imperfections connected with the present mode of teaching this subject in

our great public institutions; and one of the greatest defects is, that there are but few opportunities for practical instruction. The short period allotted for medical study is so encumbered with lectures, that even did greater facility exist for acquiring a *practical* knowledge of the subject, by the formation of working laboratories, it is doubtful whether under the present system of medical education a student could avail himself of the opportunities thus offered. In the courses of experimental instruction now given, but few have it in their power to attend with regularity, and the short period assigned for laboratory practice, is commonly a spare hour between certain lectures which are rendered imperative by the curricula of the Colleges. This is an evil, however, which admits of correction; and there is great reason to believe that under the New Council of Health a remedy will be applied. Let the qualifications of teachers and the examinations of students be properly looked to,—let a general plan for medical study be laid down,—and other matters will speedily adjust themselves. There will then be an end to the struggle now annually made to get through an impossible number of unprofitable lectures, within a certain fixed period.

Before another year has elapsed, this preliminary obstacle to the proper study of an important science will, we hope, be removed: it will then become a question, whether medical schools are sufficiently provided with the means for carrying out this object. At present Chemistry is almost exclusively taught by lectures; but these can never do more than convey a knowledge of the elements of the science. Dr. Gregory has well observed, that “the idea of teaching *the art of research*, in lectures, is quite absurd; and without this, Chemistry is nothing.” The present medical session has been marked by

* We lately had occasion to mention, that an agricultural chemist, who wished to apply superphosphate of lime as a manure to the soil, burnt a large quantity of bones in a kiln, digested the earthy residue for some days in a mixture of sulphuric acid and water, poured off the clear liquid, and preserved the residue. The liquid was thrown away as useless; while the dried residue (i. e. the sulphate of lime) was spread over the land under the supposition that it was the superphosphate of lime!

one great step to provide for this deficiency, in the foundation of a College, and in the establishment of working laboratories by the Pharmaceutical Society, as well as in some of the principal medical schools of this metropolis. In what way these are likely to operate, will be a matter for future consideration.

Reviews.

Sixth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England, for the year 1844.

WE have retained a place for the Sixth Report of the Registrar-General among our bibliographical notices, less with the intention of dilating upon the value of a work which has now been for a considerable time in the hands of many members of the profession, than from a wish to refer to a few very striking facts which are developed in the tables—facts which, we conceive, afford a most impressive and painful commentary upon the deplorable absence of a system of medical police in this country. These facts, it appears to us, should be unceasingly presented to the view of our legislators, and circulated among all classes of influential and right-minded persons, until the government shall learn how great an evil is inflicted upon humanity, in permitting the existence of a useless traffic which annually affords facilities to the perpetration of between 150 and 200 of the suicides, and a very large proportion of the murders that disgrace our country.

In the year 1840, nine hundred and one persons died by their own hands in England and Wales. Of these, 161 perished from the effects of poison taken with suicidal intent. Of the 161 individuals thus destroyed, 74 were males, and 87 females: seven of this number were medical men. It appears that one druggist committed suicide by poison during that year. From a careful examination of the occupations of the persons who destroyed themselves in this manner, it will be found that a very small proportion of their number were engaged in trades in which the use of poisonous materials is absolutely necessary.

The poisonous substances employed

were: opium in 19 cases; arsenic in 26; oxalic acid in 3; prussic acid in 4. The deaths from other poisons were 109. Two of the medical men destroyed themselves by prussic acid; the other five by poisons not specified (neither arsenic, opium, nor oxalic acid). From the above details, and from an inspection of the tables from which they are adduced, we draw the following conclusions:—

1, That the occurrence of nearly the whole of the above 154* cases of poisoning might have been prevented by the existence of stringent legal enactments forbidding the retail sale of poisonous drugs to non-professional persons: and,

2, That such regulations would unquestionably have prevented the whole of the 19 deaths from opium, the 26 from arsenic, 3 from oxalic acid, and remaining 2 from prussic acid; as it is evident, from the nature of the occupations of the individuals who destroyed themselves, that they must have procured the poisons from druggists upon shallow and inadmissible pretences†.

The shameful custom which permits retail druggists to keep large quantities of deadly poisons (*not required in medicine*) in their shops, and to sell these poisons freely, and almost without reserve, to persons of all descriptions, has been so frequently commented upon in the public prints, that every individual in the country must have become aware of the dangerous tendency of this practice. Still, not the slightest means have been taken by the legislature to put a stop to the deadly traffic, and the examples of its fatal results rather multiply than decrease.

Every druggist in the country has, in general, exposed for sale in his shop a considerable quantity of at least three most active poisons; neither of which, by any chance, ever finds a place in any medical prescription, or is, in

* We omit the seven instances of suicide by poison of medical men, as it is evident that no legislative measure can check this kind of suicide among persons engaged in the compounding of drugs.

† In illustration of this opinion, we may give the occupations of the 26 persons who poisoned themselves with arsenic. Labourers, 4; milkman, 1; artizan, 1; clerk, 1; shopkeeper, 1; milliner, 1; domestic servants (female), 5; sailor's wife, 1; widow, 1; spinsters, 4; occupations not specified, 2; labourer's daughter, 1; daughters of persons not engaged in the sale of drugs, 3. It is perfectly evident that, with the exception of the artizan, who may possibly have used arsenic in his trade, the whole of these individuals must have procured the poison surreptitiously.

reality, necessary in any form of medical treatment: these are, arsenious acid*, oxalic acid, and oil of bitter almonds. Upon the most trivial excuse, and for a very small sum, any person may procure a quantity of either of these poisons sufficient to destroy the lives of an entire family.

To destroy rats†, or to kill
other vermin: also the fly
in sheep.

To clean boot-tops, harness,
straw-bonnets, &c.

To flavour confectionary,
perfume hair-dyes and
soap!

Arsenious Acid

Oxalic Acid

Essential Oil of Bitter
Almonds.

FOR THE PURPOSE OF
DESTROYING
HUMAN LIFE.

If long habit, and a spirit of disregard for the dangers which beset others, had not taken deep root in the public mind, it would have been thought utterly impossible that, in enlightened England, in the nineteenth century, the customs of destroying vermin in a particular and filthy manner, of giving a glossy appearance to some trifling articles of human and equine apparel, and of imparting a peculiar taste to certain viands, should have become the means of giving facility to the sudden and violent deaths of a large number of persons annually.

The words "arsenic to poison rats" might, long since, have been stereotyped by printers for continued use in reports of cases of suicide and murder. Who ever heard of a murder by arsenic in which the criminal did not attempt to conceal the intended crime by alleging that he wanted the poison to destroy rats or mice? By what law or right persons of all ages, sexes, and

14TH CENTURY.

"And forth he goth, no longer wold he tary,
Into the town unto a poticary,
And praied him that he him woide sell
Some poison that he might his ratouns kill,
And eke there wal a polcat in his heme,
And fayn he woide him wreken if he might
Of vermine that destroyed him at night."

Chaucer's Pardounours Tale.

Within the four centuries which have elapsed between the inditing of the above sentences, hundreds of human lives have been destroyed upon the same plea; and we still allow the mediæval custom to prevail without let or

We can undertake to affirm, as medical practitioners, and as persons well acquainted with the application of medicines in all their forms, that the only uses for which retail druggists can sell either one or the other of these poisons to non-professional persons, are the following:—

conditions, should be allowed to purchase for a few pence an agent which is, in reality, put to no lawful use, but which may be, and, when so purchased, generally is, employed in the destruction of human life, it is quite impossible to understand. It appears as if it had become, from time immemorial, part of the *lex non scripta* of the land, that the destruction of rats in a particular manner is a result so desirable that, rather than disturb the consummation of an object so important to society, an indefinite number of human lives must be sacrificed annually by this Juggernautish practice!

A comparison of the following passages—the first being in the words of a popular writer of the fourteenth century, the others being taken from the details of two instances of suicide which have lately occurred—will show how deeply rooted the practice of this antique custom has become.

19TH CENTURY.

"She purchased one pennyworth of arsenious acid 'for the purpose,' she said, 'of destroying rats.'"

"He swallowed half an ounce of arsenious acid upon the usual pretext of *killing rats*."
—*Northern Journal of Medicine*, October 1845.

hindrance! To the record of suicides which we have quoted, a fearful list of instances where death arose from the accidental administration of poison, must be added; 188 lives were sacrificed in this manner during the year 1840. Of these, 39 were children destroyed by over-doses of opium; 15 died from the effects of oil of vitriol, taken by mistake; and 8 from the

* The occasional use of Liquor Potassæ Arsenitis scarcely forms an exception to this remark.

† The question has been put by an experienced man whether arsenic does not destroy annually more human beings than rats or mice!

action of other poisons which must have been, in every case, purchased from druggists.

What an impressive and forcible commentary does this record of 216* deaths, from what may be regarded as *preventable causes*, afford upon those imperfect laws which permit virulent poisons to be retailed freely, and by pennyworths to persons of all denominations; and yet, as we have seen, this practice has held, in "the most civilized country in Europe," for many centuries, and will continue to prevail unless the government can be induced to establish an enactment under which severe punishment shall be incurred by all individuals, with the exception of manufacturing and wholesale chemists, manufacturers upon a large scale, and other persons whose occupations shall be specified, who shall either vend or retain in their possession quantities of certain poisonous matters, such as, arsenious and oxalic acids; the salts of Baryta, *Cocculus Indicus*, &c. &c.—and which shall farther entail a heavy penalty upon any druggist who shall retail either of the following drugs to persons who apply for the same, without producing a prescription in Latin, or an order signed by a medical practitioner,—arsenical solution (the only preparation of arsenic which should be kept by retail druggists or medical men); corrosive sublimate, the salts of copper, nitric, sulphuric, and prussic acids, the oxides of lead, nitrate of silver, caustic potash, *nux vomica*, any preparation of opium, or other powerful narcotic.

No persons would hail the establishment of such an enactment as this more gladly than the whole body of medical practitioners. We believe that the good end might be effected by any well-intentioned member of the senate, who chose to represent the above facts in their proper light, and with sufficient pertinacity; but the legislature has so long been deaf to all representations

* In making this remark, we allude merely to the 154 cases of suicide by non-medical persons, and the 62 instances of accidental poisoning in which the nature of the poison taken was ascertained—excluding the 46 deaths by "medicines improperly given," and 80 deaths by "other poisons" the nature of which is not specified, (pp. 160-61), as, in the two latter sets of instances, the real circumstances under which the deleterious matters were taken not being sufficiently explained, the precise causes of these 126 deaths remain uncertain.

upon this subject, that we can scarcely hope for amendment of the present pernicious system from any single appeal, however energetic.

We have one word to say respecting the essential oil of bitter almonds, which is now retailed so extensively for flavouring confectionary. Neither the flavour nor the odour depends on the prussic acid which it contains, and this deadly poison admits of separation by chemical processes without materially impairing the uses to which the essential oil is put. Notwithstanding this, no check is put upon the sale of the *poisonous* oil; and from the facility with which it may be procured, it furnishes a ready means for the perpetration of suicide or murder. To put this matter in a stronger light—let us imagine that common syrup, so saturated with arsenic that twenty or thirty drops would destroy life, was allowed to be retailed in this poisonous form to the public, on the ground that syrup was an article required for domestic use! Would not the toleration of the practice be regarded as indicative of the most condemnable apathy? and yet we allow a much more formidable poison to be sold under similar circumstances. While, on the one hand, the government is exerting itself to preserve the lives of the community, by improving the drainage of towns, the supply of water, and the ventilation of the dwellings of the poor, &c., on the other, it is allowing a large annual mortality to take place from causes which might be diminished, if not prevented, by the most simple rules of medical police!

We have already, in a previous number of the Journal (May 30th, 1845, p. 212), inserted a list of various particulars in which the present system of mortuary registration is deficient: in the following points, also, the report under consideration is strangely defective:—

The *ages* and *occupations* of 221 persons murdered during the three years, 1838-39-40, are carefully given; but the *means* by which the deaths of these persons were effected, whether by wounds, suffocation, poisoning, &c. is not mentioned. This defect (which might have been easily supplied) suggested itself very strongly to us while drawing up the above remarks.

The verdicts of coroners' juries are

at present so very little to be trusted, that any precise information respecting the *causes* of sudden death can scarcely be expected to appear in the report; but, we perceive that, while the *ages* of those who died *suddenly* are not given, great care has been taken to record the ages of the individuals who perished by *violent deaths*. In this way valuable information has been withheld, while comparatively useless facts have been carefully collected: it can obviously be of very little practical utility to ascertain the ages of those who die from accidental violence, persons of all ages being liable to become the subjects of such casualties; but a knowledge of the ages of those who die *suddenly from disease*, may materially assist in the illustration of pathological laws.

In the year 1842, the deaths of 2,687 women are reported to have occurred from "childbirth" in England and Wales.

The manner in which these cases have been registered in the report is so vague, and the precise causes of death, as well as the periods of death after delivery, included under the general denomination of "childbirth," are so uncertain, that it is almost impossible

to draw any useful inferences from the tables with regard to the relative success of obstetric practice in the several districts. Thus, under the head of childbirth, it is left wholly doubtful whether the deaths were owing to natural causes, such as deformity, mechanical lesions of the uterus and its appendages, hæmorrhage, convulsions, puerperal fever; or to neglect, or malapragis.* Still, as this matter may hereafter become an important subject for investigation, and may throw some light upon the mortality caused by unlicensed midwifery practice, we have taken some pains to extract the facts contained in the subjoined table from the Report. It will be seen that it furnishes an average for one year (1842) of the general mortality of females,—of the number of registered births, which may represent, as nearly as can be ascertained, the number of deliveries. A deduction from this number, although not an important one, should be made for twin and triplet cases, but, as the Report furnishes no data for this, we make the calculation on the total births.† In another column are given the deaths from childbirth, and the ratio of mortality in the puerperal state.

Mortality of females and deaths from childbirth in 1842, in England and Wales.

	Number of births, males and females.	Total deaths of females.	Deaths from childbirth.	Ratio of mortality in the puerperal state.
ENGLAND . .	252,535	172,925	2,687	1 : 94
Divisions.				
Metropolis . . .	29,294	22,495	321	1 : 91
South Eastern . .	22,324	14,571	163	1 : 137
South Midland . .	18,652	11,953	168	1 : 111
Eastern	15,839	10,525	134	1 : 118
South Western . .	25,758	18,268	256	1 : 100·6
Western	30,731	21,823	316	1 : 97
North Midland . .	17,648	11,343	167	1 : 106
North Western . .	37,040	26,626	461	1 : 80
York ?	26,030	16,792	308	1 : 84
Northern	13,551	8,747	209	1 : 65
Welsh	15,668	9,782	184	1 : 85

Defective as the table necessarily is, from the imperfect returns on which it is based, it still shows a great difference in puerperal mortality. In five

of the great divisions of England, the mortality is above the average of the kingdom; and in six it is below that average. The mortality is at its *maximum* in the *northern division*, compris-

* A separate table, in which the number of persons who died from the effects of instrumental delivery; of flooding during or after labour, rupture of the uterus, puerperal convulsions, peritonitis, &c. &c. might easily be given in the future Reports; and the facts which it contained would not only be valuable in a medical point of

view, but might also tend to throw some important light upon unlicensed practice.

† See page 607. In a large number of births, twin-cases form about 1 per cent., triplets one in nearly 8,000 cases, and quadruplets, one in 574,293 cases.

ing Durham, Northumberland, Cumberland, and Westmoreland. In the *south-eastern division* the mortality is at its *minimum*, comprising the non-metropolitan parts of Kent and Surrey, Sussex, Hampshire, and Berkshire. On the whole, this table would lead to the inference, that the southern and eastern parts of the kingdom are much more favourable to female life in the puerperal state, than the northern and western. According to the census of 1841, the proportion of medical practitioners to the population is much greater in the south-eastern than in the northern division. We do not wish to lay too much stress upon the returns of a single year; but it is very probable that, in provincial districts, this high rate of mortality will be found on further inquiry to depend on the absence of proper professional aid, and on the malapraxis of unlicensed midwives.

We know that there is great difficulty attendant on the correct registration of the important medical details to which we have here adverted: but a considerable advance has been already made, and we trust that our professional brethren will co-operate with the Registrar-General, in his efforts to place the medical statistics of the kingdom upon a secure and lasting basis.

FLUID OF PYROSIS.

THE following remark by Dr. Copland suggests an interesting subject of investigation to those who are engaged in the cultivation of organic chemistry. "Since I commenced lecturing in 1825, I have argued, that the discharge from the stomach, in pyrosis, chiefly consisted of an augmented, and probably, also, a somewhat altered pancreatic secretion; that this secretion, owing to its properties, or its quantity, or to both, had been regurgitated into the stomach, and that its accumulation there had occasioned pain and irritation, followed by its rejection. Thus I have viewed pyrosis as being more correctly a form of *pancrea-torrhæa*, and have considered that alteration of the quality of the fluid has caused its ejection upwards, instead of its passage through the bowels. More recently, MM. Mondière and Guersent have espoused nearly the same view of the origin of pyrosis, ascribing it to the irritating quality of the pancreatic fluid.—*Dictionary of Practical Medicine*.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Tuesday, Nov. 11, 1845.

DR. CHAMBERS, PRESIDENT, IN THE CHAIR.

On the Minute Anatomy and Pathology of Bright's Disease of the Kidney, and on the Relation of the Renal Disease to those Diseases of the Liver, Heart, and Arteries with which it is commonly associated.
By GEORGE JOHNSON, M.D. of King's College, London. [Communicated by R. B. TODD, M.D. F.R.S.]

THE author began by stating that the true nature of Bright's disease was, he believed, to be found in a diseased state of the secretory or epithelium-cells which line the urinary tubules. He arrived at this conclusion in the first week of July of the present year, at which period he demonstrated his preparations to Professors Todd and Partridge; and a paper containing the result of his researches was given into the hands of one of the Secretaries of this Society on the 7th of August.

The author then stated, that he had ascertained that the secretory or epithelium-cells of the kidney contain naturally a minute quantity of oil in the shape of globules, such as are familiar to microscopical observers. The presence of these globules is constant in the kidney, but their quantity varies considerably within the limits of health.

Bright's disease, the author considers, may be described as *primarily and essentially an exaggeration of the fat which exists naturally in small quantities in the epithelium cells of the healthy gland*—a fatty degeneration of the kidney analogous to the fatty degeneration of the liver as demonstrated by Mr. Bowman*.

This accumulation of fat in the secretory cells necessarily leads to the engorgement and dilatation of the tubules which they line, and one or more convoluted tubes thus gorged with fat, and projecting either on the surface of the gland, or on the surface of a section, constitutes one of the so-called "granulations of Bright." Some Malpighian bodies were observed to contain no fat, whilst others contained gorged fatty cells; but the author had never observed in these bodies an accumulation sufficient to produce destructive pressure on the Malpighian tuft of capillaries. The frequent connexion of albuminous and bloody urine with Bright's disease, and the atrophy of the

* Lancet, Jan. 1842.

kidney, are attributed by the author to the mechanical operation of the above-described fatty accumulation. Having alluded to the circulation of the gland as described by Mr. Bowman, he entered into a minute detail of the reasons which led him to the conclusion that the presence of albumen and blood in the urine is, in this disease, a secondary phenomenon, dependent on the previous morbid changes.

In reference to the atrophy which the kidney so often undergoes in this disease, the author contrasted the well-known peculiarities of the vascular organization of this gland with the very dissimilar arrangement of the vessels and secretory cells of the liver, an organ which appears to suffer but little from a similar engorgement in its cells.

In speaking of the *stages* of this disease, the author observed that he had no reason for believing in the existence of any congestive stage as necessarily preceding the morbid accumulation which he describes. The various forms about which so much has been said and written, he believes to depend in great part, if not entirely, on the rapidity with which the disease advances. In cases of long duration, the kidney is generally found small, contracted, and granular. When the progress of the case has been rapid, the gland is large, smooth, and mottled.

The author then dwelt at some length on the frequent coincidence which he had observed of the disease in question with a similar fatty degeneration of the liver, arteries, and valves of the heart.

From the above data, the author deduced the important *practical conclusion*, that these fatty degenerations so often conjoined are of constitutional origin, and that they must not be considered and treated as local disorders. He repudiated the notion of Bright's disease having any specific connexion with scarlatina; neither did he believe in its alleged relation to acute inflammatory dropsy.

The causes of the disease are, according to the author, essentially debilitating: in large towns the disease is prevalent and fatal, in country districts it is comparatively rare. The disease has been artificially produced by Mr. Simon*, of King's College, in the lower animals by their continued exposure to depressing influences.

With respect to the microscopical characters of the urine in this disease, the author remarks:—1st, That the cylindrical bodies described by Dr. F. Simon are fibrinous casts of the tubes, frequently entangling blood-discs, oil-globules, or epithelial cells with fatty contents, 2d, That the presence

of much fat in the urine is an alarming symptom. In an advanced stage of the disease, fat rarely abounds; but, from experiments on the lower animals, as well as from observation on the human subject, it seems probable that in many cases of chronic ill-health during a period in which no especial attention is directed to the state of the urine, there may be eliminated with this secretion such an excess of fatty matter as would in reality mark the first stage of Bright's disease.

On the subject of treatment the author stated, that the obvious indications were—

1. The pursuance of a general tonic regimen in respect of diet, atmosphere, exercise, and medicine.

2. The careful avoidance of all exhausting remedies.

3. To avoid, as articles of food, fat and other highly carbonized materials. And

4. To relieve congestion of the gland by strict attention to the functions of the skin and bowels, and by such small bloodlettings as circumstances might demand.

Dr. Todd said that he rose at that early period of the debate for the purpose of bearing testimony to the accuracy of Dr. Johnson's statements. The admirable and lucid manner in which Dr. Johnson had expounded his views, would, he was sure, be generally acknowledged. He (Dr. Todd) had had the opportunity of watching the progress of the investigation, from its commencement in July to the completion of the paper which had just been read, and he would add, that he had rarely witnessed a more interesting inquiry. Independently of the intrinsic merit of this investigation, he felt that it was peculiarly important, as tending to turn the attention away from questions of mere vascular repletion, or the opposite condition, and to direct it to the real state of the elements of textures—as of the kidney, in the present case—as being those parts in which the seeds of disease are sown. According to the views now brought forward, we must count three stages in Bright's disease:—In the first stage there is a morbid state of the primary and secondary assimilating processes, giving rise to a diseased state of the blood. At this stage there are no very marked signs of disorder readily recognisable by the physician. The second stage is accompanied by a change in the attraction between the gland and certain constituents of blood, so that fat, which in health passes off by the kidney only in small quantity, is now attracted largely to its elementary parts, the epithelium cells, and accumulates in them to overloading. These gorged cells collecting in the uriniferous tubes, press upon the capillary plexus of their walls, and throw back the blood on the Malpighian tufts, causing

* Observations on the Artificial Production of Scrofulous Diseases in the Lower Animals. (Unpublished.)

congestion or rupture of them. And this is the third stage, in which the urine becomes albuminous, and other signs appear, which have been so well pointed out by the extraordinary clinical research of Dr. Bright and his followers. A strong feeling had been growing up among practical men as to a close connexion between this disease and scrofula. The author's statements respecting the artificial production of the disease in animals bore upon this subject; but further research was necessary before the exact nature of the connexion could be determined.

Dr. BRIGHT eulogized the paper, as showing great industry and perseverance. It was a paper of the greatest interest, and to himself more especially so. He could not vouch for the accuracy of all the conclusions come to by the author, but they bore the appearance of the greatest probability—they appeared like truth. Should future observers confirm the correctness of Dr. Johnson's investigations, a most important vacuum in regard to the disease under discussion would be filled up, and a more rational line of treatment would doubtless be the result.

Dr. COPLAND regarded the paper as one of the greatest interest; the chief point was new and striking, but there were particular statements in it which it was desirable to notice. It was stated by the author that the disease had its origin in mal-assimilation of the food by the organs of digestion, resulting from a morbid state of the blood. Now this was by no means a novel doctrine, for in a treatise which he (Dr. Copland) had published three years since, he had expressly stated this to be his opinion. He should be glad to know, in respect to the presence of fat in the epithelial cells of the kidney whether Dr. Johnson had any other than microscopical evidence of the correctness of his statement; had any chemical examination been made? Granting that the disease did arise from the presence of fat in the epithelial cells, how could we account for the large quantity of albumen found in the urine, the absence of salts in that secretion, and their presence in the blood? The treatment advocated in the paper was that which was usually pursued.

Dr. SNOW said that he felt a difficulty in admitting that the fat which Dr. Johnson had discovered in the minute tubuli of the kidney, could, by its mechanical pressure, be the cause of the escape of albumen, and other constituents of the blood, into the urine; for in the latter stages of the disease, when the amount of fat must be greatest, the quantity of albumen was diminished, and in many cases disappeared altogether. If there was any great amount of albumen, or blood, in the urine, in the advanced stage of Bright's disease, it was when, supervening on the disorder, there was an acute attack,

resembling the acute disease of the kidney from exposure to cold, or that which follows scarlet fever, in which acute diseases the author of the paper admitted that fat was not present. Whilst he (Dr. Snow) admitted that the disease in question generally commenced gradually, and was the result of cachexia, he considered that it sometimes owed its origin to an acute attack. In a child which died with dropsy at the end of two or three months, after scarlet fever, he found the kidneys so much hypertrophied, that they weighed a pound, and were, to some extent, affected with granular degeneration. Now the dropsy commenced in this child about twenty-one days after the commencement of the fever, and just in the same manner as it comes on in other children, in whom we know, from their perfect recovery, that there was no previous disease of the kidney. Dr. Christison had mentioned one or two cases of this disease, which seemed to owe their origin to scarlet fever; and Dr. Bright had related some which seemed to date their origin from an acute attack. If the patient should abstain from fatty and farinaceous and saccharine food, as recommended in the paper, the only sustenance left for him would be nitrogenous food, as albumen and fibrine, but, unfortunately, he was in constant danger of secondary diseases, as inflammations and coma, with convulsions, from the nitrogenous products of excretion, which the disabled kidneys could not duly separate from the blood.

Dr. BUDD had some time since been made acquainted with the views advocated by Dr. Johnson, and had put to the test the plan of treatment recommended. He had placed three or four patients in King's College Hospital, labouring under dropsy and albuminous urine, on a diet consisting of lean meat, bread and water, and abstaining from sugar, fat, and starch. He had also administered iodide of potassium and liquor potassæ. The result of the treatment, as far as it had gone, had been quite satisfactory; but of course at present it would be premature to draw any conclusion from it. It would be scarcely possible to over-estimate the value of the paper, which threw a flood of light on the pathology of the disease, and realized the sagacious suspicion of Dr. Prout with respect to the true nature of the disease. Considerable stress had been laid on the structural changes in this disease; but the question arose as to the origin of the fat formed in the epithelial cells. It had been considered, that in the fatty liver which prevailed in the advanced stages of phthisis, the fat was attributable to deficient aeration of the blood; but this opinion was not tenable, for depositions of fat in spinal organs was found, in all cases, attended with much fever and rapid wasting. He considered, that in

these cases there was not a deposition of new fat, but that the fat, stored in the system, was taken into the circulation, and re-deposited in the various organs found affected. The fatty livers in the well-known Strasburgh geese resulted from the causes he had alluded to. This view was further strengthened by the fact, that patients labouring under albuminuria were usually fat.

Dr. JOHNSON said, in reply to Dr. Copland's question regarding the evidence of the presence of fat in the kidney, that a microscopical observer was scarcely likely to confound fat globules with globules of albumen. He could, however, offer a chemical test of the accuracy of his statements, as he had, with Dr. Miller, commenced an analysis of portions of fatty liver and fatty kidney, by digestion in ether, by which it was shown that the former contained rather more than, and the latter about, one-sixth portion of fat. The analysis was not yet complete, or he should have alluded to it in the paper. When complete, however, it was probable that the fat would be found in even greater proportion. With respect to the observations of Dr. Copland regarding the treatment of the disease, he, Dr. Johnson, thought one important principle had never before been mentioned, that of the necessity of abstaining from fat as an article of diet.

Mr. TOYNBEE had, during the last three or four years, injected and examined as many as eighty kidneys. He complimented the author of the paper on his investigation, but he regarded the inquiry as yet not complete. He agreed with Dr. Johnson that it was not probable a microscopical observer would mistake albumen for fat. In the investigations which he had made, he had paid particular attention to the condition of the arterial, venous, and tubular vessels of the organ, and for this purpose had made minute injections. In this particular respect, Dr. Johnson's paper was deficient. He had observed in the advanced, and, indeed, even in the early stages of the disease, that the bloodvessels had become diseased; the plexus of vessels in the Malpighian corpuscles were enlarged to three or four times their natural size, as were also the tubuli. Dr. Johnson had also neglected to investigate the condition of the true parenchyma of the kidney, and had paid too much attention to the lining membrane and the epithelial cells, for the parenchyma consisted of corpuscles or cells which in this disease became much enlarged.

Mr. SIMON spoke of the great difficulty, and, indeed, impossibility, of injecting the kidney in Bright's disease, in consequence of the impervious condition of the vessels. With respect to the treatment of the disease, he differed with Dr. Copland, that the treatment recommended in the paper was that

which had been always pursued. Dr. Copland, in his Dictionary, had enumerated, among other modes of treatment which had been employed, and, among others, that of hydragogue cathartics—means which were quite forbidden by Dr. Johnson, to whom the profession were at least indebted for pointing out an explanation of the rationale of treatment.

Dr. COPLAND, in explanation, said, that in his own practice he endeavoured to improve the function of the digestive and assimilative organs; he ordered cuppings, to a small extent, in the loins, in the early stage of the disease, and exhibited chalybeates, with the view of improving the system generally. He had found much advantage from the tincture of muriate of iron, combined with tincture of lytta, or some other stimulant. He was at a loss to explain, from Dr. Johnson's theory, the occurrence of very acute cases of the disease, which could scarcely be considered to arise from a rapid deposition of fat in the kidney.

Dr. BUND said that Mr. Busk, of the Dreadnought, had, six or seven weeks since, exhibited to him some drawings of morbid kidney, which tended to confirm the views of Dr. Johnson.

Dr. TOMB remarked, that if Dr. Copland would weigh well the observations made, he would change the order of his treatment. Small bloodlettings in the early stage did harm, for it was only in the more advanced stages of the disease, when the accumulation of fat had taken place in the kidneys, and the organ became congested, that small bloodlettings did good.

Dr. C. J. B. WILLIAMS was not present when the paper was read, but he had gathered sufficient from the speakers to arrive at a knowledge of the main points of treatment advocated by Dr. Johnson, and that he deprecated any depletory measures, particularly in the earlier stages of the disease. Now he (Dr. Williams) knew no treatment so beneficial and successful as cautious bloodlettings in the early stages, particularly in the acute form of the disease. He had recorded twenty or thirty cases of albuminuria, altogether independent of scarlet fever, and coming on as an acute disease, in which, in the early stages, he had employed cupping on the loins, hydragogue cathartics, conjoined with medicines calculated to improve the general health, with the greatest success. He had found no improvement in the condition of the urine, until these means had been applied. The enlarged and congested state of the kidney, together with tenderness over the organ, demanded this plan of treatment. Depletion, on the contrary, was contra-indicated in chronic cases; he agreed with Mr. Toynbee as to the importance of attention, in the first instance, to the condition of the parenchyma of the

organ, as he (Dr. Williams) considered that the deposit of fat was a secondary effect, and not the *fons et origo* of the disease. There were certain conditions of the kidneys, somewhat resembling Bright's disease, in which there was diminution of the urine with albumen, but the water of the urine was diminished in quantity as well as the natural constituents of the secretion; but here, instead of having a mottled kidney, you had simply enlargement and induration; the organ did not abound in fatty, but in granular matter; and the cells constituting the parenchyma were increased in the number, and contained granules. Dr. Quain had also discovered these granules in the tubuli.

Dr. GOLDING BIRD, whilst according his fullest approbation to the ingenuity and industry displayed in the researches of Dr. Johnson, still felt compelled to withhold his acquiescence in the statement that the hypothesis now propounded was adequate to explain all the phenomena observed in the disease under consideration. The late hour of the evening prevented his alluding to more than one or two of the most important points, in which he felt inclined to regard Dr. Johnson's theory as insufficient. The great novelty of his views consisted in the parallelism he had drawn between fatty degeneration of the liver and the state of the kidney under discussion. Yet what was the fact? In fatty liver the secretion of bile went on tolerably well; at all events, remarkably so when the state of the gland itself is borne in mind, there being no evidence of the retention of bile in the blood, jaundice being by no means a necessary concomitant even of a very fat liver. Yet how different are the facts observed in the granular kidney which Dr. Johnson assumed to be in the state of fatty degeneration: here the two elements of urine are not properly excreted; on the contrary, albumen and certain elements of the blood appear in the secretion, whilst the patient is poisoned by the retained elements of urine. Hence, if Dr. Johnson's views be accepted, we must admit that fat deposited in the cells of the liver and tubes of the kidney produces very different results on the secreting powers of the organ. Further, the fact of diuresis, often copious in the latter stages of morbus Brightii, appeared to him to be quite opposed to the belief that increasing pressure on the vascular plexuses, by deposited fat, was an active agent up to the last stages of the disease.

Dr. WATSON having passed a high eulogium on Dr. Johnson's paper, the Society adjourned.

WESTMINSTER MEDICAL SOCIETY.

Saturday, Nov. 8, 1845.

Dr. SAYER, PRESIDENT.

Mr. DUNN exhibited to the Society a portion of a spleen which he had that day obtained at a post-mortem inspection. He expressed his regret at not being able to furnish a satisfactory history of the patient's case, but he had not on that account hesitated on bringing it forward; especially as opportunities for witnessing diseases of the spleen were rare, and as the portion before them presented a morbid condition which to him was new—he had not seen it before. It was acknowledged by the oldest modern physiologist, that we were still quite ignorant of the office of the spleen and its diseases, from their rarity. So far as his researches had extended, it appeared to have been little studied in this country. On an inspection of the portion before them, it would be at once perceived, he observed, that it did not present an instance of simple hypertrophy or enlargement, though in respect to volume he might just remark, it was about eight or ten times larger than the ordinary size of the viscus. It would be seen that the normal spongy texture of the spleen no longer existed; that it became consolidated, and on making a section through its substance, it presented more of a *carnified* than of a *hepatized* aspect. It had been taken from a poor woman, forty-two years of age, whom Mr. Dunn had been in the habit of attending for a great number of years, but whom he had lost sight of for the last three years, until a few days before her death, when he had been hastily sent for in consequence of a severe attack of epistaxis. He detected the enlarged spleen at the time of her last confinement six years ago, but how long it had previously existed he could not determine. She herself was not aware of its existence. He had attended her in six or seven accouchements, but had not, before the last, noticed any enlargement. She had suffered more during the last period of gestation, from flatulency, heartburn, and other dyspeptic symptoms, than on any former occasion. Her general health had given way, and she looked an altered woman. She had previously been an active, healthy, and industrious woman. Nothing particular occurred during the period of parturition; she did not go through it so well, and did not get about so soon as she had done before. About three months afterwards she had an inflammatory attack, which was referred to the region of the spleen, attended with local pain, sickness of stomach, and febrile derangement. On the

application of leeches, and the adoption of a strictly antiphlogistic mode of treatment, the urgent symptoms subsided; but she never recovered her former health and strength. The enlargement appeared to be greater. For some time she took liquor of potash and iodide of potassium, three times a day, and rubbed in a liniment night and morning, containing a soap liniment, potassæ hydriodatis, and spirits of turpentine. After a time, all remedial measures were abandoned, with the exception of strict attention to the state of the bowels, and a proper regulation of the diet. Mr. Dunn was much struck with her altered appearance when last called to her. She was blanched and faint from the loss of blood, unable to lie down on her bed, with a small feeble pulse, difficult breathing, and troublesome cough; there was great general emaciation, with ascites of the abdomen, and anasarca of the feet and legs. She seemed to be on the very brink of the grave, and died on the second day afterwards. At the post-mortem inspection, the viscera of the chest were found healthy; the heart pale and flabby. In the abdomen the liver was about twice the normal size, but did not appear to be unhealthy, and the other viscera did not present anything unusual.

Mr. DUNN regretted not being able to state to the Society whether she had suffered from intermitting fever. He had since learned from her husband, that, sixteen years ago, she had a severe attack of ague, at Shepherd's Bush; but she perfectly recovered, and from that time had had no symptoms of the complaint.

Dr. SAYER said that the spleen before the Society presented altogether a different appearance from that it presented when connected with intermitting fever. In the Walcheren expedition in 1809, he had seen an immense number of cases of disease of the spleen from ague. It generally broke down between the thumb and finger. He related a remarkable case, in which the spleen was so enlarged, that it reached from the left hypochondriac to the right hypogastric region, and weighed upwards of twenty pounds.

Mr. NORMAN made some remarks with the view of showing that no symptoms appeared to be peculiarly indicative of disease of the spleen. The presence of indigestion, in these cases, if it existed, might serve to show that the organ had some particular influence on the function of the stomach.

Dr. CHOWNE had seen many cases of disease of the spleen concomitant with ague, of which it appeared to be more generally an effect. Ague might exist to a great extent, however, without disease in this organ. He had seen the spleen more frequently enlarged in children than adults. Remedies applied

for the cure of intermitting fever also cured the splenic disease. He related a case in which the spleen was very much enlarged, and moveable, and the symptoms attending which were removed the moment the patient was under the influence of mercury. He had seen instances in which the spleen had become so far removed from its natural position as to be in front of the abdomen, and consequently mistaken for something else.

Medical Intelligence.

CAUSE OF THE DECREASE OF ABORIGINES. — ALLEGED STERILITY OF NATIVE FEMALES.

IN an interesting and highly philosophical work on the "Physical Description of New South Wales and Van Diemen's Land," Count de Strzlecki has called the attention of physiologists to what he regards as a curious fact connected with the uniform decrease of the aborigines of a country, on its discovery by a civilized race. The Count states that he has lived much among the races of aborigines,—the natives of Canada, of the United States, of California, Mexico, the South American republics, the Marquesas, Sandwich, and Society Islands, and finally those of New Zealand and Australia; and he offers the observations which he has made among these tribes, *not as evidences for the deduction of an ultimate conclusion*, but as mere facts fitted to lead physiologists to further inquiry into this grand and interesting subject.

It is generally admitted that the decrease in the aborigines of the countries above mentioned, has always begun soon after their discovery and subjection to foreign influence, and a question, therefore, presents itself, whether this arises from the increased rate of mortality, or from the decrease of births. Examinations among the oldest aborigines of every country, as, for instance, among those who remember the first American war in the United States, the government of the Jesuits in Brazil, St. Borje, Parama, and Lower California, the arrival of Cook and the early navigators in the South Sea Islands, New Zealand, New South Wales, and Van Diemen's Land, render it evident *that their longevity has not been abridged, that the rate of mortality has not increased, but that the power of continuing or procreating the species appears to have become diminished*. So far as this could be ascertained, this loss of procreative power did not appear to be connected with the male, but to depend entirely on the female.

Among the most remarkable facts bearing upon this question, is the result of a union between an aboriginal female and a European male,—an intercourse frequently brought about in these countries, either by local customs and notions of hospitality, or by the natural propensity of the sexes. Whenever this takes place, *the native female is found to lose the power of conception on a renewal of intercourse with a male of her own race, retaining only that of procreating with the white men.*

Hundreds of instances of this extraordinary fact are on record in the author's memoranda, all tending to prove that the sterility of the female being relative only to one and not to another male,—(or, to reverse the ancient English law of divorce, an *impotentia versus hunc*), and recurring invariably under the same circumstances amongst the Hurons, Seminoles, Red Indians, Yakies (Sinaloa), Mendoza Indians, Araucos, South Sea Islanders, and natives of New Zealand, New South Wales, and Van Diemen's Land, is not accidental, but follows laws as cogent, although as mysterious, as the rest of those connected with generation.

To this direct but occult cause of the decrease of the aboriginal race, may be added others, which, though acting indirectly, far surpass the evil consequences of the first, as their agency is seen to extend still farther, so as to occasion absolute sterility in the native female. Of these, leucorrhœa, which rages among them with unusual severity and aggravated symptoms, affords a most extraordinary instance; not only because its characters might be mistaken by many observers for secondary symptoms, or a modified elephantiasis, but because its origin among the native women dates precisely from the arrival of the European females amongst them.

Be the cause of the decrease and extinction of the aborigines of the New World what it may, it is certain that human interference to avert its melancholy consequence, has been hitherto of no avail; and that a charter for colonisation granted for one race, becomes virtually the decree for the extinction of the other.

[REMARKS.—The author, who appears to be in all he writes a trustworthy man, of a highly scientific turn of mind, states that his theory is founded on hundreds of instances occurring among aboriginal tribes in various parts of the globe. Such a theory can, of course, only be based on a very extensive series of observations; and one single fact in the negative, which it would be in the power of future travellers to seek for and record, would suffice to overturn it. We have heard it stated on good authority, that a similar physiological fact has been observed with regard to the procreative powers of some

of the canine species. One test of its truth might be, whether the converse condition exists. Does a white female, who has once borne a child to an aboriginal male, cease to lose all procreative power with respect to males of her own race? We think the Count should have taken up this part of the inquiry. We can, however, recommend his work to all our readers who are interested in the history of the human race, or the physical geography of the earth.—ED. GAZ.]

OBITUARY.

DIED at Copenhagen, aged 61, Charles Frederick Reinhardt, Professor of Zoology at the Royal University.

Correspondence.

ON THE UNCERTAINTY OF THE SIGNS OF POISONING.

BY W. H. FRY, ESQ. SURGEON.

A FEW years ago, I had the care of several persons who were poisoned by drinking beer that was brewed in a copper, previously used for boiling a large quantity of oxide of arsenic for agricultural purposes. The symptoms were so varied and extraordinary that no medical man would have been likely to guess their cause. In one of the cases (that of a person still living, and 76 years old), the stomach was never painfully affected, but the limbs became œdematous, and all the toe-nails separated!

The following is another case, which occurred to me three years ago. I was summoned to an inquest on an elderly female, who was found on the floor of her sitting-room in the act of expiring. An hour before, she told her servant (who was occupied in another part of the house), she was going to take an emetic, a remedy to which she resorted occasionally for jaundice. An empty half-pint bottle, in which antimonial wine had been procured, was on a table close to her. She had not vomited. I knew that children had died without sickness after an over-dose of tartarized antimony, and it was not an unreasonable supposition, that the feeble old woman had suffered fatal prostration from the same cause. The jury were about to return a verdict, when I applied my tongue to the mouth of the bottle, and became conscious of the presence of an acid. Leave was immediately granted to inspect the body; and, although the mouth was uninjured, the whole stomach was blackened, and so far disorganized as to allow of ready perforation by the finger. It contained above a pint of dark thick fluid, which yielded about an ounce of sulphuric acid. It was proved beyond question, that the same bottle had really contained the

wine of antimony, but whether the substitution of vitriol had been made by the woman herself with a view to suicide, or by some other person to destroy her, the jury were unable to determine. The bottle appeared dry, and had a vinous smell, so that the detection of the acid seemed rather accidental than otherwise.

Brighton, November, 1845.

REMARKS.—In reference to the above interesting cases, our correspondent has called our attention to the censure which is alleged to have been cast by a rival practitioner on Mr. E. Phillips, who has lately addressed us a letter on the subject of the *Shapwick Murders*.^{*} We quite agree with him in the opinion, that a most charitable interpretation should always be put upon the evidence of medical witnesses at coroners' inquests, where *gross negligence* is not apparent; and that, in answer to his question, under no circumstances, is it fair, that a rival practitioner should seize an occasion, which at the most amounted to a pardonable lapse of judgment, to make the conduct of a professional brother a subject of severe criticism or public exposure. So far with regard to the ethics of the question.

With respect to the *Shapwick* cases, we believe that ninety-nine medical practitioners of a hundred, would have done as Mr. Phillips did on that occasion. The symptoms of poisoning are undoubtedly often obscure, and unless the practitioner has had much experience in toxicological investigations, they may be easily overlooked or ascribed to natural disease. We think more blame attached to the coroner on this occasion than to Mr. Phillips; and we are acquainted with more than one coroner who, under the circumstances related by that gentleman, would have ordered an inspection on the spot, without taking into consideration the slight additional trouble thereby thrown upon himself and the jury, or the small additional expense (one guinea) thrown upon the county. There was undoubtedly room for suspicion; for so far as we gather from Mr. Phillips' account, the child died suddenly, and had not been seen or attended by a medical man, and the only account of the symptoms was derived from the hear-say statements of non-professional witnesses. It is too often forgotten in calculating the expenses of post-mortem examinations in doubtful cases, that for *every murder by poison which remains undetected, another murder is almost always perpetrated*. The appointment of medical officers under the new Health of Towns Bill will, however, render it less easy for such cases to be passed over in future. A *detective force* is required in medico-legal, as well as in other inquiries.

^{*} See page 1080.

ON THE SOURCE OF HÆMORRHAGE IN PLACENTA PRÆVIA.*

SIR,—It seems to me that the writers in the controversy respecting the treatment of placental presentations, overlook one very important point, to which I would beg respectfully to draw their attention.

When the placenta is situated about the cervix uteri, and becomes partially separated at the commencement of labour, we have frequently severe hæmorrhage, which is often either suspended, or very much mitigated, by rupturing the membranes, and allowing the waters to escape. This happy change may be correctly ascribed to the pressure of the child's head on the bleeding vessels; which, let it be borne in mind, in such instances, are situated at the part of the cervix, from which the placenta has become detached.

If there be any truth in the reason here given for the suspension of the hæmorrhage, it will not appear strange, that either in such instances, or where the placenta presents over the os uteri and becomes partially detached, that its removal should be followed by a suspension of the flooding. So long as the placenta remains within the uterus, the pressure of the head cannot be made efficiently on the mouths of the bleeding vessels; but let it be removed, and then the head will come more immediately in contact with their orifices, and thus may put a stop to the hæmorrhage.

This appears to me to be the proper explanation of the advantage (at least the seeming benefit) of the plan of treatment so strongly advocated by Dr. Simpson and others.

Hence, we do not require to have recourse to ingenious reasoning to prove that the blood proceeds from the placenta, in order to account for the suspension of the hæmorrhage in these cases. If the anatomical description of the placenta given by Weber, Wagner, and others, be correct, it is utterly impossible that excessive hæmorrhage can take place from its surface.

In fact, to maintain the proposition that the bleeding in the class of cases under consideration, takes place from the detached portion of the placenta, seems to argue great inattention to the structure of that body.

I by no means wish to enter into the question of the propriety or impropriety of the removal of the placenta, but would merely remark, that it seems to me a step involving serious responsibilities on the part of the practitioner.

The child's life is placed in the most imminent danger, and in ignorant and rash

^{*} From a correspondent who has forwarded his name.

hands the procedure must be pregnant with great risk to the mother; besides this, we have no *certainty* that the hæmorrhage will cease in any individual case. J. B.

Glasgow, November, 1845.

LETTER FROM PROFESSOR SYME.

SIR,—Not being in the habit of reading the "Medical Times," I only to day happened to notice the following passage in that paper, published on the 23d of August last: "Too true it is that, as has been said by O. P. Q. in reference to the appointment of Professors in general, there were circumstances connected with the nomination to the chair Mr. Syme occupies calculated not only to wither the young and ardent mind, but to annihilate the hopes, and to sicken the hearts, of some who had long laboured in the field of medical science. The late Mr. Russell, who had filled the chair of Clinical Surgery for thirty years, was allowed to dispose of it! He made it a matter of 'attorneyship;' and, after much wretched intriguing, on his part at least, Mr. Syme paid the price demanded—report said, an exorbitant one. Such was the inglorious manner he got possession of his chair. The transaction referred to was, doubtless, a very disreputable one, and discreditable to all concerned, but especially to the late Professor and to those who dispensed the Crown patronage in Scotland at the period to which I allude (1833). The plain and unvarnished state of the case is this: a rich old man (an octogenarian, or nearly so), in whom the maxims of philosophy did not moderate an insatiable desire of additional wealth, was permitted, if not coaxed, to make merchandise of a medical chair then in the gift of the Crown! He virtually "put it up" for sale, and "knocked it down" to the highest bidder. And to that disgraceful transaction those who were delegated with the honourable trust of filling the *Regius chairs* in the Scotch Universities were parties—parties that cruelly disappointed the cherished hopes of at least one admirably qualified aspirant to the chair in question." So far as this statement concerns myself, I should not think it required any attention; but as it throws an aspersion upon the conduct of a gentleman who is the brightest living ornament of his country, and who has ever been distinguished, above all things, by his high feeling of honour in the discharge of public duty—I mean Lord Jeffrey, who, as Lord Advocate, represented the government in Scotland at the time of my appointment to the chair of Clinical Surgery, and through whose recommendation I received my commission from the Crown—I beg you will have the goodness to reprint in your journal an extract from the "Refu-

tation of some Misstatements respecting the University of Edinburgh," which was published in 1834.

"The only other misstatements that require to be noticed are those respecting the chair of Clinical Surgery, the appointment to which that took place, on the resignation of the former Professor, might have been expected to be peculiarly agreeable to the private lecturers, who insist so much upon the strength of claims resting on experience and success in teaching. The present Professor was a private lecturer for more than ten years, during which he taught anatomy, surgery, and clinical surgery. It is well known that his surgical class progressively increased until the institution of a chair of systematic surgery in the University, and had exceeded the number of 250, which was more than double that of any other lecturer on the same subject in Edinburgh. How far he succeeded in regard to clinical surgery appears from the last Report of the Edinburgh Surgical Hospital, in which it is stated, that during the four years that Institution existed, he contributed to its support £1800, the chief part of which, it may be presumed, was derived from the fees of pupils attending his clinical lectures on the cases of the patients. The claims just mentioned are so strong that they have never been questioned; but it has nevertheless been complained that this appointment was 'the most complete of all jobs,' on the grounds that the chair 'was allowed to be sold to the present Professor; and that, as if to enable him to pay the price of the purchased chair (either two or three hundred pounds a-year), attendance on the new Professor's prelections was at once rendered imperative on students,' while the merits of a certain '*master surgeon*' were overlooked, 'he having refused to pay the bribe.' The best reply to this statement will be a simple relation of the transaction referred to.

"The former Professor, Mr. Russell, has stated*, that towards the end of the year 1831," an offer was made to him on the part of Mr. Liston of £300 a-year, on condition of resigning in his favour, and that he afterwards had several meetings with him (Mr. Liston), when they 'talked over the proposal, and the mode of carrying it into execution.' The Professor then communicated the proposal to his professional adviser, who informed him 'that no *private* agreement of the kind could be made, as there was an Act of Parliament voiding any appointment made on a resignation of office, if the terms on which the resignation was made were not specially set forth in the new commission.' 'All idea of a *private agreement* was therefore abandoned.' Thereafter

* Caledonian Mercury, April 1833.

(in October 1832) the Professor gave in a petition to government, praying to be allowed to resign, his successor being bound to pay him £300 a-year during his life, in consideration of his having established the class, having taught it for forty-six years, and his being in the eightieth year of his age. As soon as he had done this, he showed Mr. Liston a copy of the petition, and acquainted some other gentlemen who might be supposed to have views to the chair, with the vacancy that was likely to take place, and the terms on which, in that event, it would be supplied.

"Having been thus fully informed as to the state of the affair, Mr. Liston forwarded an application to Lord Melbourne, and addressed a letter to the Lord Advocate in recommendation of his claims*. His Lordship, in reply, to prevent the possibility of any misapprehension on the subject, explained that there would not be a vacancy 'unless the present incumbent is allowed to retain a share of the emoluments, not, of course, by any private arrangement with the successor, but by open stipulation in the appointment.' This letter was dated in November 1832; the appointment did not take place until March 1833; and Mr. Liston (although in full knowledge of the terms on which alone the office could be obtained) did not withdraw his application to Lord Melbourne until the commission of the new Professor arrived in Edinburgh. So much for the alleged purchase of the chair of Clinical Surgery. It may next be inquired how far it is true that the class was made imperative to enable the present Professor to complete the engagement to his predecessor.

"The Report of the University Commissioners, recommended that attendance on clinical surgery should be imperative on candidates for the degree; and the former Professor repeatedly brought the propriety of making this addition to the curriculum under the consideration of the *Senatus Academicus*. In the year 1825, clinical surgery was constituted one of the optional classes, and application was afterwards made by the late Professor to the Patrons of the University, for its being rendered fully imperative. This application was remitted to the *Senatus*, who reported, so lately as November 1832, that they did not think it could be expediently granted, on account of the defective provision in regard to cases for the subject of lecture possessed by the Professor, who having no patients in the infirmary under his own charge, lectured on the cases treated by other surgeons. The present Professor having been provided with wards in the Surgical Hospital of the Royal Infirmary, the *Senatus Academicus*, at the recommenda-

tion of the medical faculty, unanimously added clinical surgery to the list of imperative classes."

The writer in the "Medical Times," further remarks, "This act deprecated, in regard to the appointment of a Professor to the chair of Clinical Surgery in the University of Edinburgh, I say again was a disgraceful one, and its consummation a reproach to those who were entrusted with the responsible duty of superintending the appointment of Professors to regius chairs. There is, however, good reason to suppose that it will be long ere such chicanery be again practised in the disposal of a Professorship at Edinburgh or elsewhere in the Queen of England's dominions."

Now, in recent as well as former times, the Patrons have, on various occasions, appointed Professors under arrangements precisely similar to the one here denounced as standing alone in the history of the University. Since my own appointment the chairs of Logic, Practice of Physic, Institutes of Medicine, General Pathology, and Chemistry, have been vacated by the respective occupants on condition of receiving from their successors allowances of from £100 to £300 a year. Notwithstanding these encumbrances there have been keen contests by candidates of acknowledged excellence, and those who proved successful were never, so far as I know, charged with obtaining their preferment by 'purchase' or 'chicanery.'

I am, Sir,

Your most obedient servant,

JAMES SYME,

Professor of Clinical Surgery in the University of Edinburgh.

Charlotte Square,
29th October, 1845.

MEDICAL TREATMENT BY RELICS IN SPAIN.

In the large towns, certainly, some patients may "suffer a recovery" according to European practice, but in the country and remote villages, although the Government appoints a resident practitioner, the good old reliance on simples, relics, and charms, is far from exploded.

* * A medal of Santiago cures the ague, a handkerchief of the Virgin the ophthalmia, a bone of San Magin *El mal Frances*, a serap of San Frutos, loss of common sense; the virgin of Ona destroys worms in royal infantes, and her sash at Tortosa delivers royal *infantas*; the Zaragoza oils remove gouts and restore legs! The ancients raised temples to *Minerva Medica* or Esculapius, as Spaniards do altars to "Notra Senora de los Remedios" and to San Roque; and both thought that the tutelars did *at least* as much as the doctor. Alas! for the patient credulity of Spanish mankind, which still gulps down such quackery!—*Ford's Spain*.

INFLAMMATION OF THE HEPATIC DUCTS.

BY DR. OLLIFFE, OF PARIS.

MR. —, æt. 46, had enjoyed uninterrupted health, with the exception of the "Jungle fever," which he experienced in Bengal, about 25 years since, but it seems that no symptoms of acute hepatitis appeared. On his return from the East he suffered from nausea in the morning, which, though it continued for several years, had no influence on his general health. About eighteen months before Dr. Olliffe saw him, he was seized, at Venice, with intermittent fever, the type of which was not mentioned, and which yielded to the use of quinine. Four months afterwards he suffered from jaundice, but soon recovered under appropriate treatment. Seven weeks before his death he was seized with a febrile paroxysm, which was succeeded by complete loss of appetite and general debility. Dr. O. was called on the 1st of January. The symptoms then were, pailor, and slight icteric tinge of face; no appetite,—the patient chiefly complaining of this; tongue loaded with a thick yellowish fur; urine saffron-coloured, evidently by the presence of bile. The fæces did not present the white colour which distinguishes the alvine excretions of jaundiced individuals. There was no pain whatever in the hepatic region, nor, indeed, was there any throughout the malady. Percussion showed that the liver extended abnormally into the thorax, but its inferior border did not pass the last ribs. The febrile symptoms, which were renewed at irregular periods, were similar in every respect to those of intermittent fever. Mercurial treatment produced little or no amendment, but, under the use of quinine, fever, which had heretofore been irregular in its character, assumed the tertian form. At first this remedy seemed to produce beneficial results: in ten days the paroxysms had ceased, and the tongue was cleaned. But the improvement was of short duration; the fever soon returned, with evening exacerbations; the tongue dried up, the general debility was considerable, and the patient rapidly lost bulk. A slight effusion having taken place in the peritoneum, diuretics were employed, but without success; diarrhoea then supervened, the debility was extreme, and in a few days afterwards the patient expired.

Upon examination the peritoneum was found to contain about a quart of citrine serum. The liver was the subject of special examination. Its inferior margin did not extend beyond the last false rib; but superiorly it was enlarged; it pushed up the diaphragm considerably, and extended to the level of the fourth rib. A finger introduced into the *sulcus transversus* produced a rupture of the hepatic tissue, from which issued about 3vj. of yellow creamy pus. In

the middle of the superior surface of the right lobe was a circular eminence, of a dark brown colour, studded with black spots. On incising this, a quantity of pus oozed through several orifices; and the same occurred after the incision made in different parts of the organ; the orifices were found to be biliary ducts. The ducts were then traced upwards through their ramifications; they were much dilated, and all contained pus coloured with bile. Their mucous membrane was softened, and of a black colour; the gall-bladder contained a small quantity of dark-coloured bile, in which were found four small biliary calculi; the mucous membrane of the gall-bladder was red, injected, and rather softened. The vena porta and hepatic veins were next examined, and were found to be perfectly sound; the tissue of the liver was likewise sound, and contained no abscess, nor any purulent infiltration. With the exception of the heart being rather large, no pathological alteration was discovered in any of the other viscera. The author terms this disease "Purulent Catarrh of the Biliary Ducts."—*Abridged from the Dublin Hospital Gazette.*

EXTERNAL USE OF DIGITALIS IN SOME CASES OF DROPSY.

At the forty-first meeting of the Reading Pathological Society, a paper was read by Mr. Jeston, illustrating the power and value of the external use of digitalis in some species of dropsy. The form used, in connexion with warm clothing, purgatives, nutritious diet, &c. is as follows: Fol. Digit. ʒss.; Aquæ pur. flss.; Liq. Am. fort. ʒj.; Ol. Papav. ʒij. To form a liniment, to be rubbed in twice daily. In anasarca after scarlatina, and in anasarca unconnected with organic disease, its good effects were most apparent. In other cases, as hydrothorax after apparent cure, and after a lengthened interval, death occurred in a form somewhat sudden; the individuals in each such case had been indulging in fermented liquor, so as fairly, it was thought, to preclude the question of their disease being in any degree attributable to the use of digitalis.—*Mr. J. L. Walford's Retrospective Address; Provincial Medical and Surgical Journal.*

ROYAL COLLEGE OF SURGEONS.

Gentlemen admitted Members.

FRIDAY, Nov. 14.—R. Babington.—J. Walker.—A. C. Tweedie.—G. Foote.—P. Jones.—J. T. Hooper.—S. W. Harrell.—A. E. Ward.—D. J. Edwards.—J. D. Kilner.—H. B. Beck.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

THURSDAY, Nov. 13.—John Eddison, Worksop.—Gustavus Foote, Tavistock Street, Covent Garden.—Charles Howell Collins, Cheu Magna.—James Smellie, London.

Lectures.

CASES OF DISEASE OF THE OVARY

AND

VESICO-VAGINAL FISTULA,

Treated at Guy's Hospital.

WITH CLINICAL REMARKS

By J. C. W. LEVER, M.D.

Physician-Accoucheur, and Lecturer on Midwifery.

CASE I.—*Encysted dropsy of the right ovary—Previous history—Symptoms on admission—Exploratory puncture—Diagnosis—Value of uterine sound in treatment, constitutional and local.*

ALLOW me, gentlemen, first to direct your attention to the case of Eliza Richardson, who was admitted into Petersham Ward on the 13th of August last, a woman 40 years of age, of moderate conformation, with dark hair and pale complexion. She has resided in Lambeth for some time, and followed the occupation of a tailoress, frequently sitting at work for 12 or 14 hours a day. Her habits she stated were regular, and she has always had a sufficiency of food. Till within the last five years she has enjoyed good health. Twelve years since she married, but has borne no children, neither has she been pregnant.

Five years since she applied at Guy's Hospital as an out-patient, suffering acutely from pain in the front passage and (as she says) the womb. After some weeks there was a copious discharge of matter, and this discharge continued more or less in quantity, increased by exertion or excess of any kind for nearly four years: at this time menstruation was regular and painless. Ten months since she felt a fulness in the front passage, which sensation increased until the period of her admission. For two months she has suffered from pain in the right groin, extending to the hip and back: the pain is of a stabbing shooting character, and was not accompanied with any vaginal discharge.

Symptoms on admission.—Her countenance was anxious and indicative of suffering, the eyes sunk, and surrounded with a dark areola, respiration regular and natural, the pulse small and quick. The abdomen at its upper part is soft, but rather tympanitic, inferiorly it is full, on the left side free from tenderness and resonant, but on the right side dull on percussion, uneven, and causing her pain when slight pressure is made. About one inch and a half to two inches above the anterior superior spinous

process of the right ilium two or three rounded bodies are felt, having a restricted motion, and causing her pain when pressed upon, or when the limited movement is effected. Below these bodies, or between them and the brim of the pelvis, percussion returns a dull sound, and careful examination detects a distinct fluctuation. On the day of her admission into the hospital the catamenia made their appearance, but only lasted 24 hours. They had not occurred since the previous June, and at that time she attributes their appearance to a vaginal examination to which she was subjected, the monthly secretion not having taken place since the previous March. Her bowels are usually relaxed, and when soluble cause her no difficulty in their passage, but she possesses but slight control over the sphincter ani. If her motions are figured they have a flattened appearance. She suffers considerable pain in micturition, passing but little water at a time, and that with great difficulty; the urine, however, is healthy, and of good colour.

On examination "per vaginam" the uterus was found to be seated rather high, the os was patent, and readily admitted the uterine sound; this instrument was passed to the extent of rather more than three inches, and the viscus was found to be placed rather obliquely, its fundus directed upwards and to the right; the neck of the womb was flattened and pushed forwards.

By moving the uterus by means of the sound this viscus was found to be unconnected with the tumor occupying the right iliac fossa, and this was confirmed by keeping the uterus steady while the tumor itself was moved by the hand externally. The vaginal canal was obstructed by a swelling of a wedge-shape behind it, which could be traced as high as the finger could reach; pressure caused it in some measure to yield, although it occasioned her some pain. One hand placed on the abdomen, and a finger of the hand kept in contact with the tumor felt in the vagina, detected evident fluctuation. On examination "per rectum" it was found that the calibre of the intestine was much diminished, the examining finger could not be passed beyond or behind the tumor in the recto-vaginal septum, and fluctuation was as readily detected here as in the vagina. A catheter introduced into the bladder found the neck of this viscus pressed upon by the misplaced uterus; the organ itself was small, and directed to the left side.

August 27th.—Fluctuation was more distinctly felt. A grooved needle was passed into the posterior wall of the vagina, and about $\frac{3}{4}$ of watery fluid escaped through the groove, and an equal quantity flowed from the vagina after the patient was placed

in bed. After the sac was emptied the finger was readily passed "per rectum," but the cyst appeared to be firmly attached or tied down in the recto-vaginal pouch; the cyst could also be detected in the right inguinal region, and apparently lobulated.

Sept. 1st.—Patient in no pain, but feels weak. Ordered—

Dec. Cinch. c. Acid. Nit. Dil. ℥x. et T.
Cinch. C. ʒj. t. d. A pint of porter daily.

3rd.—The tumor feels more full; some uneasiness in the passage of the fæces, and the calls to void the urine are more frequent.

6th.—The sac is refilling quickly; it extends from the iliac to the right lumbar and inferior part of right hypogastric region; it causes considerable pain in the course of the sciatic and crural nerves; she has a slight limp in walking, not having so much power over the right as over the left leg, and the impotence of the sphincter ani has returned; the superficial veins of the right side of the lower abdomen are visible and distended.

Sept. 15th.—The abdomen was much distended with flatus; her other symptoms the same.

R. Pil. Galb. C. ʒx. alt. noct. sum.
et P.

29th.—Complains of pain in the course of the distribution of the obturator nerve.

Oct. 6th.—The tumor was this morning emptied by means of a trocar and canula; the fluid was of a dark red colour, coagulable, and after standing for some hours separated into a dark-coloured heavier mass, which gravitated to the bottom of the vessel, and a lighter-coloured supernatant fluid.

6th—11th.—Has had no unfavourable symptoms; pulse is quiet and appetite good. In the evening there were symptoms of the return of the catamenia, which made their appearance on the morning of the following day (12th), but lasted only 24 hours.

From this time she gradually improved, and left the hospital on the 21st.

Let me first direct your attention to this woman's previous history. From what I recollect of her case (for I have no notes to refer to) she suffered from an abscess situated between the vagina and rectum, which was of large size, and healed but slowly; at the time of her attendance as an out-patient I had no proof that it communicated with the ovary, or in fact with the cavity of the pelvis, although we see abscess of the ovary and pelvic abscesses occasionally empty themselves into the vagina; her attendance as an out-patient was irregular, and for some time the abscess continued open; the discharge was thin and yellow, and the sinus communicating with the vagina was long and tortuous. For some months, I may say for

a year or two, I lost sight of her, when she made her appearance again as an out-patient with ulceration of the posterior wall of the vagina, extensive in size and unhealthy in character. The Lot. Nigra cum Opio was applied locally, the Pot. Iodid. ex Dec. Sarsæ. C. was administered internally, and after about ten or 12 weeks attendance the ulceration had entirely healed. I now saw no more of her until the inconvenience she experienced from the tumor, which has been described, compelled her again to apply for my advice. Although I have no evidence to prove that the ovary was affected at the time this woman was the subject of vaginal abscess, or that the abscess itself communicated with the ovary, still it is highly probable that the irritation, then and there excited, might have induced the disease in an organ in which there existed a predisposition to morbid action. Further, let me direct your attention to her appearance and symptoms. At the time of her admission, the wan face, hollow cheeks, sunken eyes, with the dark surrounding arcæ, presented features quite characteristic of encysted ovarian disease, the face generally appearing to be elongated. What evidence did we derive by an external examination or palpation? There was a general fulness of the abdomen, and on the right side the superficial veins were greatly enlarged and distended; this appearance was absent on the left side; on pressure, the abdomen was soft on its upper middle and left-half of the lower division, but firm and unyielding on its lower and right side; to this locality the tenderness was entirely confined, and the examining hand readily detected some lobulated or rounded bodies at the upper part of the unyielding and painful swelling; percussion also elicited resonance from every part of the abdomen, with the exception of the right iliac and lumbar regions. But our vaginal examination materially assisted us in our diagnosis; this canal was found to be encroached upon—in fact, to be turned out of its course by a tumor behind it, a tumor fluctuating when pressure was made, and still more distinctly affording this diagnostic mark when the hand was placed on the abdomen. The uterus was also displaced; it was seated high in the pelvis, its os was open and directed forwards, and the viscus itself appeared to be flattened. It was of importance to ascertain if any and what was the connection between the womb and the tumor; for this purpose the uterine sound was passed into the womb, and the depth of its cavity was ascertained to be a little more than three inches, shewing an elongation of the viscus. The bulbous point of the sound could be felt through the abdominal parietes, not in the median line, but to the right side, proving there was right obliquity, which might have been ex-

pected from the position and seat of the tumor. By means of this instrument I decided that there was none or but slight connection between the womb and the tumor: for if motion were communicated to the womb by means of the instrument the tumor was at rest, and if the tumor were moved by the hand through the abdominal walls, it was not found that such movement was communicated to the uterus.

The examination "per rectum" also was of importance; this satisfied me as to the position and character of the tumor inferiorly; for with one finger in the vagina and the other passed into the bowel, the tumor could be felt in the recto-vaginal septum, and the fluctuation could thus be distinctly ascertained. The calibre of the intestine was greatly encroached upon; the finger could not be passed beyond the tumor; hence the flattened appearance of the motions when solid or figured.

The symptoms arising from the pressure of this tumor in the pelvis are worthy of your notice. I have alluded to the flattened or tape-like appearance of the feces when solid; but this woman had but a very slight control over the sphincter ani; and if her motions were soluble they frequently passed before she could reach the water-closet: this was doubtless due to the pressure of the tumor on the fourth and fifth sacral nerves, which chiefly ramify in the inferior portion of the rectum. This opinion is strengthened by the fact, that when the tumor was emptied of its fluid contents, first by means of the grooved needle, and subsequently by the employment of the trocar and canula, she recovered the perfect command of the sphincter. Again, there were marked symptoms, indicating the undue pressure and irritation to which the bladder was subjected; a catheter was with difficulty introduced, and for its passage the handle was compelled to be greatly depressed and turned to the right side. The viscus itself was situated on the left side of the median line and small; she had frequent calls to pass her urine; the quantity passed was inconsiderable but healthy, and its passage was attended with smarting pain. These symptoms were also relieved when the fluid contents of the cyst were evacuated, at first by needle, and afterwards by trocar and canula.

The pressure to which the nerves arising or travelling along the pelvis, was indicated by certain symptoms which well deserve our notice. I have already alluded to the pressure to which the sacral nerves were subjected, and the effect of such pressure. But the obturator, the sciatic, and at length the crural nerves, were injuriously acted upon. This was very evident from the symptoms;—when describing her pains, she accurately

marked out the anatomical distribution of these nerves. There was also a numbness in the right lower extremity, and its weakened power was shown by her limping when directed to walk across the ward. That these symptoms were produced by mechanical pressure on the nerves, is, I think, clear from the fact that they all disappeared when the tumor was emptied, the pains departed, numbness was lost, and she had as perfect control over the movements of the right as the left leg.

In forming my diagnosis of this case, grounded upon the examination, I was of opinion that the disease was encysted dropsy of the ovary, that the cyst had fallen into the recto-vaginal pouch, had there become adherent, (for when emptied the sac did not admit of the slightest movement,) and that it had continued to enlarge upwards into the abdomen, by an increase of its fluid contents. I was led to conclude that there were none, or but slight abdominal adhesions, from the circumstance that the tumor felt through the abdominal wall was moveable, and further, from the fact that the ovoid bodies which were seated in the upper part of the cyst descended into the pelvis when the tumor was emptied by the needle, gradually rose as the tumor refilled, and again descended when the fluid was drawn off through the canula. I cannot take upon me to say what is the nature of the rounded bodies, but I conceive them to be either multiple cysts or fibrous tumors developed in the upper portion of the large cyst.

The treatment that was advised in this case was twofold—1st, *Constitutional*. 2d, *Local*.

The constitutional powers of this patient were very depressed on her admission: her face was pale, her countenance anxious, her pulse small and quick, and her digestive powers weakened. We therefore directed our attention to improve the condition of the system by a generous nutritious diet, the administration of tonics, and to these a pint of porter was added. You can bear testimony to her improved condition when she left the hospital. The eyes had resumed a more natural expression, the dark areolæ had disappeared, the face had lost its pallor, the countenance its anxiety, her step was quick and light, and her spirits were good.

In determining what local treatment should be employed, I had to make my selection of five different methods of treatment—1st, The employment of pressure, with constitutional remedies; 2. The removal of the tumor; 3. The evacuation of the fluid by paracentesis; 4. The employment of injections into the cyst after its fluid contents were evacuated; and 5. Maintaining a catheter in the cyst after the

fluid was abstracted by the canula. With regard to the first—the employment of pressure—you are probably aware that Mr. I. Brown (see *Lancet*, May 4, 1844) has, in encysted ovarian dropsy, recommended very tight flannel bandaging; but if the cyst remain stationary, or evince a tendency to increase, tapping is to be employed, followed immediately by accurate padding with folded napkins, and a tight bandage, for two or three weeks. At the same time, he advises mercurial frictions on the abdomen until the mouth is slightly affected, a state to be sustained for some weeks. Diuretics are to be administered, and tonics after the first week. The diet to be light and nourishing, and the patient to take daily exercise.

I think you will readily grant that this was not a case adapted for tight bandaging, for the position of the tumor, between the vagina and rectum, would seem to contraindicate such a plan of treatment; and doubtless those evils I have before detailed, which arose from the mechanical pressure of the tumor, would no doubt have been increased if firm and tight compression had been resorted to.

Neither do I conceive that I was warranted in having recourse to an operation for the removal of the tumor; for although I do not intend upon this occasion to venture upon the "*questio vexata*" of ovariectomy, still, I am of opinion that the most ardent friends of the operation, whether by large, small, or median incision, would not have deemed the operation necessary in Richardson's case. Her symptoms were not sufficiently urgent to have warranted me in proposing an abdominal section; and if this had been made great difficulty would have been experienced in detaching the cyst from the recto-vaginal septum, where it had contracted close and firm adhesions. During my daily visits in the ward, I have been asked if the cyst might not have been removed "*per vaginam*." Such an operation, I conceive, would be attended with great danger, would be very difficult, if not impracticable; for, in addition to the close adhesions which the tumor had formed in the septum by which it was surrounded, it would be almost impossible to pass a ligature around its pedicle or sessile portion. I therefore determined, after exploring the tumor "*per vaginam*," to empty it of its fluid contents by a small trocar passed through the posterior wall of this canal, for as the tumor was readily reached in this situation it was advisable to avoid wounding the peritoneum, which must have been done had it been opened through the abdominal walls. There was little or no irritation following the operation, and in a few days after its performance the patient left the hospital. There were two other plans of treatment

placed before me, which have been proposed with the view of promoting the entire contraction of the cyst—1st, The employment of injections into the cyst; and 2d, The leaving in a canula or bougie, to excite contraction and prevent the re-collection of fluid. The first plan of treatment has been practised by Le Dran, Scudamore, Ramsden, and others, and cases are recorded by Denman, Lizars, and Martini; but the operation in the majority of cases has not been successful. In some cases it has been followed by serious and fatal inflammation, in others unattended with any appreciable result. Neither does the plan of converting the wound into a fistula, by means of a sound or catheter permanently retained with the view of slowly and gradually inflaming the parietes of the cyst, so as to reduce it to a small volume, appear to succeed. It is true, successful cases are mentioned by De Haen and Portal, but in three cases operated upon by Mr. Aston Key, and recorded in Dr. Seymour's work, one only recovered, while the other two died soon after of acute inflammation and profuse suppuration. In fact, the simple operation of paracentesis is occasionally followed by fatal results, arising from inflammation of the cyst. Although our patient left the hospital much improved in health, and with all her local symptoms relieved or removed, still I am inclined to believe that the cyst will refill, and that when sufficiently large it will again cause pressure on the pelvic contents; but, as the tumor can be so readily reached, and as paracentesis can be performed with so much ease and so little risk, I am disposed to prefer this palliative plan of treatment. It sometimes happens, although rarely, that one emptying of the cyst is sufficient, and that the collection does not re-appear. One case of this kind has passed under my observation. It is to be hoped that pregnancy will not occur in this case—and, indeed, the patient's age, and the number of years she has been married, render it highly improbable that she will now conceive for the first time—for an ovarian tumor, situated, as this is, in the recto-vaginal septum, and not admitting of reposition, must necessarily cause serious obstruction to the passage of the child. An interesting case of labour obstructed by a tumor, similarly situated, was published by me at page 41 of the first Vol. of the Second Series of Guy's Hospital Reports, in which, by means of a common lancet, guarded, I made an opening into the tumor through the vagina, evacuating more than a pint of a fluid containing fatty matter and cholesterine. The collapse of the tumor enabled the natural efforts to complete the labour within two hours. In the month of July last I saw another case, in which labour was obstructed by a tumor

similarly situated. This patient, before the commencement of her pregnancy, had noticed a tumor on her left side, which was moveable, unattended with pain or inconvenience. She suffered but little during her pregnancy, but noticed that the child was situated more on the right side. Labour commenced on Wednesday afternoon, and at 11 on the Thursday morning I was called in. I found the head of the child arrested by a tumor of large size, situated between the vagina and rectum, extending upwards on the left side of the pelvis, and affording distinct fluctuation. The vaginal aspect of the tumor was covered by numerous arteries; the posterior wall, as felt through the rectum, was thin, and there fluctuation could be more readily detected. A guarded lancet was introduced "per rectum," and upwards of two pints of a straw-coloured fluid were evacuated. Within ten minutes from the emptying of the cyst a living child was expelled. Some difference of opinion exists as to the part in which the puncture should be made. Some prefer making an opening through the vagina, while others direct that the cyst should be punctured "per rectum." There is no doubt that when the tumor is opened through the vagina a greater facility is given to a more complete evacuation of its contents; but if the vaginal puncture do not heal, there is danger lest the lochia pass into the cyst, and there excite inflammation and irritative fever. In this case I chose to operate "per rectum" for two reasons: in the first place, the tumor was more distinctly felt, its walls were here thin, and fluctuation was obvious; and secondly, the vaginal parietes were more dense, and were traversed by numerous large blood-vessels.

CASE II.—Case of vesico-vaginal fistula following labour terminated instrumentally ten years before—Vaginal opening detected with difficulty—Treatment by the introduction of a catheter and the application of nitrate of silver.

E. B. an unmarried woman of light complexion, aged 32, was admitted into Petersham Ward, on September 20th. Menstruation commenced early in life, and continued with regularity for two or three years, then disappeared, and was not again established until she had taken a considerable quantity of medicine. Ten years since, she was delivered of a still-born male child, after (to use her own words) "being in labour for three weeks," when at length delivery was completed by instruments. A serious and protracted illness followed her delivery, and when she recovered, she found herself totally unable to retain her urine. This incapacity for retention has continued up to the present time, although it is materially influenced by her position, for while recumbent, she can

hold her water for some time, but, if she assume the erect posture, the urine immediately gushes forth. There is a slight leucorrhoeal discharge; her health is tolerably good, although not very robust. Vaginal examination found the uterus bound to the posterior and left side of the vagina by a firm band or cicatrix; the viscus itself appeared healthy, and free from tenderness. A catheter introduced into the bladder abstracted about $\frac{3}{4}$ iv. of limpid pale urine; the fore finger passed along the roof of the vagina beneath the urethra, readily felt the instrument through the canal, but no fistula could be detected. On the 23rd, a careful examination was made by means of the bivalved speculum, both by placing the patient on her back, and also on her knees and elbows, with no more success; the urethra was large, the bladder itself small. She was ordered—

Zinci Sulph. gr. j.; Ext. Nucis Vomicae gr. $\frac{3}{4}$; Extr. Gent. gr. iij. in formâ Pil. ter quotidie sumend.

26th. There are slight convulsive twitches of the legs.

29th. For the last two nights her rest has been disturbed by pains and "startings" through the pelvis, and in the lower extremities the urine flows as before. The clinical clerk, Mr. Ramskill, carefully examined the vagina, and found a small opening in the roof, about half an inch on the right side of the urethra; through this he passed a probe; its direction was towards the neck of the bladder, and the extremity of the probe came in contact with a catheter passed into this viscus. An elastic catheter was ordered to be kept constantly in the bladder, and the nitrate of silver was ordered to be passed along the track of the sinus.

Oct. 7th. Most of the urine flows by the catheter.

8th. All the urine flows by catheter.

9th to 19th. Menstruation lasted for ten days, but the quantity of catamenial fluid secreted was not very considerable. Since this time the patient reports that all the urine passed through the instrument. On some days the bladder retained as much as half a pint.

20th. The instrument was removed, and its inner extremity was found incrustated with the phosphates.

On the 20th, 21st, and 22nd, she passed the urine naturally.

On the 23rd, slight dribbling.

On the 24th, the catheter was again introduced, and the Arg. Nit. reapplied.

On the 27th, the Arg. Nit. was applied by means of a thin silver probe, the bulbous end of which was coated round with Arg. Nit. by fusion.

On the 28th complains of a smarting pain

at the neck of the bladder, but says all the urine has passed by catheter.

30th. Instrument withdrawn, some incrustation, urine passed this morning tinged with blood.

Nov. 2. Urine natural in appearance, and flowing through the instrument.

The length of time which had elapsed between this patient's delivery and her admission into the hospital, prevented our gaining any specific information respecting the nature of her labour and the instruments by which it had been completed, whether embryospastic or embryotomic. I have no doubt, however, from the condition of the vagina, and from her own report, that sloughing followed her delivery. This opinion is confirmed by the firm band or cicatrix which ties down the uterus to the posterior and left side of the vagina. Stillicidium urinæ may follow a protracted labour, whether terminated by natural efforts or by instruments. It may appear directly the labour is completed, or it may not take place for several days after the delivery. In the former case it depends either upon paralysis of the sphincter or upon a fistulous opening or laceration; in the latter case it usually results from the separation of a slough, and the aperture thus made permitting the constant dribbling of the urine. It is of great importance that you should attend to the state of the bladder in all cases of protracted labour, and especially after delivery, where the labour has been finished by instruments, for, in the former case, the labour may be obstructed by the distended state of the bladder alone, forming a fluctuating oblong tumor at the lower part of the abdomen, situated in front of the uterus, from which it may be easily distinguished, causing great pain when pressure is made by the hand, as also attended with great suffering upon every return of labour pains, accompanied, as they are, by contraction of the abdominal muscles. On a vaginal examination, if we press up the uterus, or the presenting part of the child, to ever so slight a degree, a gush of urine will take place, but only in those cases where the distension is caused by the pressure of the presenting child. After labour also there may be so much swelling of the vagina, urethra, and neck of the bladder, mouth and neck of the womb, that the passage of the urine is at first mechanically prevented, the bladder becomes more and more distended, the abdomen consequently becomes large, the patient will not admit of any pressure being made on the abdominal walls. From the great pain it occasions, there is not unfrequently a considerable degree of constitutional excitement and fever, and the case is hastily set down by the inexperienced as one of peritonitis. The patient is bled, or leech-

ed, and calomel and opium are administered in heroic doses. Several such cases I have seen where I have abstracted large quantities of water by the catheter; in one case six, and in another eight pints. There is occasionally some difficulty in the passage of the catheter; in these cases of super-vesical distension, a small elastic catheter is to be preferred; you will find the meatus drawn up out of its usual situation into the vagina behind the symphysis; to this spot the forefinger of the left hand must be directed, and the instrument may be passed on the finger into the bladder. When the bladder has been over distended, many days frequently elapse before the patient can void her urine; it is therefore requisite for the attendant to empty it twice a-day.

Where stillicidium urinæ follows the separation of a slough, there is usually retention of the urine subsequent to the labour, rendering the daily introduction of the catheter necessary; but, so soon as the slough separates and leaves a chasm, either at the neck of the bladder, or in the urethra, stillicidium takes the place of retention. The long period that has elapsed since Burleigh's confinement, and the serious illness she experienced at that time, prevent her from giving us any information on this point.

Let me direct your attention to the difficulty that we experienced in detecting the fistulous opening. In the majority of cases, vesico-vaginal, or urethro-vaginal fistula, is readily detected by a digital examination, but in her case I could not discover the opening, either by my finger with the catheter passed into the bladder, or by the assistance of the bivalved speculum, although she was placed both in the supine and prone position. Some days after her admission, Mr. Ramskill, in carefully examining the whole vagina, detected a spot in which there was roughness, and in the centre of this an opening, into which he passed a probe, and thus tracked the sinus to the neck of the bladder, as proved by the introduction of a catheter into the urethra, the silver instruments coming in contact. If you examine with the assistance of a speculum, the patient should be placed on her knees and elbows; the bivalved instrument should be selected; when separated, the blades should be placed laterally, and if the patient be placed near a window a good light will be thrown upon the roof of the vagina, which is placed inferiorly, and may be examined throughout its whole course. In cases of vesico-vaginal, or urethro-vaginal fistula, of long standing, the bladder is usually small, arising from its continued empty condition. In this woman's case, there was some capability of retention, varying according to her position, &c. but still the size of her bladder was by no means large, and will not permit

her, without pain, to hold her urine, if 3vj. or 5viij. are collected.

The treatment that I have employed consists in the introduction of a full-size male elastic catheter into the bladder, and there keeping it by a proper bandage; its size is sufficiently large to fill the urethra, and to prevent the urine passing by its side, but not so large as to distend the urethra. It is withdrawn from time to time, to prevent the accretion of the urinary salts, which will cause irritation and pain, and for the purpose of having it cleaned. At the same time, the Arg. Nit. has been passed along the sinus: this was, at first, a matter of some difficulty, but our ingenious friend, Mr. Lund, has been kind enough to coat some silver probes, at their bulbous extremity, with the lunar caustic, to the extent of about an inch and a quarter; these, by their flexibility, are readily adapted to the vagina, and their application has so far been successful. For some days before the catheter was withdrawn she passed her urine naturally, and after its withdrawal there was no dribbling for three days, but on the fourth a slight stillicidium returned. In my opinion, the instrument was removed too soon; it should be maintained in the bladder until the seat of the former sinus becomes consolidated, and able to resist the pressure of the urine which collects in the bladder above. I am of opinion that this plan of treatment will succeed in this young woman's case; but if the nitrate of silver fail, I shall not hesitate to employ the actual cautery, for the small size of the fistula, and its length, are circumstances favourable to the cure.

MEDICAL FEES IN THE FOURTEENTH CENTURY.

THERE is the following entry in the household book of Henry II. "To Master William de Bromtoft, a physician, for his attendance on Sir Piers de Gaveston, during his illness at Newcastle-upon-Tyne, two pounds." An enormous salary was paid to the physician who attended Queen Isabella, (the "She-wolf of France"), during her confinement at Rasing Castle. In the *Fœdera* is a deed securing one hundred pounds per annum to Master Pontis de Courtrone, late physician to King Edward II., and now to the queen-mother Isabella; the bailiffs of Norwich are enjoined to pay him fifty pounds at Easter and Michaelmas, as long as he lives, for his great services to the queen-mother;—the document dated 1334. According to the value of money in that day, the salary specified above, was one of such extraordinary magnitude, that it must doubtless have been given as a reward for very remarkable services.—*Lives of the Queens of England.*

A COURSE OF

LECTURES ON DENTAL PHYSIOLOGY AND SURGERY.

Delivered at the Middlesex Hospital School,

By JOHN TOMES, Esq.

Surgeon-Dentist to the Hospital.

LECTURE II.

Relations of upper to the under row of teeth in closing the mouth—The alveoli—Nerves of the mouth—Blood-vessels of the teeth—The temporary teeth—The articulation of the jaws—Mastication—Structure of the teeth—Dentine.

GENTLEMEN,

HAVING in the last lecture examined separately each class of tooth, it will be interesting to review their progressive increase of size and of use, as we proceed from the anterior to the posterior part of the dental arch. The most simple form of tooth is in shape an elongated cone, fixed at its base, and adapted for seizing only. Such a tooth is not found in the human subject, but the next form in the order of complexity of use we possess, namely, a tooth in which a broad cutting edge is substituted for a point. Such are the incisors, single fanged teeth, with cutting edges, those of the upper jaw closing over those of the under jaw, like the blades of scissors, and in such a manner as to keep by use the edge of each tooth tolerably sharp. From the incisors we come to the canines, which teeth, terminating in an obtuse point, and having like the incisors an inclined lingual surface, are adapted, from their form and the strong deeply-planted root, for dividing or lacerating tough substances. In these teeth are the first indications of the development of two distinct fangs; thus exhibiting, in use and form, a third step towards the more complex teeth. Passing from the canines, the bicuspidæ present themselves. In these all the developments of the more complex form are observable. The crowns are tuberculated, and the root of the tooth, if not divided in two, is deeply grooved; and in a few examples the bicuspidæ of the upper jaw have three fangs, similarly arranged to those of the neighbouring molars. In use, the bicuspidæ are equal in the degree of their relative size to the molars which join them. The molars are in form the most complex of the human teeth, having several divergent roots and a tuberculated masticating surface—a conformation admirably fitted for triturating the food divided by the anterior teeth.

Relations of the upper to the under row in closing the Mouth.

The upper incisors and canines, when the mouth is closed, form the larger arch in

which they are arranged, shut over, and in front of the lower teeth, concealing the upper third of their crowns, while the external tubercles of the bicuspid and molars of the lower jaw are received into the depressions between the external and internal tubercles of the similar teeth in the upper jaw, thus allowing the external tubercles of the upper teeth to close externally to the outer tubercles of the lower row. From this arrangement of the tubercles, we are enabled in mastication to use the whole surface of the crowns of the opposing teeth; the act of mastication being performed by bringing the external tubercles of the under molars opposite those of the upper row, when, by the lateral motion of the under jaw inwards, the external tubercles pass down the inclinations of the external and up the inclinations of the internal tubercles of the upper jaw teeth, reducing in the action any interposed substance. It will also be observed that, from the difference of size laterally in the incisors of the two jaws, the central incisors of the upper extend over the centrals and half the laterals of the under row, and that the superior laterals lie over the remaining half of the inferior laterals and the anterior half of the canines of the lower jaw. The canines close over the halves of the first bicuspid and canines, while the first bicuspid impinge on the half of the first and of the second bicuspid of the lower row. The second bicuspid close upon the anterior third of the opposing first molar, and the posterior half of the second bicuspid. The first molars oppose the posterior two-thirds of the anterior, and one-third of the second molars of the lower jaw, while the second upper molars close upon the unoccupied posterior third of the second and the anterior third of the wisdom teeth. The wisdom tooth of the upper being smaller in size than that of the lower jaw, is perfectly opposed by that portion of the latter left unoccupied by the anterior tooth. By this admirable arrangement, no two teeth oppose each other only, but each tooth in closing the jaws impinges upon two, so that should a tooth be lost, or even two contiguous teeth, still the corresponding teeth of the opposite jaw are to some extent opposed, and thus remain useful. For when a tooth is wholly unopposed, a process is set up in the jaw by which the useless organ is gradually ejected. The direction of the teeth in the upper is vertically downwards and slightly forwards, while those of the lower jaw are placed vertically, the molars bending slightly inwards.

The Alveoli.

Having become acquainted with the external form of the various classes of teeth, we shall now consider the alveoli, or sockets

in which they are implanted. The alveolar processes bound the inferior border of the upper jaw and the superior edge of the upper jaw, and form curves more or less elliptical. They consist of an external and an internal plate, connected by transverse septa, the internal being the stronger of the two. The spaces between the septa receive the roots of the teeth, to which they are accurately moulded. The latter having been described, it is needless to repeat the description of their reverses. The septa are composed of less dense bone than that forming the external or internal alveolar plates, and are somewhat longer. At the bottom of each alveolus is found one or more foramina, through which the vessels and nerves pass in their way to the tooth. The external plates of the alveolar processes are in the anterior part of the jaws, irregularly fluted, the depressions corresponding to the septa. In the upper row the external convex surface of the roots of the teeth are sometimes near the apex without alveolar covering, but the neck is always inclosed.

The free edges of both the external and internal alveolar plates have a festooned margin, the concavities being opposite to the alveoli, and directed towards the crowns of the teeth. The walls of the alveoli are perforated by innumerable small holes for the transmission of vessels to the periosteum, by which the roots of the teeth are connected to their close fitting sockets. The surfaces of the alveoli are every where closely invested with periosteum, which on the free surface is clothed with mucous membrane continuous with that of the mouth, and thereby forming the gums, which having invested the external surfaces of the alveoli attach themselves to the necks of the teeth, and there terminate in a free edge which lies over the neck of the tooth and the terminal line of the enamel. The structure of periosteum and mucous membrane will be described by your lecturers on anatomy.

The kind of articulation by which the teeth are fixed is termed by anatomists *gomphosis*. The teeth are retained in their position first by the close adaptation of the alveoli to the fang, and secondly by the strong adhesion of the periosteum to the walls of the alveolar cavity and to the surface of the root. Where the fangs diverge, or are crooked, the teeth are held firmly by the corresponding shape of the alveoli, and offer strong resistance to the force employed for their removal. We shall, however, recur to this part of the subject when treating of the extraction of teeth. But it must not be supposed that the teeth in their healthy state admit of positively no motion. By taking a tooth by the thumb and finger it may be made to move, though slightly yet perceptibly, from side to side, arising from the compressibility and elasticity of the al-

veolar periosteum. This elastic tissue no doubt performs a double function; first, in contributing to retain the teeth in their place, and maintaining their vitality, and secondly, in diminishing the shock communicated to the jaws by the sudden closure of the teeth.

Nerves of the Teeth.

The teeth of each jaw receive their nerves from sensitive branches of the fifth pair. The molars of the upper jaw are supplied by the posterior dental, a branch from the superior maxillary nerve before its entrance into the orbit, which branch, dividing into twigs, passes into the substance of the bone by small foramina at the posterior part of the tubercle. The superior bicuspid and canines, and incisors, are supplied by two branches, the middle and anterior dental, given off during the passage of the nerves through the infra-orbital canal. The third division of the fifth nerve furnishes the inferior maxillary by which the teeth of the lower jaw are supplied. The inferior dental nerve enters the jaw by the posterior dental foramen, and lies in its course immediately under the roots of the teeth, to each of which it sends off a small branch, which entering the root through a small foramen is distributed to the pulp. The three superior dental from the infra-orbital nerve anastomose by their primary branches, from which and from a plexus formed by the secondary branches in the lining membrane of the antrum, two sets of nerves, directed one set (rami dentales) to the teeth, the other (rami gingivales) to the osseous tissue and gums*. The infraorbital and the inferior maxillary nerves, both before and after the origin of the dental branches, give off nerves to be distributed to the parts about the face, with which the dental branches anastomose; thus establishing links of connection by which sensation may be transmitted from one part to another throughout the whole course of the nerve. By tracing these intercommunications of the nerves we are able to understand the various sympathetic pains so frequently manifested in odontalgia, and in neuralgia and rheumatic pains, between the teeth and the neighbouring parts.

Blood-Vessels of the Teeth.

The teeth are dependent upon the *internal maxillary* branch of the external carotid for their connection with the arterial system.

The molars of the upper jaw receive their vessels from the superior maxillary, which sends in small branches at the posterior part of the maxilla. The anterior teeth of the upper row receive vessels given off from the infraorbital artery.

The inferior maxillary artery passing

downwards between the pterygoid muscles, enters the posterior maxillary foramen, and, accompanying the dental nerve, gives branches to the roots of the teeth which enter the dental foramina with the nerves, and are distributed to the pulp. The artery ultimately emerges with the nerve at the mesial foramen, and is distributed to the chin and lips, where it anastomoses with branches of the facial.

The dental arteries, in addition to the branches given to the teeth, contribute to supply the alveoli and neighbouring tissues.

The *milk teeth* are altogether smaller than their successors, not only in size, but also in number; the dental formula being, incisors, $\frac{2}{4}$; canines, $\frac{2}{2}$; molar, $\frac{4}{4}$. In the child there are no bicuspid, the space destined for them being, at this period, occupied by the temporary molars. The incisors and canines, in form, much resemble the similar teeth of the adult. One point of difference has, however, been observed by Mr. Saunders, in his lectures*—namely, that the enamel terminates on the neck of the tooth by a thick edge, as compared with the terminal line of the enamel of the permanent teeth. This observation applies equally to all the temporary teeth. The milk canines in the upper jaw, except in size, are like their successors, but those of the under jaw are more curved than the permanent teeth, and have their lateral surfaces curved, as in the canines of the upper jaw. The deciduous molars are altogether dissimilar to their successors, the bicuspid, but in the number of their roots, and to some extent in the form of their crown, resemble the permanent molars. The *anterior molars* have crowns flattened laterally, both in the lower and in the upper row. In the upper they are furnished with three cusps, two external and one internal; the latter being the larger. In the under teeth, the crown is indented by a crucial fissure, situated up the base of five cusps, the two anterior being the larger. These, the first temporary molars, resemble, therefore, the second, rather than the first permanent teeth of the same name. The *second milk molar* resembles, in the shape of its crown and in the number and disposition of its tubercles, the first permanent molar. Thus, in the upper jaw, the anterior internal and posterior external are united by an oblique ridge, while, in the lower teeth, we have a crucial fissure at the base of four cusps, with a fifth cusp wedged in between the two posterior cusps. In addition to the peculiarities already enumerated, we find that the roots diverge from the neck of the molars at a greater angle than do the fangs

* Lectures on Diseases and Operations of the Teeth, by Edwin Saunders, Esq.—The Forecups, 1844

* Swan on the Nerves.

of the adult teeth. Although the temporary are less in size in each direction than the permanent molars, yet they are greater in their antero-posterior diameter than their successors, the bicuspid; so that the latter teeth, as they disappear, leave space anteriorly from the permanent incisors and canines, which being larger, occupy more space than that vacated by their predecessors.

The portion of the jaw occupied by the milk teeth, corresponds, in size and shape, to the anterior parts of the adult maxilla occupied by the incisors, canines, and bicuspid; and the line described by the outside or labial surface of the teeth is in each a semicircle. The permanent molars are developed posterior to the milk molars, and are not, like the anterior teeth, preceded by temporary teeth. This, however, will be explained when speaking of the development of the teeth.

Before leaving the descriptive anatomy of the teeth and alveoli, it will be well to consider the form of articulation of the jaw, by which the organs of mastication are made to operate upon the substances submitted to their action. As we have the extreme of form in teeth adapted, the one for simply piercing, the other grinding, so we have corresponding extremes in form of maxillary articulation; the one admitting of motion in the vertical plane only, in which articulation the jaw can be opened and closed only, the other allowing motion not only in the vertical, but also, to some considerable extent, in the horizontal plane, in which form of articulation, the teeth being closed upon the food, are moved laterally; in this action, the surface of the opposing teeth rubbing forcibly upon each other, reduce to small particles the interposed food. In the carnivora, where lateral motion is not required, the condyle of the inferior maxilla is narrow from behind forward, broad laterally, and is closely embraced by the glenoid cavity, which is not larger than is required for the reception of the condyle; but in many of the herbivorous animals the condyle is broader, and is received in a large flat glenoid cavity, in which it can move forward and backward as well as upon its axis.

In producing the lateral motion, one condyle is moved towards the posterior margin, and the other is advanced towards the anterior margin of the glenoid cavity.

In the human subject is found a form of articulation intermediate between the two extremes, and is thus in strict harmony with the teeth which are of intermediate development between the carnivora and herbivora. In the infant, prior to the eruption of the teeth, the maxillary articulation admits of scarcely any lateral motion, which inability arises from the glenoid cavity being but slightly larger than the received condyle.

In old age, after the loss of the teeth, the lateral motion, from want of use, is much diminished, if not altogether lost. After the loss of the teeth, and the consequent absorption of the alveolar processes, the distance between the chin and nose on closing the jaw is diminished, and, as ordinarily computed, to the extent of an inch and a half. In this state, when the mouth is opened, the under jaw is seldom depressed lower than to the point which it occupied in the closed state, when armed with teeth. The condyles are, therefore, seldom advanced to the anterior margin of the articular cavity, and as parts out of use cease to be capable of use, so the absence of necessity for use is followed by inability. Thus the loss of the teeth operates as a cause in diminishing the power of motion in the aged jaw, first, in destroying the necessity for lateral motion, and secondly in diminishing the amount of the vertical action of the jaw.

The Structure of the Teeth.

Of the various tissues with which the human frame is constructed none are more beautiful or more instructive to the inquiring physiologist than those forming the teeth, and at the same time none are more easy of demonstration, if the microscope be used in the investigation. As I before observed, the dentinal tissues are three—namely, Dentine, or tooth-substance; enamel, and cement, or, more properly, tooth-bone.

The enamel invests the more prominent parts of the crown, from which points it gradually diminishes in thickness till it terminates in a line on the neck of the tooth. The cement, or dental bone, is thickest at and near the end of the root, and gradually becomes thinner as it advances towards the crown of the tooth. In a tooth that has been used for some little time, the cement terminates where the enamel commences, but there is reason to believe that a thin layer is continued over the enamel. Of these tissues, dentine, as forming the great bulk of the tooth, and thereby becoming the most important, will first demand our attention. The pulp cavity occupies the centre of the dentine, and on its surface are superimposed the enamel and the tooth bone, the former investing the crown and the latter the surface of the fang. These two tissues form a layer of variable thickness in different parts of the teeth. This layer, however, is soon worn off when the tooth comes into use. If the enamel and cement be removed from a tooth, and the dentine alone allowed to remain, still the tooth retains much of its original shape, losing most at the two extremities, while, in point of size, the loss sustained is comparatively slight. Thus shewing the den-

tine to constitute by far the greater portion of the tooth.

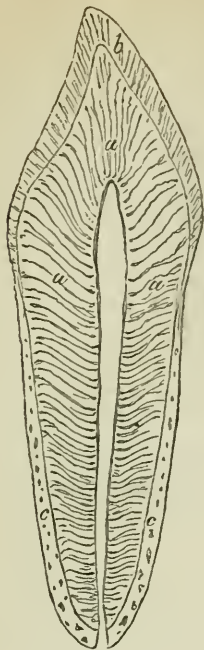


FIG. 1.—Longitudinal section of a canine tooth, showing the three dental tissues. *a*. The dentine, or ivory *b*. The enamel. *c*. The cementum, or dental bone.

The dentine is made up of two distinct parts; first, dentinal tubes; secondly, inter-

tubular tissue. The tubes have distinct parietes, equal in thickness to their calibre. In some instances they appear to contain a minute granular matter; but in many, perhaps in the majority of cases, they are perfectly free from solid contents. If a vertical section, passing through the pulp cavity, be taken for examination, the dental tubes may be traced from their commencement on the surface of the pulp cavity, to their termination at the junction of the cement, and the dentine on the enamel and the latter, or they may be seen passing into these external structures. The tubuli commence at a right-angle with the surface of the pulp cavity, and proceed outwards towards the surface of the tooth, giving out in their way numerous small branches, which, meeting with other similar branches from neighbouring tubes, anastomose with them, or, meeting with simple cells in the intertubular tissue, there terminate. Towards the surface of the dentine it is not uncommon to see a tube receive its course, and, by joining another, form a loop. The tubes all commence in the pulp cavity, and pass outwards towards the surface of the dentine. Their course, as regards each other, is divergent, so that the proportion of the intertubular tissue increases relatively as this distance from the pulp cavity is greater or less. This preponderance of the intertubular over the tubular tissue near the periphery of the tooth is, however, in a considerable degree lessened by the more frequent branching of the tubes, and by the occurrence of cells near the surface of the dentine. If a single tube be traced through its whole extent, it will be found to make two undulations, and in addition to these, which are called the primary curves, a number of smaller undulations.

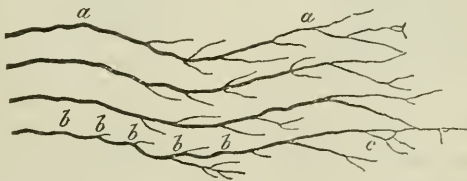


FIG. 2.—Dentinal tubes as seen by a low power, showing the primary curves, *a*, the secondary curves, *b*, and the branch-

ings with the anastomosis of the branches. *c*. A tube assuming the form of a bone corpuscle.

In examining this structure, a thin section may be taken from the fang, and with the aid of the microscope viewed by transmitted light. A tube will then appear as a very definite dark line pursuing its tortuous but definite course towards the surface, giving out numerous minute branches on its way, and at last dividing into two terminal branches, which end either by passing into a cell of the intertubular tissues, or by

anastomosis with a collateral tube, or by passing into the cement. If the section be taken of the dentine and enamel, then the tubes will be seen to give out comparatively few branches till they come near the latter, when they divide and anastomose freely, and some few terminal branches may be traced entering the enamel. It is by no means uncommon for a tube in its course to suddenly dilate and give out branches from the dilata-

tion ; then again contract, and pursue its original course. In such a case the dilatation



FIG. 3.—A longitudinal section of dentine, showing a dentinal tube dilated, and sending off anastomosing branches to the neighbouring tubes.

forms a cell in every way similar to the bone cell or corpuscle, of which some account will be given when we trace the structural relations of dentine or bone. When seen by transmitted light ; that is, when the object examined is placed between the light and the eye, the tubes appear as dark lines, unless a very high magnifying power be used, or unless the tubes are very large, such as are found in the teeth of some fish ; take, for example, the wolf fish ; there the tubes are marked by two parallel dark lines, with a narrow line of light interposed. Instead of this appearance a sub-granular matter, in some cases, seems to occupy the area of the tubes.

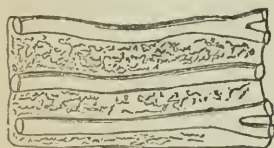


FIG. 4.—Longitudinal section of dentine highly magnified. *a.* The dentinal tubes. *b.* The intertubular tissue, in which is shown the granularity.

The dark line so constantly seen with a low power is, I think, no proof that solid matter is contained in the tube, for the appearance described may be exactly imitated by introducing minute globules of air into a fluid, and then placing it on the field of the microscope, when, by transmitted light, each air globule will be bordered by a dark line, while the centre is light. The dark line, in this case, is dependent for its origin upon the interference of light produced upon the ray of light—by the curvilinear form of the globule, which refracts the light at such an

angle that it precludes the possibility of the rays passing through the lenses of the instrument. If the dentinal tubes be examined by reflected light ; that is, if the section be placed upon a dark ground, and the light be made to fall upon it instead of passing through, as in the former experiment, then the tubes will be seen as opaque white lines placed in a transparent medium. This appearance would at first sight seem to indicate that the tubes are filled with solid granular contents ; however, in this as in the former instance, the appearance can be imitated without the presence of granular matter. If a transparent substance, as glass, be taken and reduced to powder, and the powdered mass be examined by reflected light, it will appear as an opaque white substance, studded with transparent particles. In this instance the opacity is clearly due to the refraction from the minute particles being at such angles that the rays of light pass external to the field of the glass. But the dentinal tubes may be rendered perfectly transparent if they be filled with transparent substances of greater density than air. This may be effected by immersing sections in Canada balsam or spirits of turpentine. In each of the foregoing methods of demonstrating the dentine tubes, the areas only are seen ; but if a section be taken external to, but parallel with, the length of the pulp cavity (in which cases the tubes will be cut transversely), then the parietes of the tubes will be seen with the intertubular tissue, in which they are impacted.

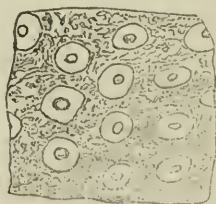


FIG. 5.—Transverse section of dentine. *a.* The tubes, with their parietes and area seen. *b.* The intertubular tissue.

In the year 1837 I was engaged in examining the structure of teeth, and then came to the conclusion that the dentinal tubes contained an amorphous salt of lime. My opinion was grounded on the following experiment :—After preparing a thin section of human tooth, I placed it in the field of the microscope, and then added a little diluted muriatic acid. No sooner was the acid in contact with the section than evidence of chemical action was rendered visible by the appearance of bubbles of gas, and these emanating not only from the external surfaces of the section, but also from the

interior of the tubes, from which bubbles of gas were seen issuing in quick succession. When the action ceased, the tubes no longer presented the appearance of opaque dark lines, but were indistinctly seen filled with transparent fluid. At the time, much struck with the result of the experiment, I was led to the opinion, that the gas generated in the tubes was produced by the decomposition of their solid contents, which I supposed to be carbonate of lime; however, upon more extended observation, I was induced, from the examination of teeth in which the tubes are large, and also from the examination of the tubuli of the human tooth with high power, to modify my first opinion, and was compelled to adopt the views advanced in the former part of the lecture, and to regard the evolution of gas from the tubuli as evidence of the facility with which fluids are admitted into their interior, and to consider that the source of the gas existed in the decomposition of the parietes of the tubes rather than of their contents.

The point of greatest diameter of the dental tubes is at their commencement on the walls of the pulp cavity, though in their course previous to the division of the trunk into two terminal branches they suffer but little loss in calibre.

In tracing this structure in the teeth of various animals we find every form of branching; sometimes the branches are few, in others extremely numerous; in one instance given out from one side of the tube only, in another from each side; but whatever the modification in the number or form of the branching given out, the primary tube always commences by an open extremity on the walls of the pulp cavity, or upon the walls of a canal for a blood-vessel; and the direction taken by the tubes is invariably towards the periphery of the tooth, always anastomosing in their way by the numerous branches.

In the temporary, and not unfrequently in the permanent teeth, the tubes instead of presenting an uninterrupted line present on their surface numerous indentations just as though they were composed of a series of hollow beads, which were united and made to communicate with each other. This appearance has led Mr. Nasmyth to conclude that the teeth instead of being composed of tubes are made up of vacuated fibres*, of which he gives a drawing, separated from the intertubular tissue. This appearance, however, admits of another explanation, which will be given after the development of the dentine has been explained.

* Memoir on the Development of the Teeth, by Alex. Nasmyth. 1842.

REDUCTION OF RETROVERTED UTERUS.

IN certain cases of extreme difficulty encountered in the attempt to reduce the retroverted womb while the patient was lying upon the side or the back, I have readily effected the reposition, upon directing the woman to place herself upon her knees, with the thighs at right angles to the bed, and perfectly vertical, while the top of the thorax, or rather the sternum, should be in contact with the mattress. In such a position, not only is the weight of the viscera taken off, but what is of greater consequence the power of tenesmic resistance is wholly abolished, while the position favours, in the highest degree, the reposition of the womb. In this posture, the woman cannot bear down. I consider such a position as favouring the reduction in a degree far greater than the large bleedings recommended by Dr. Dewees, who bled, *ad deliquium*, for the purpose of abolishing the tenesmic power, or the power to bear down, which he considered as one of the chief obstacles to success. In such a position the surgeon can scarcely fail of success, except in cases where reduction is rendered impossible from adhesions contracted in consequence of a long chronic state of retroversion—such cases are to be held as incurable.—*Dr. Meigs.*

RESEARCHES OF DR. DESIDERIO, OF VENICE, ON SULPHATE OF QUININE.

THE conclusions drawn from his experiments and observation may be stated shortly:—1st. That sulphate of quinine may act as a poison; a scruple of the salt will kill a healthy rabbit. The symptoms that invariably precede death in poisoning animals with sulphate of quinine, are:—Drowsiness, immobility, obscurity of vision, and drooping of the eyelids. 2d. Acetate of morphia accelerates the effects of poisoning by sulphate of quinine. 3d. Cherry-laurel-water in small doses frequently repeated retards the poisonous effects of sulphate of quinine, and may even remove them altogether: so does foxglove. 4th. Blood-letting is the most certain remedy. 6th. The symptoms following a poisonous quantity of sulphate of quinine in man, are:—Lassitude; drowsiness, without the power of sleeping, however; deafness; dilatation of the pupils; dulness of intellect and memory; eyes dull and heavy, with drooping of the eyelids; and gastro-intestinal irritation. A young Italian lady, who had taken 22 grammes (about 5ss.) and who had exhibited the usual symptoms, was cured by general and local bleeding. Sulphate of quinine is an antidote to the poison of the viper; it cures dropsy supervening on fevers.—*Dublin Med. Press.*

Original Communications.

OBSTETRIC REPORT OF CASES

OCCURRING IN THE PRACTICE OF THE

*Infirmiry of St. Giles and St. George,
Bloomsbury, and of the Northern
Dispensary,*

During Three Years ending April 30, 1845.

BY JAMES REID, M.D.

Physician to the Infirmiry of St. Giles and St. George, Bloomsbury; Physician-Accoucheur to the General Lying-In Hospital, and to the Northern Dispensary.

[Continued from p. 690.]

PLACENTA PRÆVIA :

Expulsion of the Placenta, occurring an hour before that of the Infant.

I INSERT the following case in the present report, although it has occurred since April last, as it may be found to present one particular point of interest connected with the discussion which has lately taken place in the MEDICAL GAZETTE between two eminent obstetric practitioners in this metropolis and Edinburgh.

Oct. 12th, 1845.—Hannah Smith, æt. 23, of a weak and delicate habit, much emaciated, and frequently irregular as to her menstrual function, states that she was married eight months ago, and has had no return of the catamenial discharge since that period. She asserts that she was quite ignorant of her being pregnant until the present time, but this has been since found to be an incorrect statement, as her marriage took place only a week since, and she is advanced to the middle of the seventh month of pregnancy. Two months since she had profuse uterine hæmorrhage—a fact which she did not mention to her friends—and on Oct. 6th, the day after her marriage, this discharge returned copiously, lasted five hours, and then gradually abated without the employment of any remedies. On the 9th, the patient having walked a considerable distance, the sanguineous discharge again recurred, and amounted to complete flooding; immediate assistance was now applied for at the Bloomsbury Dispensary; and Mr. Lloyd, who visited her, recommended that she should be kept perfectly quiet, and prescribed for her. She remained in bed without any return of the hæmorrhage until the 12th, when she got up about noon: still more severe flooding now took place, and continued for about an hour, when the placenta was expelled; the hæmorrhage immediately ceased, and there was no recurrence of it at any time after this. The midwife was sent for, but did not

arrive until more than an hour had elapsed, when she found the infant presenting with the feet, and in a short time it was with manual assistance removed. The placenta and funis appeared quite blanched, and their blood-vessels were completely emptied of their contents.

The patient, who, as I have already stated, was at all times weak and delicate, was now quite prostrated by the great loss of blood which she had sustained, and was ordered by Mr. Bennett, who afterwards visited her, to take strong nourishment frequently, opium and tonics. Her system, however, was unable to rally, diarrhœa supervened, and she sank under its effects on the 20th instant, eight days after her labour.

CASE XIII.—*Partial presentation of the Placenta.*

Jan. 1843.—E. W., æt. 23, a healthy-looking woman, had arrived at the termination of the seventh month's gestation, but during the sixth and seventh had suffered from occasional floodings, the last attacks having become more serious as to the extent of the uterine hæmorrhage, and the effects produced by it on the system. Labour pains supervened, and continued to increase in strength, but accompanied by some amount of hæmorrhage; and on examining the os uteri, it was discovered to be partially covered by the placenta, the mass of which was attached to the cervix. The vertex of the infant presented, and speedily was forced down by the uterine contractions, forming during its progress a very efficient plug, and controlling the loss of blood until the child was expelled. The placenta and chord were removed immediately afterwards, and presented a blanched appearance, from the vessels having been thoroughly emptied of their contents.

CASE XIV.—*Partial presentation of the Placenta.*

Oct. 6th.—I was sent for to visit this patient, residing in Star Court, as she was suffering from profuse uterine hæmorrhage, labour having commenced some hours previously. She was 43 years of age, had previously borne 11 children, and had reached the full term of gestation, but had suffered during the last two months from occasional floodings, which had greatly reduced her strength. On my arrival I found that repeated and violent attacks of hæmorrhage had occurred since the commencement of the labour; the pulse was scarcely perceptible, and her face was pale in the extreme. Wine, brandy, opium, and diluted sulphuric acid, were administered freely, and after a short time the patient rallied sufficiently to allow of my examining the con-

dition of the os uteri; this I found to be rapidly dilating, the membranes ruptured, a portion of the placenta having been detached from and lying loosely over it, and the infant, in its descent, pressing against the part, now prevented any further hæmorrhage from taking place. The labour was soon terminated, as the expulsive pains were strong and frequent, and the placenta not following within the usual time, was extracted by the midwife about an hour afterwards, without any recurrence of the flooding. The infant was born alive, and the mother, although much debilitated from the great loss of blood, gradually recovered, and did well.

CASE XV.—*Severe Flooding.*

October 1842.—I was requested at 5, A.M., to see a patient of the Northern Dispensary, residing in Brunswick-street, by Messrs. Dixon and Bennett, as very copious hæmorrhage had taken place after the removal of the placenta. The woman bore the appearance of having lost a large quantity of blood, her countenance being quite pale, and her pulse almost imperceptible; the vagina had been plugged, but the uterus could be felt through the abdominal parieties, distended, and nearly reaching to the umbilicus, and all the symptoms of internal hæmorrhage were evidently present. The plug was at once removed; and Mr. Bennett, passing his hand up into the uterus, removed several large clots from its cavity; cold water was poured upon the abdomen from some height, and the uterus was then pressed strongly with the two hands till it contracted, a binder and compresses being afterwards applied tightly across the abdomen. Stimuli were freely administered, and the patient took two doses of Secale ($\mathfrak{z}$ j. each) at intervals of a quarter of an hour; after this there was no return of the hæmorrhage.

CASE XVI.—*Foot and Funis presentation: Flooding.*

July 30.—A. W., æt. 36, residing in Church Lane, in labour with her thirteenth child. Seven of her previous labours have been complicated with uterine hæmorrhage, or some other accident, requiring medical assistance; and in her last confinement the placenta had been retained three days in the uterus, after the birth of the child, before I was summoned to her assistance. For the last week hæmorrhage has taken place daily, and to some extent occasionally, accompanied with pain at intervals for the last two days: the night previously, at 12 o'clock, the liq. amnii escaped without any pain, and in a few hours afterwards she felt a sensation at the vulva like something moving; this proved to be the funis, a loop of which

had escaped externally, and was pulsating, the beats 120 in the minute; while the mother's pulse, as felt at the same time by Mr. Bennett, was not above 80. The left foot of the infant soon after descended slowly with very slight pains; but as these soon wore off almost entirely, the Tinct. Secal. was administered at short intervals in $\mathfrak{z}$ j. doses till the patient had taken $\mathfrak{z}$ ss.; the uterine contractions still continuing very feeble they were aided by gently pulling at the body of the infant; its face was towards the pubis of the mother, and 15 minutes elapsed before the head could be released: but during this time all pulsation in the funis had ceased, and the infant was still-born.

Flooding now again came on to a considerable extent, and as the patient had already been much debilitated by the previous hæmorrhage, the hand was at once passed up into the uterus, and the placenta, which was morbidly adherent at one portion, was extracted, the patient progressing very favourably afterwards.

The interesting point in this case is the fact of the funis being distinctly felt to pulsate during the time of labour much more quickly than the arteries of the mother, contrary to the assertions of the late Professor Hamilton, of Edinburgh, who used the supposed negative fact as an argument against the utility of the stethoscope in detecting pregnancy.

CASE XVII.—*Arm presentation: Version.*

Dec. 1841.—S. B., æt. 34, was admitted into the Lying-in Ward, in labour with her sixth child.

Mrs. Backler, the midwife in attendance on the case, requested Mr. Bennett to see the patient whilst the membranes were entire. On examination, a small projection was felt within them, which, as he states, bore all the characteristics of the chin; this, however, proved afterwards to have been the elbow, and on the membranes rupturing, the arm immediately descended. Mr. B. finding the os uteri very rigid and heated, bled the patient largely, and gave her a full dose of opium; on dilatation being fully effected, he passed up the left hand into the vagina, with the view of turning, but finding that it came in contact with the back of the infant he did not carry it higher. I was sent for to see the case at 12 A.M.; and on carefully examining the patient found the *right* hand and arm protruding beyond the vulva, black and swollen, the os uteri fully dilated; but from the position of the child it was judged more advisable, with the intention of effecting version, to employ the *right* hand, which Mr. Bennett now did; and reaching a knee in the flexed position he used traction upon

it with his fore-finger, turning the infant with apparent facility, and effecting its release speedily; it was, however, still-born. The placenta soon followed.

CASE XVIII.—Forceps Case. Retention of Urine, and Catheterism for seven weeks.

Aug. 30th, 1844.—Mrs. S., æt. 21, residing in Clarendon Place, Somers Town, who had gone to the full term of pregnancy, was seized with labour pains on the morning of the 29th, which, towards the evening, assumed a more uniform character as to intervals and strength. Mr. Bate was sent for; and, on examination, found the os uteri dilated to the size of a half-crown, and the vertex presenting. Dilatation was fully effected by 11 P.M.; and the uterine contractions, though not forcible, were apparently efficacious, the membranes protruding through the os externum at 4 A.M. on the 30th. The head had made no progress in its descent for the last four hours, and Mr. Bate, thinking that the membranes might be acting as an impediment to its descent, ruptured them, and about a pint of Liq. Amnii was evacuated.

30.—At seven A.M. no advance had taken place; the patient was becoming restless and impatient, and the uterine contractions had lost much of their force. She was now also harassed by sickness, ejecting from the stomach a dark fluid, resembling coffee-grounds; her tongue was furred, and she complained of headache. Mr. Bate, not liking her appearance, requested Mr. Lee, of Upper Gordon Street, to see her with him, who ordered her a small quantity of brandy, and ℥xxx. of Tinct. Opii, which relieved her partially, but the opiate was repeated in the same quantity after an hour's time, with the view of gaining some repose for the patient. When the effect of the opiate had ceased, after a few hours, the pains still continued comparatively feeble, the patient's strength was less, the tongue furred, mouth parched, and the vomiting had returned at intervals; the infant's head was low down, with the vertex at the os externum, but not distending the perinæum. At 5 P.M. a dose of secale was administered, but it had only the effect of increasing the uterine action, without aiding the descent of the head.

My attendance was now requested at 8 o'clock P.M., but I was not able to see the case until 11. At this time the natural uterine efforts were trivial, the patient suffering only from occasional tantalizing pains; the soft parts had become hot and dry; the patient seemed much exhausted, and, on inquiry, I found that the bowels had not been relieved for 48 hours previously, and urine had not been passed for the last 24 hours. Owing to the position of the child's

head it was found impossible to pass the catheter effectually, and I was obliged under the circumstances to apply the forceps without that preliminary. With all the fears of vesico-vaginal fistula before me, owing to the long continued pressure of the infant's head on the bladder, and its passage whilst this organ must be in a distended state, I applied the instrument as carefully as possible, and in a few minutes the head was released; two natural pains effected the passage of the body; and although the infant at first laboured under slight congestion of the brain, yet by the employment of the warm bath, and by allowing a small quantity of blood to escape from the divided funis, respiration soon commenced, and the child did well.

The catheter was afterwards introduced by Mr. Lee, and its employment was continued twice daily. On Sept. 12th a discharge of pus accompanied the urine when drawn off, and again on the 29th, when a small teacupful passed. The patient took ten drops of the Tinct. Ferri Sesquichlor. with the same quantity of Tinct. Lyttæ, three times daily, and gradually regained her strength and health, but was unable to pass her urine without the aid of the catheter until the 20th of Oct. (fifty-one days from the time of her labour), when, after an attempt, she passed about half a pint. The bladder after this appeared to have recovered its tone, and she no longer required any assistance.

CASE XIX.—Distortion of Pelvis: Craniotomy.

Oct. 11th, 1844.—Ann Hall, æt. 22, was attacked by labour pains on the evening of the 10th, and they continued with regularity and force until 1 o'clock A.M. of the 11th, at which time the os uteri was fully dilated, and the membranes had ruptured; after this period, however, very little advance took place as to the farther descent of the head, notwithstanding the uterine contractions were sufficiently strong to effect this, had there been no unusual resistance on the part of the pelvis. At 7 P.M. I saw the patient, and on examining her, found that the antero-posterior diameter of the pelvic brim was smaller than natural, and that the rami of the pubes approximated too closely. The scalp of the infant's head was much tumefied, and projected considerably beyond the cranium, the latter evidently being imparted in the brim. On questioning the patient, she says that she has not felt any movement of the infant for the last two days; on applying the stethoscope to the abdomen, pulsations were heard just above the umbilicus, 124 in the minute, but these were found to be synchronous with the pulse of the mother: below, and a little to

the right of the umbilicus, however, could be distinctly perceived double pulsations, 140 in the minute, an evidence as to the vitality of the child. As the head had now been almost stationary for nineteen hours, it was considered requisite that some steps should be immediately taken to relieve the patient; and although there was very little available space between the pelvic bones and the head, yet, as the infant was still living, I felt bound to endeavour to use the forceps, although without much hope of success. The catheter was introduced and the contents of the bladder evacuated, and with some difficulty the forceps were applied to the head; I, for some time, employed as much force in traction as, under the circumstances, I considered myself justified in doing, but the effect produced as to any advance of the head was so trivial as not to induce me to persevere.

The patient was now becoming much exhausted by her long-continued efforts, and complained of heat and pain about the abdomen and soft parts; and as there was evidently no further chance of preserving the life of the infant, I, with some reluctance, proceeded to make use of the perforator at half-past 9 P.M. The head was lessened, and by means of the crotchet, which took a good hold on the cranial bone and scalp near the aperture, it passed through the deformed pelvis after some time, and the body soon followed. The infant (a male) was quite dead. I mention this fact, as in examining its thorax on the day after, the right lung did not present the usual appearances as observed in those of still-born children, and floated when thrown into water—a fact deserving the notice of the medical jurist.

CASE XX.—Convulsions after Labour, followed by fatal Puerperal Fever.

July 23, 1844.—Donovan, æt. 20, a stout plethoric woman, was admitted into the Lying-in Ward in her first labour, and after a lingering time was delivered of a male infant. Soon after the termination of the labour she was seized with repeated attacks of convulsions, and on Mr. Bennett being called to see her, he immediately abstracted about ʒxxii. of blood from the arm, applied cold lotions to the head, and administered a powder containing 4 grs. of calomel with 15 grs. of jalap, as the bowels had not been relieved for some days previously. There was no oedema of the limbs, but it was discovered that the patient had complained of severe pain in the head for some time before the occurrence of labour. After the bleeding, two paroxysms took place, but they were not of the same violent character as those which had preceded it; the bladder being found distended, the

catheter was introduced, and a large quantity of urine drawn off. As there was no evacuation from the bowels, after some hours the purgative was repeated more than once, and in the evening the desired effect was produced.

24th.—Complains of her head, and is dull and confused in her intellects. Vesicat. inter scapulas. Mist. Salin. Antimon.

The patient seemed much better on the 25th, but still complained of pain in the head, though it was not so severe: diarrhoea appeared on the day after, but was checked by the use of the Mist. Cretæ; on the 28th it was found that pressure in the abdomen occasioned slight pain, which came on likewise at intervals, accompanied by some febrile action.

R Calomel, gr. ij.; Opii, gr. ss. Ft. pil. statim sum. Mist. Febrifug. Pulv. Doveri, gr. v. 4tis horis sum.

Was much relieved by the medicines, and continued better through the next day; but on the 30th she was again suddenly attacked by severe pain in the abdomen, accompanied by a shivering fit, frequent vomiting of a green bilious fluid, and by diarrhoea. The skin was hot, pulse 120, the countenance anxious, and there was severe pain and throbbing in the temples; the respiration was hurried and oppressed, attended by severe cough, with scanty expectoration.

Vesic. pector. Hirud. xxiv. abd. appl. Fetus; Cataplasma.

R Opii, gr. i. Calom. gr. ii. tertiis horis sumend.

R Mist. Febrif. c. Acid. Hydrocyan. Dil. ℥iv. tertiis horis sumend.

When I saw the patient again at 11 P.M., on the same day, she was sleeping tranquilly; the respiration was natural, and she had expressed herself as suffering very little pain.

31st.—I saw her at 11 A.M. when she felt still better, and did not complain except on pressure, and this she referred more to the leech-bites than to any internal sensation; the knees were not drawn up as they had been the day previously, and she had passed a comfortable night. It was thought prudent to continue the pills, giving them, however, at longer intervals. Towards the evening there was a sudden change in her condition, all the unfavourable symptoms returning with increased violence, the sickness, pain in the abdomen, cough, and hurried respiration, much distressing her: a large blister was applied over the abdomen, and was afterwards dressed with the Ung. Hydr. Mit. Effervescing draughts, each containing 3 min. of Acid. Hydrocyan. Dil. were given every four hours to allay the sickness, but there was no essential benefit derived, and she gradually sank, expiring

On the next day (Aug. 1), nine days after
er delivery.

CASE XXI.—*Obstinate Constipation :
Peritonitis.*

Dec. 12, 1842.—C. Lewis, æt. 25, was admitted into the Lying-in Ward in labour with her sixth child; she had been exceedingly negligent as to the state of her bowels, and had had no relief by them for the last fortnight. The labour, owing most likely to this cause, was very protracted, and during the expulsive pains a small quantity of hardened scybala passed, but no proper alvine evacuation took place. Castor oil and other aperients were administered without the slightest effect; enemata were used repeatedly, the abdomen was rubbed with castor oil, leeches were applied to that part, followed by fomentations, and a gum-elastic tube was passed carefully and high up into the bowels, and warm water copiously injected, but all without any favourable results; sickness at length supervened, the abdomen became tumid and very tender, and notwithstanding the employment of all the usual remedies with the view of combating the inflammatory symptoms, the patient sank under their effects on the 18th, constipation having existed for three weeks.

CASE XXII.—*Peritonitis during Labour :
deformity of Pelvis : Craniotomy.*

Oct. 28, 1843.—Honora Ryan, æt. 25, a leuco-phlegmatic unhealthy-looking woman, came into the Lying-in Ward in labour with her third child, her two former infants having been still-born. At the time of her admission in the evening, the os uteri was found on examination to be dilated to a very slight extent, but by the next morning it was fully open, and the head of the infant discovered to be the presenting part, although very little advance took place until the rupture of the membranes; the expulsive pains now took on a greater degree of force, and the head very slowly descended for a time, but its progress was soon arrested, notwithstanding the continuance of the pains for some hours. When I first saw the patient in the evening I found that this check was dependent on a deformity of the brim of the pelvis at its antero-posterior diameter, and it was evident that immediate assistance was required; she complained of continual thirst, was very feverish and restless, and the slightest pressure on the abdomen occasioned intense pain. Venesection was first employed, and hot fomentations applied to the abdomen for a considerable time, which were followed by temporary relief of the inflammatory symptoms; but as the uterine contractions were becoming more ineffective, and there was little hope of the passage of the head through the

pelvis without instrumental assistance, I resolved on employing the perforator (there not being sufficient space available for the application of the forceps), and with some difficulty the infant, a male of large size, was extracted.

The inflammatory symptoms within a few hours after this, became still more intense, and notwithstanding repeated depletion, and the exhibition of calomel and opium every hour, the patient died within forty-eight hours from the time of her delivery. In this case puerperal peritonitis was without doubt going on during the labour, and it proved to be the first of a series of similar cases, four of which were likewise attended with fatal results.

The following are the cases of puerperal fever which proved fatal in St. Giles's Infirmary in 1843, for the notes of which I am partly indebted to Mr. Latten, of St. Osyth, who officiated at that time as House Surgeon.

CASE XXIII.—Maria Farrell, æt. 30, second child, delivered Oct. 26, 1843. Was going on very favourably until the 30th, when she complained of great thirst, headache, and slight nausea; her skin was dry and hot, pulse quick and hard, bowels regular, but there was great tenderness about the abdomen. There was no shivering.

Venæsect. ad ʒxii.; Hydr. Chlorid. gr. x.;
Opii, gr. ij. statim sum.; Fetus et
Catapl. Sem. Lini. abd. applic.

31st.—Thirst and headache abated, less nausea, skin moist, and the pulse softer, but the swelling and pain in the abdomen were so much increased that the patient could not bear the slightest pressure; the tongue was dry and brown, and the bowels somewhat irregular.

Hirudines xxiv. abdom. applic.; Hydr.
Chlorid. gr. ij.; Opii, gr. iss. secunda
quaque hora sum.

Nov. 1.—Better in every respect; tongue clean and moist, swelling and pain of abdomen much diminished, pulse regular, bowels relaxed.

R Hydr. c. Cret. gr. iij.; Pulv. Ipecac.
Comp. gr. vj. ft. pulv. 6ta. quaque
hora sum.

R Mist. Cret. ʒiss.; Confect. Opii, gr. x.
ft. Haust. post. sing. sed. liq. sum.

2nd.—The diarrhoea continues; the pulse is small and fluttering; the skin cold and clammy, and the abdominal pain has returned; the tongue, however, continues clean and moist. The powders were now omitted, the abdomen was fomented, enemata of starch and opium were thrown up, and the cretaceous mixture with opium was continued regularly. Arrow-root, with small quantities of brandy, were given at short intervals, as symptoms of collapse threat-

ened; but the patient never rallied after this, and expired on the 4th, being the ninth day after labour, and the fifth of the disease.

CASE XXIV.—Mary Ann Nelson, æt. 21, first child, delivered Nov. 3rd.

Was going on very well until the 5th, when, without any rigor, she complained of headache, great thirst, and sickness; the bowels had not acted since her confinement; the pulse was strong and full, tongue white, and there was pain over the whole abdomen, increased on pressure.

Venæsect. ad. ʒxvj.; Hydr. Chlor. gr. x.; Pulv. Opii, gr. ij. stat. sum. Ol. Ricini, ʒss. hor. ij. post pulv. sum.

Hirudines xxiv. abd. appl.; Fetus. Catapl.

12 P.M.—States that she is very much relieved, the bowels have acted, the pain is much reduced, the sickness has left her, and the pulse is soft.

R Cal. gr. ij.; Extr. Opii, gr. iss. ft. pil. tertiis horis sumend.

6th.—Passed a good night, the tongue is moist, bowels regular, pulse full but compressible; there is no pain, and very little thirst.

R Hydr. c. Cret. gr. iij.; Pulv. Ipecac. C. gr. v. M. sextis horis sum.

7th.—Slept well during the night, but she is now rather feverish; the tongue is white, the bowels relaxed, and there is slight pain in the right iliac fossa.

Pulv. Opii, gr. ij. statim, et quarta quaque hora sum.

12 P.M.—Pain abated, but there is thirst, want of sleep, great irritability, and sickness.

Mist. Salin. Effervesc.

8th.—Has passed a restless night, the abdominal pain is increased, the pulse is quick and full, the tongue coated with a yellowish fur, and the bowels somewhat relaxed.

Hirudines xii. Rep. Med.

The patient after this was better in every respect, continuing apparently to improve until the morning of the 11th, when she complained of great debility; her tongue was dry and furred, the pulse 140, but small, and she suffered much pain in both sides on changing her position. By giving her occasionally small quantities of brandy, beaten up with egg, and repeated small opiate doses, she slept tranquilly, and expressed herself as feeling much better, but no actual improvement took place. She continued in the same state until the 14th, when she gradually sank, and expired in the afternoon, eleven days after delivery.

CASE XXV.—Jane Topping, æt. 24,

third child, delivered Nov. 4th. This patient had had a favourable labour, but on the day after it, was seized with a shivering paroxysm, followed by pain and enlargement of the abdomen; the skin was hot and dry, tongue white, pulse quick and hard, and there was great thirst, accompanied by severe headache. The pain in the abdomen was chiefly at the lower part, increased by pressure; the lochial discharge was free, the bowels constipated, and the patient was at the same time suffering from much mental anxiety.

V. S. ad ʒxvj.; Hirudines, xxiv. abdom. Fetus et Catapl. Ol. Ricin. ʒss. statim sum. R Hydr. Chlorid. gr. x.; Opii, gr. iss. ft. pil.

At 8 P.M. the symptoms were not much alleviated, though the pulse was now soft and full: the patient complained of great nausea.

Hydr. Chlor. gr. ij.; Opii, gr. j. quarta quaque horâ.

In addition to the pills, she was likewise ordered a mixture containing the Acid. Hydrocyan. Dil. of which she took two drops every three hours.

6th.—Has passed a good night, the pain only recurring at intervals; moist skin; pulse full, but soft; sickness abated; tongue moist, but brown; bowels much relaxed: the patient, however, complains of a feeling of oppression at the chest.

The leeches were again applied, and the pills continued, but given at longer intervals; and in the evening much relief had been obtained.

7th.—Has slept the whole of the night; the pain has ceased; skin warm and moist; bowels not disturbed; quick soft pulse; white tongue; gums not affected.

Continue the pills.

8th.—Has passed a good night, but complains this morning of slight pain in the bowels, which she attributes to the medicine: as there is a tendency to diarrhœa, the calomel to be omitted, and two grains of Extr. Opii to be given every three hours.

The history of the patient for the next three days was much the same; she slept comfortably during the nights, seldom complained of abdominal pain; the bowels acted regularly, although she still continued the use of the opium, and on the 11th she expressed a feeling that she was much better. Arrow root and weak broth were now allowed as diet.

12th, 9 A.M.—No return of pain, but the bowels are constipated; she complains of sickness and inability to take food; the pulse is quick and soft.

Ol. Ricini, ʒss. Mist. Effervesc.

12 P.M.—Bowels relieved, the vomiting

abated, and she has had some sleep at intervals.

Rep. Pil. et Mist.

13th, 9 A.M.—Not so well; she complains of great debility, and of difficulty in respiration; her pulse is quick and fluttering; tongue dry and brown; bowels regular, but she has a disinclination to all nourishment. After this period her symptoms denoted approaching dissolution; she passed a very bad night, complaining of pain in every part of the body and extremities, and on the 14th expired, it being the ninth day after her labour.

After the loss of the foregoing cases, it was judged prudent that the resident midwife should not attend any other parturient cases for the present, as we had formerly had but too many proofs of the contagious nature of the disease and of the spread of it by the obstetric attendant: she was preparing to go into the country, when she was seized with a violent attack of erysipelas of the head and face.

After her recovery, she again resumed her attendance in the Lying-in Ward, and in the early part of December the following case occurred (of which I regret I have but very imperfect notes), and was the first one attended by Mrs. B. after her recovery.

CASE XXVI.—Ann Restall, æt. 23, delivered Dec. 3d, of her seventh child, after a favourable labour of four hours, it being the third time that she had been confined in this Institution. At the time of her admission she was suffering from severe cold, and was very low and depressed in mind, having been for the last few weeks in very indigent circumstances. Her milk gradually failed, and on the sixth day after her confinement she was attacked with febrile symptoms, which increased notwithstanding the use of purgatives and antimonials; she now complained of pain and swelling in the left leg, but it was not until the ninth day that an erysipelatous redness was discovered about the knee and thigh, and this travelled slowly up to the groin and abdomen; she now had all the symptoms of puerperal fever, proving that the peritoneum shared in the inflammatory action, and sank under its effects on the 16th, at 2 P.M., thirteen days after her confinement.

In 1842, six cases of puerperal peritonitis occurred in the practice of the Northern Dispensary; the majority of these were attended in labour by Mr. Hearne, and one only proved fatal.

In 1844, three cases of the most virulent form occurred in succession, in the Dispensary patients, attended by Mr. Lee, all of which terminated fatally. In one of these, the patient had previously to her confine-

ment frequently passed nine or ten days without any alvine relief, and she always dreaded the action of her bowels as much as her labour.

The total number of cases of puerperal fever was nineteen, of which nine proved fatal.

CASE XXVII.—*Puerperal Phlebitis?—Sloughing of Vagina—Affection of Joints.*

For the notes of the following case, which occurred in the practice of the Northern Dispensary, I am indebted to Messrs. Gramshaw and Allchin, who had the immediate charge of the patient.

August 18th, 1842.—Ellen Annear, æt. 23, of a robust habit, and healthy constitution, has been married five years, and has already borne two children. On the 15th, pains came on, but they were of a trifling nature, and though they gradually increased in strength and frequency, she did not deem it necessary to send for assistance until the 11th. The os uteri dilated very slowly through this day, and it was not till the morning of the 18th, at 2 o'clock, that it was fully opened, when the Liq. Amnii was discharged, but the infant (a female) was not expelled till 5 A.M., the placenta following in about fifteen minutes afterwards. Hæmorrhage took place to some extent, but the uterus soon contracted properly, and a tight bandage being placed round the abdomen, and ℥ xxx. of Tinct. Opii administered, Mr. Gramshaw left her in charge of the nurse.

The patient was visited in the afternoon, and complained of soreness in the uterine region, but said that it was not so severe as shortly after delivery; her legs felt rather stiff, but this she attributed to the cramped position she had been in, during the latter part of her labour.

19th.—She had taken ʒj. of castor oil, which had operated rather strongly, and caused pain in the bowels, but this was arrested by the exhibition of ʒss. of Tinct. Opii; the lochial discharge is abundant, but of foetid odour, and the pain in the legs continues, but is much more severe in the right than in the left.

20th.—Still complains of great pain in the right foot and ankle, and also of soreness at the perineum. On examining the latter, it was found to be red and swollen, with two small vesications a little posterior to the fourchette. Pulse 120. Hirud. viij. perin. applic. Mist. Salin. c. Antim. P. Tart.

21st.—The perineum appears considerably better, but the right leg is very painful, and the swelling and tenderness are extending upwards, reaching nearly to the knee, and there is pain in the abdomen also. She

complains of great thirst and restlessness, and her pulse is 130.

Mr. Powell saw her at this time with Mr. Gramshaw, and prescribed venesection to xxiv . warm fomentations, and a continuation of the saline mixture. The blood was bled and cupped, and the patient was evidently relieved by the depletion, as on the next day the abdominal pain had subsided, and that in the leg was alleviated.

23d.—Has passed a bad night, the pain being so severe as to prevent her sleeping; the supply of milk is very scanty, and it is thought necessary to sever the infant from the breast. Leeches were applied to the leg, and the limb was constantly kept in flannels wrung out of hot water. Half a grain of Morph. Hydrochlor. was given at night, and the saline mixture continued. Another small abstraction of blood from the arm was proposed, but the patient would not consent to it. She shewed no perceptible change in her condition until the 26th, when complaining of increased pain at the perineum; the part was examined, and found to be in a sloughing state. I first saw her at this period, and recommended that a yeast poultice containing a small quantity of Solut. Chlor. Calcis should be applied to the perineum, changing it frequently, and washing the part gently with tepid water, containing a little of the Tinct. Camph. Co. She took gr. i. of Quin. Disulph. and mxx . of Acid. Sulph. Dil. every four hours, and commenced a more nutritious diet, with the addition of porter. The Morphine was continued at night, and a small dose of castor oil occasionally administered. Under this treatment she improved in her symptoms until the 31st.

At this time she relished her food, the sloughs had separated, and the redness around the edges of the wound had greatly diminished in extent. The pains in the leg were not so great except on moving her position; the pulse is weak and keeps up to 120. Mr. Morton was kind enough to see the patient at this period, and recommended a continuation of the same treatment for the sloughing parts, and that as soon as granulations should commence, a weak solution of Sulphate of Zinc, and the common water dressing should be used.

The patient soon after this complained of sore throat, and of a feeling of stiffness in the arms, which were painful to the touch, but there was no swelling or redness perceptible. Mr. Gramshaw, who had hitherto assiduously attended the case, was obliged to leave London, and Mr. Allchin now undertook the further charge of it.

Sept. 1st.—The patient complains of severe pain in the wrists, elbows, shoulders, knees, and ankles, which joints are swollen,

slightly red, and very tender on pressure; the right groin is also affected to such an extent as to prevent her sleeping. We thought it better to discontinue the quinine, especially as the foregoing symptoms were accompanied by much febrile action, and to substitute the following mixture.

R Vin. Sem. Colch. 5j .; Tinct. Hyoscyam. 5iss .; Magnes. Carb. 5j . Aq. Mist. Pip. 3vss . ft. Mist. cujus partem quartam sextâ quâque horâ sumat.

Two thirds of a grain of Morph. Hydrochl. were given at bed-time, to be repeated during the night, should the intense pain not be relieved.

3d.—Has slept for four hours after taking the second dose of Morphine, and has perspired profusely; the pains are diminished, she has no headache, the pulse is 134 but more full in its character, the tongue clean, and the perineum is going on favourably, and forming healthy granulations. On the 4th the symptoms had abated somewhat, and the only feature was the appearance of a vesicular eruption over the neck and shoulders, which gradually extended to the body, but was not attended by any irritation; the patient still complains of sore throat.

As the report of this case has already extended to some length, I will omit the further daily accounts, as minutely taken by the gentleman who attended her, and merely remark, that the symptoms varied as to intensity, the pain in the groin and joints being occasionally very severe, and controlled solely by repeated doses of Morphine, the pulse generally keeping about 130. She continued in this state until the 10th of September, when she complained of great pain and dryness in the throat, delirium succeeded, the respiration became hurried: she was after this insensible, and gradually sank, expiring at 9 A. M. of the 11th.

Autopsy, 54 hours after death.—The intestines and stomach were paler than natural, and much distended with air, but they were not inflamed, and there was no fluid within the cavity of the peritoneum.

The uterus presented no very particular appearance; the left ovary was rather softer than natural, but otherwise healthy; the right ovary was about three times its natural size, black, and apparently in a state of sphacelus, and on cutting into it a cavity was discovered, containing a dark foetid fluid; the ligament on that side had also a dark and gangrenous hue.

Each pleura contained about ten ounces of bloody serum, but the lungs themselves did not present any pathological features; the heart was of a natural size, pale, flabby, and all the cavities perfectly empty. Unfortunately, the uterine and femoral veins

were not examined by the gentlemen who performed the autopsy, and the joints also escaped examination.

This case appears to have been one of those which have sometimes been classed under the name of puerperal rheumatism, although I have very great doubts as to its arthritic character, and should much rather be disposed to look on it as arising from inflammation of the venous system connected with the uterus. In some other similar cases of a milder nature, I have invariably found that the chief seat of pain was in one or both groins, and that the affection of the different joints followed afterwards.

In the case of a lady whom I lately attended, not only was there severe pain in the left groin, but all the joints almost in the body were in succession affected, the knees having been for ten or twelve days in a flexed position, and at one time threatening ankylosis. The debility was excessive, and glandular swellings took place in turn at the groins, neck, arm-pits, thighs, &c. By the continued employment of fomentations, a few leeches, followed by the combined employment of a highly nutritious diet and tonics, the patient gradually, though very slowly recovered from her hazardous state. In some cases of fatal puerperal fever, the same pain and swelling of the joints have been frequently observed, and one case recurs to my mind in which the medical practitioner was so far deceived by the resemblance to rheumatism and the absence of abdominal pain on pressure, that he confidently pronounced the case to be rheumatic, and it was not until another practitioner who met him in consultation assured him of its true nature, that he was convinced of it, the patient dying the day after.

Piorry, in a paper on this subject lately published, appears likewise to have some doubt as to the rheumatic nature of similar cases to the one I have detailed, and thinks that they have a special character, differing from ordinary rheumatic arthritis, as being less subject to cardiac complications, and in their tendency to induce suppuration in the synovial capsules.

CASE XXXVIII.—Puerperal fever; death of husband from somewhat analogous symptoms.

Dec. 12th, 1844.—Sarah Bell, residing in Mary St. Hampstead road, was delivered of a female child, at 5 p. m. it being her first confinement. The gentleman who attended her, Mr. Lee, went to her immediately after delivering another patient, who afterwards died likewise of virulent puerperal fever. On the 13th, the patient complained of slight pain in the bowels, for which a dose of castor oil was administered. On the 14th her face was pale and anxious,

she complained of pain recurring at intervals in the abdomen, the slightest pressure on this part increasing it; pulse 100; bowels acted on by the aperient, and the lochial discharge free, as was also the secretion of milk. The patient was naturally of a very weak constitution, and there were many depressing causes connected with her history, which evidently told sadly on her. She had married much below her former rank of life, and for some months past had been tried by extreme poverty. Mr. Lee ordered for her $\mathfrak{m}\text{xxx}$. Tinct. Opii, with the same quantity of Sp. Ammon. Arom. every four or five hours, but the pain was found on the next day (15th) to have increased; the pulse was 120, her countenance very anxious, and there was a tendency to diarrhoea. She took gr. ij. of calomel and half a grain of opium every three hours; cataplasms were constantly applied to the abdomen, and six leeches to the most painful part. I first saw her on the 16th, when the symptoms continued much the same; she had lost the power over the sphincters, and her pulse was very quick: the same remedies were continued, and as much nutriment given as she was able to take, and on the succeeding morning she was apparently better, not complaining of pain unless she moved, and even then it was much less. She had slept for some time; the pulse was not so quick, and the tongue moist, but she still had no power over the bladder and rectum; she became much worse towards the evening, and expired on the morning of the 18th.

The husband of this patient was observed by Mr. Lee to look very ill on the 14th, he having had no other room or bed to go to but that on which his wife lay, and he had had little or no sleep since her confinement. He was of very delicate constitution, and complained of great lassitude, headache, and pain in the back and limbs; his bowels were confined; the tongue was furred in the centre, red at the edges, and quite dry. His pulse was quick and small, and his countenance had a distressed expression. As he had to lie in the same bed with his wife, Mr. Lee obtained admission for him into the University College Hospital. Shortly afterwards, sloughing of the scrotum took place, and pain and swelling in the joints accompanied it. He did not survive many days, and on examination I understand that a dark-coloured pus was found in the joints. This, though a rare case, is not a singular one, as similar instances have occasionally been narrated, in which the low typhoid or erysipelatous symptoms were propagated by contagion (as I believe was the case in the present instance) from the puerperal patients to the attendant or relation, who had been constantly with them.

PRACTICAL OBSERVATIONS
ON THE
VARIOUS FORMS OF DYSPEPSIA.

By ROBERT DICK, M.D.

Author of a Treatise on the "Derangements, Primary and Reflex, of the Organs of Digestion, with an Addition," "Treatise on Diet," &c.

[Continued from p. 1156.]

DIGESTION *continued*. DERANGEMENTS
OF PRIMARY AND SECONDARY ASSIMILATION.

SOME information in regard to the pathology of assimilation may be obtained indirectly from a study of the abnormal conditions of the urine. We touched, and merely touched, on this important but as yet imperfectly understood subject, in the conclusion of our last paper. We resume it, but our remarks will be purposely very desultory and concise.

Saccharine condition of the urine as connected with derangements of assimilation.—We observed in our last paper that one of the several functions of the stomach was the conversion of saccharine into albuminous and oleaginous principles. From aliment containing saccharine matter, the stomach appears, in the first place, to produce a weak sugar, and, in the next place, to convert this into soluble albumen. We now speak of the action of the healthy stomach. In saccharine diabetes, or saccharuria, the stomach seems to acquire a morbid power of producing sugar from saccharine, and even all aliment: hence sugar is formed at once more plentifully than usual, and of a stronger kind: and just in proportion as primary assimilation acquires the morbid power in question, it seems to lose that of reducing the sugar into soluble albumen. It appears, at least, to effect this conversion only imperfectly. And whether owing to this cause, or to the preternatural abundance of saccharine matter thus generated in the course of primary assimilation, and entering the circulation in the chyle, it happens that the sugar re-appears in the blood, in which it is detectible in a free state in victims of chronic saccharine diabetes. Dr. Prout appears to be of opinion that the lacteal capillaries fail to organize duly this saccharine chyle, in its passage through them; and hence the derangements of secondary assimilation, evinced by the presence of sugar

in the blood and in the urine. But he also believes that in the advanced stages of diabetes, sugar is formed even in the secondary assimilating processes.

The relation of oxalic acid to sugar reveals the source of the occasional, or, it would seem, frequent appearance of this principle as a constituent of an abnormal urinary salt; and we think it not at all improbable, that malic acid also, from its relation to sugar, is occasionally formed (in minute quantity it may be) in the system, though, so far as I am aware, it has not yet been detected.

Dr. Bird has alleged that he has never met with urine at once saccharine and oxalic, though mere theory might lead us to anticipate such a combination. Were this the case, there must be some process, at present not at all understood, in the course of secondary assimilation, or of the renal actions, by which sugar existing in the blood is deprived, in the oxalic acid diathesis, of its hydrogen and of part of its carbon, and it would, I apprehend, be found that, in cases of oxaluria, the liver would secrete more profusely* than in those of saccharine diabetes, and this we believe to be the case. But is Dr. Bird's statement accurate? His words are: "In no instance have I yet found sugar present in oxalic urine," and he repeats the asseveration in the ensuing sentence (p. 136, Urinary Deposits). Dr. Prout, however, states, with equal explicitness, a directly contrary opinion. "When," he says (p. 67, Renal and Stomach Diseases), "a great deal of saccharine matter is consumed as food, the urine often contains sugar as well as oxalic acid, and when sugar, and particularly oxalic acid, are thus freely taken, the urinary sediments always contain more or less of the oxalate of lime." He adds, that the oxalic acid diathesis is also sometimes associated with serous urine.

We must say that, whether the *rule* be or be not as Dr. Bird states, we have met with cases in which, as Dr. Prout observes, sugar and oxalate of lime were conjointly detectible in the

* We would infer this from the fact, that, as part only of the carbon of sugar, which must be supposed wandering in the blood, goes to form oxalic acid, the remainder required to be eliminated; and, of course, this must be accomplished either by the lungs or liver.

urine; and indeed, amid the abrupt changes to which the urinary secretion must be liable, it would be singular if, *sometimes* at least, two or more of the morbid varieties incident to it, and not chemically incompatible with each other, were not found co-existing.

As the cause of diabetes is uncertain, I shall say nothing regarding it, except that perhaps an inordinate use of crystallized sugar and of saccharine aliment is, if any known cause be admitted, the one best authenticated. Of the treatment also (which I shall not discuss minutely), the management of diet and of the digestive organs must constitute a main feature. And here I would suggest a principle somewhat at variance with established practice and opinions, which is this:—While I should certainly exclude from the patient's diet, crystallized sugar and any saccharine aliment which is observed palpably to augment the gravity of the urine and diuresis, yet I would hesitate about restricting the food to azotized substances. We must remember that sugar appears to be formed, not merely in primary assimilation from the ingesta, but also in secondary assimilation from the tissues. We must also consider that it is not sugar that causes the disease, but a certain morbid action that gives rise to the sugar. Till this morbid action of the primary and secondary assimilating processes is corrected or subdued, sugar will continue to be formed, even though it be rigidly excluded from the diet: it is formed, as emaciation proves, from the tissues. Hence, rigorously to exclude non-azotized, and, perhaps, saccharine aliment, is probably but to force the disease to attack (so to speak), for want of materials, the living tissues themselves. We would therefore allow farinaceous food at least: and in this view Dr. Prout concurs, though he does not assign the reasons we have ventured to adduce. I admit that sometimes great temporary amendment seems to follow the absolute use of animal food: but unless the cure is prompt and complete, which it rarely is, the circumstances of the patient are, soon after, aggravated, and the fatal event is apparently accelerated. It is worthy of note, that, not less as regards morbid than normal secretions, a diminution or a suppression of them

is commonly a greater evil than an excess. The profuse biliary discharges of an irritated liver are accompanied frequently with excitement, griping, and even inflammatory and febrile symptoms: from all which, however, the patient may recover: but suppressed bile, for the most part, speedily induces* coma and death. The excretion of a preternatural amount of urea is usually marked by symptoms of some urgency: its non-elimination seems to produce fatal poisoning. A similar principle probably holds in regard to sugar and oxalic acid. And not at all unlikely in cases where we flatter ourselves that we, or nature, has cured these and other diseases attended with overt morbid secretions, because these excretions have disappeared; they have merely become latent, and the maladies on which they depend have assumed their gravest and last phase.

Nor is it necessary that here much should be said of the chemical examination of the urine. It may not, however, be amiss to suggest, that, as a few of the microscopical discoveries lately communicated to the world, may be termed microscopical as regards their degree of practical value and importance, as well as the physical minuteness of their subjects, so there appears some risk that chemical diagnosis of the urine may be carried to a useless and even ridiculous minuteness and refinement.†

* I apprehend that the secret of the dangerous though often useful power of narcotics, in part consists in their suspending secretions, and thus partially and temporarily poisoning the system.

† In a discussion on purpura, which took place on the 20th of this month (October) in the Medical Society, we find it stated by one of the members: "It should be recollected that when we give lemonade in this disease we were really giving soda, for lemon-juice was a super-citrate of soda, rendering the urine alkaline." (See Report, p. 1133 of this Journal.) On referring to Dr. A. T. Thomson's account of the composition of lemon-juice, we find it stated to be "principally of the citric acid, mucilage, extractive matter, and a small proportion of sugar and water." Dr. Pereira, in his Treatise on Diet, quotes, and therefore we presume, adopts, Proust's account of the composition of this acid, which is as follows:—

"Citric acid.
Malic.
Gum.
Bitter extractive.
Water."

But putting out of view altogether the question whether the speaker referred to is in right or in error, in regard to the composition of lemon-juice, we yet believe, that if the aim of his observation is, as it undoubtedly seems to be, to prove that the physiological and therapeutical effects of lemon-juice and of soda, in purpura or in any disease, are identical, he will find few *practical* observers to concur with him. We are inclined to suspect, that

The grand morbid, as the grand normal characters of the urine, it is not, in truth, a *very* difficult task to translate, when practical information is singly sought. Is its appearance, is its amount natural? The eye can decide, with tolerable accuracy, in many cases the one point: two or three brief questions and directions ascertain the other. What is its specific gravity? Does it moderately redden litmus? Does it cloud or coagulate on being heated? Does any turbidness, which may be present, *disappear* on heat being applied? From these investigations, which any practitioner may execute *extempore*, it may, in ninety-nine out of a hundred cases, be determined whether a *further* examination is needed; whether nitric acid, caustic potash, evaporation, the microscope, or any other agent, or mode of more rigorous analysis, may be expedient. There are, doubtless, some species of morbid urine, as the oxalic, &c. which the above measures may not detect: but, besides that the occurrence of these is comparatively rare (and this remark, notwithstanding Dr. Bird's opinion, we must apply even to oxalic urine), there are generally other marked constitutional systems which would determine us to examine the urine, even independently of its presenting, or not presenting, overt signs of derangement.

Serous urine, as connected with derangements of the assimilative organs.—

There is every probability that albuminous urine has a variety of causes. There is reason to suspect that sometimes, in cases of such urine being voided, the kidney is little or not at all affected, or, if so, only functionally; and that, through it, the blood disburdens itself of an undue proportion of albumen which has, perhaps, been imperfectly elaborated by the lacteals. In other cases, albuminous urine is found associated with what is called granular kidney, but it is still doubtful whether the former causes the latter, or the contrary. The same remark applies still more forcibly to congestion of the kidney, which, moreover, for

obvious reasons, can only be a very transient cause, if cause it ever is, of albuminuria. Our business, at present, is merely to inquire, as far as inquiry can be made, into those derangements of the assimilating processes which seem to favour the occurrence of morbid states, in which albumen is voided in the urine.

There can be little doubt that in many cases of derangement of chymification, of chylification, or of both, the soluble albumen of those first assimilating processes is sufficiently elaborated to be able to enter and pass through the lacteals, but not sufficiently so to be organised by them into perfect blood. It consequently wanders about the system, giving rise, probably, to disease in various organs, more particularly in the lungs, for Dr. Prout believes that it is this, "the comparatively insoluble pseudo-albuminous matter of struma," which, in passing through the pulmonary tissue, gives rise to tubercles; but, while part of it is disposed of in this way, some of it is eliminated in the form of urate of ammonia, of urea, of uric acid; some of it, also, it may be, directly as albumen. In this last case, it is necessary to suppose some functional debility of the kidney, in consequence of which it fails to give to the albumen the form of one or other of the normal, organic, or saline constituents of the urine.

Or the albumen in the circulation may proceed from the second, that is, the disorganizing process of secondary assimilation. Febrile or inflammatory disturbance, or some exanthematous virus, may interfere with this process, and cause the blood to be more or less loaded with spurious albumen, and this, according to the general law by which morbid matters tend spontaneously to discharge themselves through one or other of the natural emunctories, may seek to find egress by the kidneys.

As the albumen, which occasionally passes by the kidney, has thus probably two sources (and the same remark applies to sugar), its presence does not, *prima facie*, indicate disorganization of any particular tissue. If its elimination in the urine is simply owing to its having been originally crudely concocted (by an imperfect primary assimilation)—if, though sufficiently chylified to pass the lacteals,

the speaker, in his observations, had only in view the re-agencies of the laboratory, and forgot those which vegetable and animal substance on the one hand, and the living mucous membrane of a stomach on the other, mutually exert when brought in contact.

Even supposing lemon-juice to be a "super-citrate of soda," is the acid alone to be therapeutically rent, the alkali alone therapeutically active?

it was no more fitted than saccharine albumen to serve the formative purposes of secondary assimilation; its appearance in the urine does not, of course, indicate decomposition of any tissue, since the albumen in question never formed part of any. It is only when sugar and albumen are generated in the course of the second or disorganizing process of secondary assimilation, that they denote the morbid absorption of one or more tissues; and accordingly, in this last case, the accompanying symptoms are usually of a much more severe and obstinate kind than in the former.

Excess of urea, uric acid, urate of ammonia, in the urine, as connected with derangements of assimilation.—Urea is a product of secondary assimilation, and although, so far as has yet been discovered, normally eliminated by the kidney alone, it is not organized, at least wholly and solely, by that viscus, for it is found in the blood, as Simon and Marchand have ascertained. Lehmann and Kühn have also detected it in bile, where, next to the urine, it might, *à priori*, have been most probably anticipated. Its alleged presence in the liquor amnii and milk, in sweat and in saliva, would require, we apprehend, to be better established.

Dr. Prout entertains the following opinions in regard to the excess of urea. He believes this to be due more frequently to derangements of secondary than of primary assimilation; and that the source of urea in such cases is chiefly the gelatinous tissues, from which also the saccharuria of secondary assimilation is derived. He is of opinion that the morbid destructive assimilation of this tissue may manifest itself either by an excess of urea, or of principles complementary to it, namely, the saccharine principle and the lactic and oxalic acids, related to or derived from that principle. Occasionally urea appears in the urine under the form of carbonate of ammonia. According to Becquerel, a diminution of the normal quantity of urea is a more frequent morbid symptom than an increase of it; and we think that Dr. Prout states his experience to be, that, for one case of excess of urea, he has met with twenty cases of diabetes. Our own more limited experience, however, has supplied a considerably greater proportion than this of cases of excess of urea.

Dr. Prout states that the causes predisposing to an excess of urea seem to be similar to those predisposing to diabetes; but we should think that, from the presence of nitrogen in the one deposit and not in the other, the causes, so far as those consist in, or include, dietetic errors, must considerably differ. So far as we can observe, Dr. Bird, in his work on Urinary Deposits, besides stating the chemical diagnosis of urea, says little or nothing respecting it.

We should be disposed to treat excess of urea in somewhat the same manner in which we should an excess of uric acid, or of urate of ammonia, with, of course those modifications which must suggest themselves to the reader.

Dr. Prout's opinion, as has been already stated, seems to be, that both saccharine diabetes and the excess of urea are due to abnormal decomposition of the gelatinous tissue; consequently, we might expect cutaneous, &c., disease to accompany the derangement in question. We have, however, in a former paper, observed, that such a relation is by no means always traceable.* The adipose tissue seems more particularly affected than any other; and this may be expected and explained. Though this tissue has direct uses, yet it is evidently also laid up merely as a reserve whence, in cases of necessity, as, for example, of suspended assimilation, either from actual want of food, or from febrile disturbance interfering with digestion, in order that the atrophy of more important tissues may be postponed to the last moment, by the substitutive secondary assimilation of this deposited fat. If, then, death or recovery take place, before the adipose tissue is entirely absorbed, it may be difficult to determine whether any other tissue have suffered to any extent, or what tissue would, after the adipose have been attacked.

On the other hand, we have, equally often, chronic cutaneous disease with little or with no derangement whatever of the urine, but in such cases the liver will be usually found deranged; while again, the urine is faulty, and perhaps

* Dr. Prout offers a very plausible explanation of this. He observes that, when the skin-affection amends somewhat, the urine becomes affected, and *vice versa*. And thus from the two derangements not appearing coætaneously, it might at first be supposed that they have no relation, when the very opposite conclusion ought, obviously, to be drawn.

has been so for years, yet, strange to say, the general health is unimpaired!

A case singularly illustrative of this is at present under my observation. The patient, of the male sex, is in his 34th year, during five of which he has been the subject of the disease which I am about to describe. It commenced in 1841, with large boils about the thighs and nates, after which a species of prurigo came on; this has tormented him ever since. The disorder is severest in the forearms, thighs, legs and ankles, but other parts are not free from it. It is worse at night. The misery it has caused him by rendering it necessary to live isolated and to be constantly attempting some one thing or another to keep it in check, is such, that he informed me "*he often wished for death.*" He has been under innumerable practitioners, and been subjected to almost every treatment, yet totally without effect. Among measures which afforded him temporary relief, is what may be called a *hydropathic** one. (I crave pardon for using the Bœotian word,) namely laborious ablutions with cold water.

With the exception of the cutaneous affection and the state of the urine, the health of this person is perfect; that is to say, his stomach, bowels, his appetite and his muscular strength, are in the best order. His urine was however deranged, and may have long been so. Within half an hour from the time that nitric acid was added to it, a pretty copious deposit of crystals of nitrate of urea took place. (Its specific gravity was 1026.) It was also slightly saccharine; in no degree serous.† Such, when I first saw him, were the characters of even the morning urine, which, moreover, was, in amount, certainly not under the average standard of health. Notwithstanding those symptoms, his health, appetite, muscular power, were, as I have already remarked, perfect.

So far as concerns *urinary* treatment it were needless to pursue the

details of this case further, for except a slight regulation of diet, the means adopted had reference to the cutaneous, rather than the renal lesions. The patient's use of animal food had not been excessive, yet we restricted it, and confined him to mutton once a day, with fish and eggs. He was to use butter and sugar very sparingly, and totally to disuse cheese, beer, wine, spirits. Salads for breakfast were *enjoined*. In ordering medicines addressed to the digestive organs (which I did, but of which I find I have not kept full account,) I might seem to be endeavouring to "better what was best" these being already regular: but I wished to excite some constitutional change or disturbance, under cover of which (if I may use the phrase,) I hoped that the external measures which I proposed to take to renew a healthy state and action of the skin, might be successful. This, expressed as clearly and briefly as I can, was the *principle* of treatment which suggested itself to my mind: and in medicine as in most other things, observation pursued in reference to a principle is the best, perhaps the only method, by which instruction may be reaped both from success and failure.

R. Bi. chlorid. Hydrarg. ʒj.

Aquæ calcis, ʒviij.

Tinct. opii. ʒj.

S. Applicetur ubi sit titillatio.

R. Liquor. potass. arsenitis.

S. sumantur guttæ quatuor bis die, dose gradatim cretâ ad guttas viginti bis die.

These were used simultaneously for some time. At length, the gums becoming slightly sore, the former was intermitted, and the arsenical drops were given in decoction of cinchona. No distinct benefit resulted.

He next had sulphur ointment, which made his complaint worse. He was then directed to apply twice or thrice a-day the compound tincture of iodine, which had no particular effect. Meantime, he continued the arsenical drops, but now in decoction of elm-bark. He also took the following pills twice a day.

Ext. Rhei. gr. xxxvi.

Mass. Pil. Hydrarg. gr. xviii.

Arsenici Albi. gr. ss.

Fiant pil. xii. quorum sumantur j. ante prandium, atque horâ somni quotidie.

*I need not remind my readers that the word *hydropathic*, coined by Ignorance, (perhaps by Waggery,) from *υδῶρ* and *παθος* means not water cure, (as was probably intended) but water disease.

† There were no traces of bile in the urine, though its presence, especially in biliary derangement, is much more common than I once suspected. In this person's case, however, bile in the urine was hardly to be expected, his digestive organs being entirely regular, and his alvine evacuations quite natural.

He felt considerable *palliation* from this treatment, but still there were not satisfactory prospects of decided cure.

Continuing the elm bark decoction and the arsenical drops, omitting the pills, he now took at mid-day, six grains of Sulphuretum Hydrargyri cum sulphure. I pencilled over the affected parts with a solution of a scruple of nitrate of silver in one ounce of distilled water, the strength of which has been subsequently doubled, and this, I may observe, causes him, an hour after it is applied, some little pain. From this he has experienced more benefit than from any thing he has ever used. It has entirely removed the itching. But as there are in the skin here and there several small sacculi, from which when compressed a white pus-like matter may be made to exude, and as these receptacles lie too deep to be reached by the caustic in solution, I have detected that a stick of it, brought to a sharp point, should be pressed into these cavities. The proceeding will be at once painful and tedious, but probably effectual; but the case requires some such measure, and the patient will be too happy to purchase a cure even at the expense of suffering. The condition of the urine is, meanwhile, improved.

The consideration of the excess of uric acid and of urate of ammonia, and the presence of urate of soda in the urine and in the whole fibrous tissue, as connected with derangements of assimilation, must be postponed to a future occasion.

Deposits of uric acid, and its combinations, as connected with derangements of secondary assimilation.—A small quantity of uric acid forms a constituent of urine. The proportion is about 0.393 in the 1000 parts, or supposing the urine voided in 24 hours to be 46 ounces, 8.1 grains of uric acid are contained in that quantity. The uncombined lactic and uric acid, according to Berzelius, is owing to the acid re-agency of urine. Dr. Prout, on the other hand, questions the fact of uric acid existing uncombined in normal urine, and assigns for this view reasons which appear plausible. He is of opinion that the uric acid exists in combination with ammonia, by which it is rendered greatly more soluble, while at the same time the acid retains, though thus combined, the property

of reddening litmus paper.* Though this acid is displaced very readily from its combinations, yet, singularly enough, the urate and the super-phosphate of ammonia are found capable of existing in solution together, and to one or both of these, in Dr. Prout's opinion, is owing the acid reaction of urine. Dr. Bird, again, ascribes the acidity of urine to free phosphoric acid: and while we regard this view as less probable and much more hypothetical than that of Dr. Prout, these, as well as other differences of opinion, prove that the real constitution of the urine is far from being fully and precisely understood. We think it not improbable that future analyses may shew that the acidity of the urine is owing, at different times, to various acids, or, perhaps, simultaneously to various acids, the uric, phosphoric, lactic, and sulphuric. Dr. Prout seems to have shewn, as just observed, that uric acid does not exist free in normal urine; but it is still matter for inquiry whether free lactic acid, or some super-lactate, does not contribute, with urate and super-phosphate of ammonia, to produce the acid reaction of healthy urine.

There seems reason to suspect that uric acid and its compounds are derived from chyle (particularly chyle furnished from an imperfect primary mal-assimilation), from the albumen of the blood, and, also, by destructive secondary assimilation, from the *albuminous* textures. Urea and lactic acid, as already stated, are supposed to be principally derived from the gelatinous tissues. Uric acid and its compounds, in excess, are supposed more particularly to accompany and to indicate the gouty diathesis, as lactic acid does the rheumatic. In gout, the urine, previous to the attack, and often during the severity of it, deposits uric acid, the urates of ammonia and soda, with, occasionally, more or less of the phosphates of lime and of magnesia. The presence of the purpuric acid (as it is named by Dr. Prout, the murexan of Liebig), united with ammonia, gives a red or pinkish hue to the discharge.

While, during the gouty paroxysm, the salts named are escaping by the kidney, it may happen that the peculiar

* Uric acid requires for solution 10,000 times its weight of water at 80°: urate of ammonia only 480 times.

deposits of arthritic inflammation takes place in the cartilaginous and tendinous tissues. These deposits consist chiefly of urate of soda, with occasionally small and variable quantities of the phosphate and carbonate of lime,* and with the urates of potash and ammonia. They generally take place in the cartilages and ligaments, and in the areolar tissue around joints and exterior to the synovial membrane. These form what are called the chalk stones of gout. When the depositions are in considerable masses, they are incapable of absorption, or, rather, solution: but in earlier and milder gouty attacks, deposits unquestionably take place, which, re-dissolved in the œdema of the accompanying or consequent inflammation, and thus absorbed into the circulation, leave the parts nearly or altogether as perfect as before.

The uric acid deposits depend, probably, on a variety of circumstances. They are witnessed in fevers and inflammations, doubtless, partly owing to the interruption of cutaneous transpiration, which so notably characterizes these states, during which the kidneys supplement, in some degree, the suspended elimination of uric acid by the skin. They may be said to be, in some measure, pathognomonic of what may be termed *nitrogenical diathesis*, that condition, namely, in which more nitrogenitic food having been used and assimilated than the system

requires, the blood is preter naturally loaded with albumen and fibrin. In such circumstances the circulation disburdens itself of the unappropriated superfluity, through the kidney, in the form of uric acid, or some one or more of its combinations. If the redundant nitrogenized principles do not escape by the kidney, they take either the still more unfortunate channel of arthritic deposit around the joints, or else give rise to the severest and most intractable forms of biliary and dyspeptic disease and remarkable derangements of the gastro-enteritic secretions. In other cases, they induce obstinate and extensive chronic affections of the skin, either of a phlegmonous tubercular character, or of spreading abscesses, discharging a mixture of blood, sanies, and pus. Such cases have repeatedly come under my notice.

In an individual disposed to uric acid deposits, a large meal of animal food or even of fine wheaten bread (in consequence of the azote contained in it) is apt to produce them; while a moderate employment of these articles of diet, or the use principally of farinaceous aliment, prevents the inconvenience.

Phosphatic Deposits, as connected with Dyspeptic Derangements.—Albumen, we know, contains phosphorus and sulphur, and so does the oleaginous principle, which forms as much as a fourth part of the brain and nerves. The exact mode of combination, however, of the oil and phosphorus is not known. The manner in which the phosphorus is oxygenated, previous to its forming the phosphate of lime of bone, to its escaping by the kidneys in union with magnesia, ammonia, and lime, is also as unknown to us as is the mode in which carbon is oxygenated in the course of the assimilative disorganization of the tissues by the oxygen of the red globules.* It would appear that both phosphoric and sulphuric acid, uncombined with bases, are occasionally present in the urine, though in a minute quantity: nay, that phosphorus and sulphur, not in the form of the known acids just named, but in some other combination not yet ascertained, also pass, sometimes, through the kidneys.

* In referring to lime as a morbid excretion, we think it somewhat of a duty to call attention to a patented water, in which, so far from being concealed, it is studiously proclaimed that lime forms the efficient ingredient. This water is moreover recommended to the public as "a daily beverage." We view with regret the recent suggestion of the use of this water, by a writer in this journal; that suggestion being uncoupled, as in our opinion it ought to have been, with a formal declaration of the danger of using this water, except in very occasional and peculiar circumstances. Without such a declaration, we think it unadvisable that a professional gentleman should sanction, in any manner, the use of a most dangerous liquor offered to the public for constant use: for such sanction may be misconstrued into a general approval. The inventor of this liquid states that on analysing the "water taken from many different sources," he invariably found lime. Hence he infers that a water, with which lime is systematically incorporated, must be eligible and wholesome. On the same principle he might infer that because, in specimens of air obtained from "many different sources," soot will be found, so an atmosphere in which soot is designedly and artificially mingled, would be a boon to the community. Why! Lime, as is well known, is of all antacids precisely the one most objectionable; the ingredient we would most sedulously exclude from our daily drink. What ignorant trifling this, with health.

* We assume, for the time, the theory as to this use and object of the red globules to be established which, though plausible, it is not. There seems to us, indeed, to be difficulties connected with it.

According to Fremy, the following are the constituents of the human brain, of a considerable part of the spinal cord, and of some part of various nerves:—Cerebric acid (as he calls it) free: combined with soda: and with phosphate of lime, 2. Oleo-phosphoric acid free: combined with soda, 3. Oleine and margarine, 4. Minute quantities of oleic and margarine acids, 5. Cholesterin, 5. Water and albuminous matter. The proportions are, albumen, 7 parts: fatty matters, &c., 5 parts: water, 80 parts. Why does M. Fremy omit notice of sulphur?

The phosphoric acid, then, of the phosphates must have one or more of three sources: the albumen of the blood or of the tissues, or the fat of the nervous masses, or the phosphate of bone. The albumen of the blood can furnish only a minute quantity, yet its undue elimination from the albuminous principle of the blood may seriously derange the healthy constitution of that fluid, and cause profound disorders and imperfections in ultimate nutrition.

The general indication afforded by the deposition of the phosphates, is a state of constitution, debility and irritability, implying or apt to induce a *breaking up*, as it is called, of the system. Hence the ætiology and the nature of the phosphatic diathesis suggest its therapeutical management: corroborative measures; vegetable sedatives, bitters, and acid; hyoseyamus, the citrate of ammonia, the ammonio-citrates of iron with Hock and Burgundy, but of the strongest sorts.

12, Bentinck-street, Manchester-square.

[To be continued.]

EFFECTS OF ALCOHOL ON THE EXHALATION OF CARBONIC ACID FROM THE LUNGS.

M. VIERONDT, in continuing his researches on respiration (an abstract of some of which was given at page 611 of the present volume of the *MEDICAL GAZETTE*), finds that immediately after drinking any spirituous liquor the amount of carbonic acid exhaled becomes sensibly diminished, and that this diminution lasts for about two hours (*Gaz. Med.* Oct. 4.) If this be so, the retention of carbonic acid in the system will in all probability contribute somewhat towards producing the intoxicating effect, the subsequent headache, and other phenomena, resulting from the employment of spirits.

ON A HITHERTO UNDESCRIBED STRUCTURE IN THE HUMAN HAIR SHEATH.

By THOMAS H. HUXLEY, Student.
Charing Cross Hospital.

IN Professor Henle's "Bericht ueber die Leistungen in der Histologie," for 1846, the following passage is contained:—

"Kohlrausch and Krause describes the inner layer of the sheath of the root (of the hair) which I depicted as a glossy soft fenestrated membrane, to be a layer of pale longish and flat cells, which firmly adhere in the longitudinal direction, whilst transversely they may be separated by manipulation, and then present the appearance of a membrane with irregular gaps. This same membrane separated and folded they considered to form the transverse striæ on the root of the hair. I venture to affirm that these observers have not even seen any inner layer of the sheath of the root. I beg of them to treat a hair torn out with both layers of the sheath adhering, with acetic acid; carefully to strip off the granular outer layer, which by this means is rendered brittle, and then to adjust the focus of the microscope to the most superficial part of the hair. They will then see, not only the round holes with very even sharp borders described by me, but also, by altering the focus, they will see beneath this the transverse strips, which, as Meyer justly stated, are formed by the borders of imbricated scales. I have also at times seen a layer consisting of anastomosing longitudinal fibres, which perhaps is composed of elongated scales, but I cannot say whether this was in the place of my fenestrated membrane. Certainly it is not ordinarily present.

Perhaps some light may be thrown upon the contradictory opinions here set forth, by some observations made by myself in the beginning of the present year, and since repeated so frequently, as, I hope, to avoid all source of error.

If the sheath of the root be split longitudinally with needles or a fine knife—removed, and laid out flat with the inner surface uppermost, the fenes-

strated membrane will be at once seen, when the focus of the microscope is adjusted to its upper surface. If some part where the sharp well-defined edge of this membrane is free, be now more carefully examined there will probably be seen extending for some little distance beyond, and lying above it, a single layer of very pale epithelium-like nucleated cells. If the eye be now carried again over the fenestrated membrane (the focus being carefully adjusted), this layer will be found to be traceable over the fenestrated membrane, and to be in close connexion with it.

The individual cells composing the layer are very delicate and pale, readily escaping observation when not separated from the other structures; they are more or less polygonal or rounded, 1-600th to 1-1200th of an inch in diameter: they are applied edge to edge or nearly so.

The nuclei are elongated, broader at their extremities than in the middle, and sometimes more or less prolonged at their angles; their average long diameter may be about 1-2000th of an inch, but in this respect they (as the cells) vary a good deal. They appear

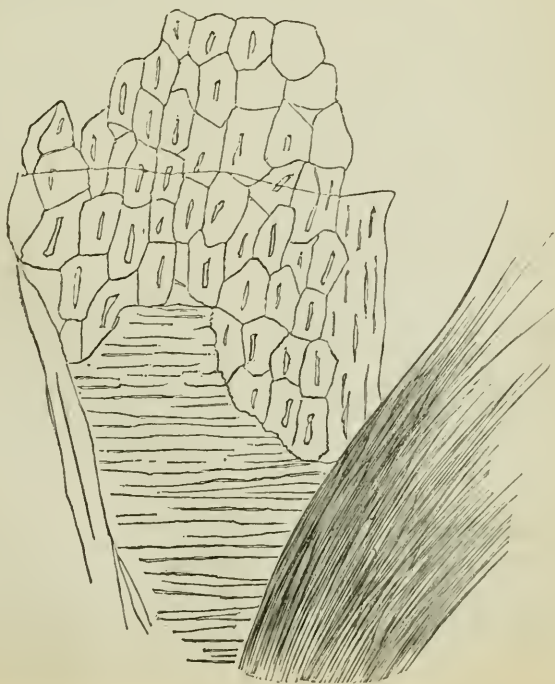
more or less granular, but do not present any distinct nucleolus.

Acetic acid renders both cell and nucleus extremely indistinct; the latter would sometimes appear to become corrugated after the manner of the pus corpuscles, &c.

The position of this layer of cells is between the fenestrated membrane and the cortical scales; clear proof of this is obtained when the cortical scales happen to peel off from the shaft and adhere to the inner surface of the sheath. If the focus be adjusted to them, depressing it brings into view, 1st. the layer of nucleated cells; 2d. the fenestrated membrane.

Subjoined is a drawing of the inner surface of a hair sheath, illustrating this.

Possibly it is the layer of cells here described which has been confounded by Kohlrausch and Krause with the fenestrated membrane; which has been described by Henle as consisting of anastomosing longitudinal fibres, and by Meyer (cited in Professor Henle's *Allgemeine Anatomie*, p. 295). as a stage of development of the cortical scales.



OEDEMA OF THE GLOTTIS, FROM SLIGHT INJURY OF THE MUCOUS SURFACE :

LARYNGOTOMY FIFTEEN HOURS AFTER THE
ACCIDENT : SUCCESSFUL RESULTS.

Communicated by
W. LAWRENCE, Esq.

JULIA CREED, a healthy married woman, aged 33, confined in Bridewell Prison for a trifling offence, met with the following accident on the evening of the 1st Oct. 1845. Whilst eating her supper, between 5 and 6 o'clock, a piece of unmasticated crust of bread slipped into the œsophagus and stuck there, producing great uneasiness. Finding she could not get it down by the most powerful efforts to swallow or to drink water, she made an attempt to reach it with her fingers. In this she failed, but the irritation of the fauces, occasioned by it, brought on retching, and this action had the effect of moving the crust and lodging it higher up in the throat. According to her account, however, it still required a resolute effort for its removal, and in the course of her endeavours, she felt, to use her own term, as if the "flesh had been torn" either by her fingers or by the foreign body. For about two hours after this she felt no particular inconvenience from the occurrence, but then began to experience some difficulty in breathing. She lay in bed restless and uneasy, starting up in alarm the moment she fell asleep. One or two of the attacks of threatening suffocation were very alarming, and she endeavoured to arouse her fellow-prisoners, who, however, were sleeping too soundly to be thus awakened. Being a patient woman, her efforts were probably but faint, from a fear of occasioning trouble. Towards morning the difficulty of breathing became less urgent. Medical aid was sent for as soon as her condition became known to the officers of the prison.

At half past ten, A.M. (Oct. 2d) I found her sitting propped up in bed; her face tumid and red, expressive of

uneasiness and alarm. Her breathing, however, was at this time tranquil, and air entered freely into the lungs. Her voice was feeble and hoarse, and every attempt to swallow liquids brought on spasm of the muscles of the throat and face. The fauces had a natural appearance on an ordinary inspection, but when the root of the tongue was forcibly depressed, a rounded tumor, the size of a cherry, and of a faint red colour, was perceived in the situation of the glottis, consisting obviously of the mucous membrane in an œdematous state.

Ten leeches had already been applied by order of Mr. Taylor, who had seen her early in the morning, and the bites were still bleeding freely under the use of warm fomentations. Her bowels had acted freely in the morning.

As she was apparently deriving benefit from the remedies then in action, and as her breathing was tranquil and free, I left her for a short time to make a call in the immediate neighbourhood. On my return, I found Mr. Holding, the nearest medical resident, then at the door of the prison, and learnt that he had been hurriedly sent for. He accompanied me to the prisoner's cell. Her aspect, at the first glance, told plainly the course which it would be necessary to pursue with as little delay as possible. Her face was livid and swollen; and the spasmodic efforts by which she was drawing into her chest the smallest quantities of air, were evidently failing. She was comatose before she could be placed upon a table.

I performed the operation of laryngotomy a little before noon. It was done without much difficulty, although the shortness and fatness of her neck made her an unfavourable subject for the operation. After a free incision of the integuments had been made, the loose cellular tissue was readily torn through with the fingers, and the crico-thyroideum membrane reached. The distended thyroid veins were easily avoided, and the whole amount of hæmorrhage was trifling. Whilst the membrane lay clearly exposed between the tops of my fingers, Mr. Holding punctured it at my request, but the opening thus made was very small, and the quantity of air admitted was insufficient. As the lividity of the face, however, appeared slightly to

* The operation was performed by Mr. J. F. Crookes, before the patient came under Mr. Lawrence's care, at St. Bartholomew's Hospital. The narrative of the case was drawn up by Mr. Crookes.

diminish, I deemed it prudent to await the arrival of the proper tubes, meanwhile carefully commanding the opening with my fingers. As soon as the tubes were brought, I enlarged the opening, and introduced one, and within a second or two afterwards the lividity of the face entirely disappeared, and the poor woman was restored to perfect consciousness.

For the greater convenience of treatment the patient was removed in the course of the afternoon to St. Bartholomew's Hospital. With the exception of a little difficulty of breathing in the course of the night, arising from the tube getting blocked up with mucus, everything went on very favourably. Soon after the operation, air was found to pass through the nostrils, and on Mr. Lawrence's visit between one and two o'clock on the following day, the tube was removed, respiration being carried on without impediment through the natural passage. In about a week the air only passed through the wound on coughing, and ceased to do so altogether three or four days later. Eight days after the operation she complained of some pain in her chest, but on auscultation no sound was heard to create any fear of inflammation, and the application of a blister speedily removed it. No other untoward symptom occurred, and the wound is now (Oct. 21st) entirely cicatrised.

SYPHILIS.

In a paper on the Diagnosis and Treatment of Syphilitic Diseases, Dr. Egan adduces the following particulars:—

1st. He has observed the simple superficial ulcer, unattended with indurated margin or base, give rise to a papular eruption, pains resembling rheumatism, increased vascularity of the throat, generally accompanied with enlarged tonsils. In this form he has never witnessed the occurrence of rupia, nodes, or ulceration of the back of the pharynx: in this class, which were for the most part treated without mercury, constitutional symptoms occurred far more frequently, but were of a milder description than in those where the opposite plan of treatment was adopted. When topical applications fail, mercury is resorted to for the purpose of accomplishing a cure.

2ndly. That strong presumptive evidence has been afforded that the matter of gonorrhœa, in its incipient stage, is capable of producing a mild form of secondary symp-

toms; but, not having been able to substantiate this opinion by the process of inoculation, he cannot, as far as his experience goes, lay it down as an ascertained fact.

M. Ricord, we believe, lays it down as a rule that the form of gonorrhœal discharge which produces the characteristic pustules and ulcers by inoculation depends upon the existence of chancre within the urethra.

3dly. That the phagedænic ulcer, where it has existed *ab initio*, does not owe its characters to any peculiarity of constitution, but to a specific virus, as is evinced in the dissimilarity and inveteracy of the secondary and tertiary symptoms; and that, in such cases, mercury is decidedly injurious. And, lastly, that all the secondary forms of syphilis, with the exception of iritis, are curable without the aid of mercury; the cure, however, is much more protracted, but relapses far less frequent.—*Dublin Journal of Med. Science*, May 1845.

LUNATIC ASYLUMS IN SPAIN (TOLEDO).

THE *Hospital de los Locos*, or so called *asylum* for lunatics (Locoa Arabicé, mad,) is, like most similar establishments in Spain, no honour to science and humanity. Insanity seems to derange both the intellects of the patients and to harden the bowels of their attendants, while the usual misappropriation of the scanty funds has produced a truly reckless, make-shift, wretched result. There is no attempt at *classification*. The inmates are either crowded,—the monomaniac, and the raving mad,—in one confusion of dirt and misery, where they howl at each other, chained like wild beasts, and treated even worse than criminals; for the passions of those who are the most furious, are infuriated by the savage lash. There is not even a curtain to conceal the sad necessities of these human beings, now reduced to animals; every thing is public even unto death, whose last groan is mingled with the frantic laugh of the surviving spectators. In some rare cases, the bodies of those whose minds are a void, are confined in solitary cells, with no other companions save affliction. Of these, many when first sent here, to be put out of the way by friends and relations, were *not* mad, soon indeed to become so, as solitude, sorrow, and the iron enter their brains. This establishment, one which the Toledan ought to hide in shame, is usually among the first lions which he forces upon the stranger, and especially on the Englishman; since, holding all our worthy countrymen to be all *Locos*, he naturally imagines they will be quite at home! but the sight is a sad one, and alike disgraceful to the sane, as degrading to the insane native."—*Ford's Spain*.

MEDICAL GAZETTE.

FRIDAY, NOV. 28, 1845.

THE Eleventh Annual Report of the Poor-Law Commissioners reveals some important facts connected with the progress of vaccination, and its influence in checking the ravages of small-pox among the pauper population. As the mortality from this disease was on the increase, notwithstanding the extent to which vaccination had been, or ought to have been, carried on throughout England and Wales, the Commissioners required from the several Unions and parishes returns of the numbers vaccinated in each, during the year ending the 29th September, 1844. Returns were received from 542 Unions and parishes, containing very full statistical details. The first object was to determine the proportion of the vaccinated to the total births, a deduction of $8\frac{7}{10}$ ths per cent. being made for the number of children dying under the age of three months, before which period vaccination is rarely performed. From this calculation, it would appear that in one year there were 412,891 children, and we gather, from the abstract of the returns, that the number actually vaccinated by the public vaccinators amounted to 290,453, leaving 122,438 children to the chance of being vaccinated by private medical practitioners, or at public institutions. Although in the number of persons returned, there may have been some adults, and probably cases of re-vaccination, yet there is certainly no better method for testing the efficiency of the Vaccination Act than that of comparing the number of births with the returns of the vaccinated. The results obtained from a large section of the population, amounting to more than

four-fifths of the total births for England and Wales, shows, therefore, that the known instances of public vaccination are at least as 1 : 1.4, compared with the children which are living beyond the age of three months. This is in the ratio of about two cases of vaccination among three children. It therefore appears that only *two-thirds of the children, chiefly of the pauper population, undergo vaccination.*

We regret to find by the Report that there is still a great prejudice existing among the ignorant and uneducated classes of the people against the practice. This feeling is becoming less prevalent, but still there prevails in many districts an erroneous apprehension that other eruptive and cutaneous diseases are liable to be communicated by the vaccine virus. The registration and poor-law returns, however, now infallibly indicate those localities in which the objects of the Vaccination Act are imperfectly carried out. They are at once known by the great preponderance of births over the numbers vaccinated. In some districts the out-stations have been given up in consequence of the neglect of the people to take their children to them; and in these cases the vaccinators have been compelled to visit the houses of the parents.

As a medical fact, it is interesting to learn from the Report that a large number of the cases of vaccination turned out successfully. It seems that out of the 290,453 persons vaccinated there were no less than 278,192 successful, so that the failures, on inspection, amounted to only 12,261, or about four per cent. Another circumstance worthy of notice is, that out of 3954 cases of small-pox attended by the vaccinators during the year, they ascertained that 1283 had been previously vaccinated. This would give a ratio of one vaccinated person attacked for

three who had not undergone the operation: but even admitting the whole of these vaccinations to have been perfect, we are not able to ascertain the proportion which these 1283 cases bear to the total number vaccinated—the only true basis of a comparison. The efficacy of vaccination can be fairly tested only by observing how many of the vaccinated are attacked by the disease, compared with those who escape—not by comparing the numbers of the attacked after vaccination with those who have had the small-pox in the natural way. In the year 1844, when small-pox was epidemic in the metropolis, out of 647 patients admitted into the Small-pox Hospital, 312, or nearly one-half, had satisfactory vaccine cicatrices. If figures alone were trusted to, and the data obtained at this hospital, with less than 700 cases, were a fair representation of the frequency of occurrence of small-pox after vaccination throughout the whole population of England and Wales, we might infer that the attacks among the vaccinated amount to 1 in 2 cases, or one-half; but such an inference cannot be drawn, if for no other reason, because we do not know how many of the vaccinated escaped for each of the 312 attacked. Mere accident might one year lead to the admission of none but vaccinated cases, and then the inference might be, in the face of all experience, that Jenner's discovery afforded no protection at all! Even during the Parisian epidemic of 1825, it was remarked, that of 682 persons attacked, only 162 (including 88 doubtful cases) had been vaccinated, or about one to four*.

The Poor-Law returns unfortunately supply us with no information of the mortality from small-pox in this extensive series of observations; but it is now generally known that whatever may be the proportions attacked, the chances

are infinitely in favour of the vaccinated. In the Parisian cases above alluded to, the deaths of the vaccinated were to those of the unvaccinated as 25:148, or only 1:5.9, and this under all the unfavourable circumstances of an epidemic. But it will be more interesting to deduce the relative mortality from recent data, taking the Quarterly Report of the Registrar-General for England and Wales, just issued*. On examining the notes of 160 registrars from all parts of England and Wales, we find that the number of fatal cases of small-pox distinctly specified for the last quarter, amounted to 389. Of 68 of these cases no particulars are given; but of the remaining 321 it was ascertained by the registrars that 37 only had been vaccinated, and 284 had not undergone vaccination. The relative mortality, according to the above returns, was, therefore, in the ratio of 1:8.7, *i. e.* for every 100 of the vaccinated 870 of the unvaccinated die from small-pox: or the mortality was 73 per cent. from natural small-pox, and only 11.5 per cent. from the disease after vaccination. This result does not at all affect the question relative to the protective influence of vaccination; because we are unable to determine how many recovered for each death after vaccination, and how many escaped the disease altogether. The preponderance, however, is sufficiently in favour of vaccination, and we believe that in proportion as observations are carefully made, the more strikingly will this fact be demonstrated†.

* Ending September, 29, 1845.

† Medical Statistics may be adduced here as in numerous other instances for or against vaccination. Of the 312 cases, reported by Dr. Gregory, to have occurred in 1844, 24 died—giving a mortality of nearly 8 per cent: while the mortality from small pox after inoculation he represents to be 1 in 500! Dr. Stark in a well written pamphlet lately published, quoting as an authority M. Bousquet, one of the successful competitors for the Prize on Vaccination, gives the mortality from small-pox among the vaccinated, on a basis of 2000 cases, as 1 per cent! 2800 vaccinated persons having escaped

* Annales D'Hygiène Publique et de Médecine Legale, Avril, 1845.

The public are too much disposed to overlook this beneficial effect of vaccination in mitigating the severity of an attack of small-pox; they have been taught to regard it only as a preventive, and are naturally disappointed when they find that so many of the vaccinated are attacked by the malady, forgetting that it is still exerting an important influence in converting a most fatal into a comparatively mild disease. Out of the 312 cases observed by Dr. Gregory in 1844, 100 had only the mild varioloid disease.

Most medical men are now agreed that the small-pox is not likely to be entirely extinguished by vaccination. If the frequency and the virulence of its attacks be diminished, this is all that we can reasonably expect. The Vaccination Act has now been in operation five years. In the year in which it was first introduced, 1840, the deaths throughout England and Wales amounted to 10,434; in 1841 they sank to 6,362; and in 1842, to 2,715. The metropolitan mortality from this disease also underwent a considerable change: in 1840 the fatal cases were 1,235; in 1841, 1,053; in 1842, 360; in 1843, 438. These results strongly favoured the view, that by the diffusion of vaccination the disease was becoming disarmed of its fatality. In 1843, however, small-pox became epidemic in the metropolis, and the number of fatal cases reached 1,804, a much larger mortality than had been known for some years. The epidemic appears to be again subsiding, the deaths in the first quarter of 1845 being 481; in the second only 246; and in the third, just completed, 76.

the disease altogether, thus making the liability to attack as 1 : 15, or rather less than 7 per cent. Dr. Stark makes the deaths from recurrent small-pox, 20 per cent, but it is proper to observe this is only on a basis of 20 cases. These discrepancies are in general owing to conclusions being drawn from unequal numbers, and without regard being had to numerous modifying circumstances, such as epidemic influence, &c.

These occasional accessions of mortality in a most malignant disorder, should not be allowed to operate as a discouragement to vaccination. The concurrent experience of professional men is decidedly in favour of its most complete extension. We may not have derived from it all that Jenner and his immediate followers had anticipated; but it is the misfortune of every great discovery to have its benefits exaggerated. Vaccination has been submitted to a severe ordeal during nearly half a century; and in that period it has beyond all question been the means of rescuing thousands from an untimely death. The Commissioners' Report furnishes satisfactory evidence that they are successfully exerting themselves to diffuse the benefits of vaccination among the poorer classes of society; but much still remains to be done. There is great reason to believe, not merely from the facts here brought forward, but from those accumulated by Dr. Stark from various sources, that, at the highest estimate, not more than *two thirds* of the whole population of England have undergone vaccination. Thus, then, more than *five millions* may be regarded as at present unprotected! The individuals composing this large section of the population are not only themselves exposed to the attacks of this most fatal disease, but they constitute a permanent source for its propagation and diffusion even among those who are vaccinated.

Reviews.

A System of Surgery. By J. M. CHELINS. Translated from the German, and accompanied with additional Notes and Observations. By JOHN F. SOUTH. Parts iv. v. and vi. Renshaw. London, 1845.

THE recent parts of Chelins' Surgery, with Mr. South's additions, realise the

favourable expectations which we formed from a perusal of the earlier numbers. An amount of labour has been bestowed upon the added portion of the notes, which does great credit to the powers of literary research and clinical observation of the Editor. Still the reader cannot fail to observe that, while the greater number of the sections of the original work have received full illustration from the annotator, others have been permitted to stand alone in their original concise form, without the addition of a single case or practical deduction. This occasional omission gives the work a somewhat piebald character; rendering it, in part, an elaborate compilation; and, in part, a mere hand-book—or outline of facts. Thus Chelius's remarks on "injuries of the gullet, thoracic duct, diaphragm, and spinal marrow, connected with penetrating wounds of the chest," are contained in a single paragraph of nine lines, without any practical comment by the editor. The article on Wounds of the Kidneys takes up only twenty lines, and also stands without illustration. We should not have noticed these defects did we not think that they will much impair the usefulness of the compilation, as a work of reference, unless the omissions be made up by the addition of apposite cases (with which our literature abounds) in an appendix; or by a reprint of those pages in which the deficiencies occur. The principal subjects treated of in these three numbers are as follows:—The modes of restraining hæmorrhage. Wounds, including gun-shot and poisoned wounds. (In the article on Hydrophobia, some exceedingly interesting extracts from Professor Youatt's recent work, *The Dog*, are given in illustration of the symptoms of *rabies canina*); Tetanus, Injuries of the Head, Chest, and Abdomen, and Fractures.

Many of the practical facts elicited in the course of this work are of considerable interest and value. A lecture upon the employment of the actual cautery in secondary hæmorrhage, by the younger Cline, should be read by every surgeon. The so-called improvement, which wholly excluded the use of the actual cautery from English surgery, and infected the minds both of patients and surgeons with an in-

superable antipathy to its employment, has certainly thrown an undeserved odium upon a valuable remedy,—this prejudice must eventually be removed. The application of the cautery at a "black heat" has proved a most effectual and comparatively painless measure in various forms of fistulæ, where other operations of a tedious and formidable character would almost inevitably have failed. As a means of counter-irritation the application of the *ferrum candens* is often found at once a mild and an efficacious remedy; and, in cases of sudden hæmorrhage, where proper instruments for securing the bleeding vessels are not at hand, or where the ordinary means of suppressing the flow of blood fail, experience shews that the actual cautery may frequently be had recourse to with safety and success.

The following quotation respecting cicatrices of the uterus is interesting, as tending to prove demonstratively the correctness of an opinion generally held by obstetric authorities.

"Dr. Merrem, of Cologne,* struck with the frequent occurrence of rupture of the uterus in women who became pregnant after having undergone the Cæsarean section, investigated the subject, and has shown that in the nature of the cicatrix by which wounds of the uterus are very often closed we have a sufficient explanation of the accident. It would appear that the wound is not unfrequently closed merely by peritoneum, or, in other cases, adhesions take place between the edges of the uterine wound and those of the divided abdominal parietes, and a fistulous opening into the womb has thus been formed, which continued open for months. Of course, in either of these cases, the uterine contractions in a subsequent labour would soon tear asunder this frail bond of union, and expose the woman to all the dangers of ruptured uterus. Sometimes, indeed, the wound is united by a different process, though one not much more secure. Thus Merrem, on performing the Cæsarean section upon a woman for the second time, found the former incision four inches long, and three fingers breadth wide. It was concave instead of convex, like other parts of the walls of the uterus, and was composed of white glistening fibres, with a dilated blood-vessel running close to either margin. In the twelfth volume of the *Medico-Chirurgical Transactions*, Mr. Birch relates the history of

* Gemeinsame deutsche Zeitschrift für Geburt's Kunde, vol. iii.

a woman who recovered from a rupture of the uterus. Nine years after, having married again, she became pregnant; during labour the uterus gave way, and four days afterwards the woman died.

At the *post-mortem* examination, at which we were present, no trace of the former rupture could be discovered; but its situation, as described by Mr. Birch corresponded exactly to the place where the uterus had again given way. Dr. Merrem conceives "that these cicatrices cause rupture by preventing the natural developement of the uterus, and by interfering with its regular contractions."

We shall conclude our quotations with two cases of fracture of the cervical vertebræ, occurring under peculiar circumstances.

"CASE I.—A sailor, about forty years of age, in good health, jumped headlong from a ship into the sea to bathe, a sail being spread a few feet below the surface to receive the bathers, and protect them from the sharks. It is supposed that his head was violently thrown back on coming in contact with the water or sail, as he immediately became motionless. When got on deck, all the muscles of the limbs and trunk below the shoulders were observed to be paralysed, and respiration was performed by the diaphragm alone. The circulation and temperature were natural, and the senses perfect. In a few hours after the occurrence of the accident, vomiting commenced, and became more frequent till he died, at the expiration of forty-eight hours. Upon examination, the fourth cervical vertebra was found completely severed through its body, which was widely separated from that of the third. The left side of the arch of the fourth was broken in three places, and forced forwards on the spinal marrow, which was crushed and lacerated. The left side of the arch of the fifth was likewise broken, and the spinous process of the third pressed down upon the fourth vertebra. This preparation is in St. Thomas's Museum.

"CASE II.—A man threw himself into a river to bathe, from a height of seven or eight feet, the water being only three feet deep. He came up to the surface, and immediately fell back to the bottom. The bystanders observing he made no attempt to swim, drew him out, and lifted him insensible upon the bank. Upon the arrival of the medical man, he was found pulseless, but with priapism. By the use of ammonia he was revived, but his limbs were paralysed, and when admitted into the hospital an hour after, his body was cold, pulse scarcely perceptible, and the skin quite insensible, but he retained perfect consciousness, complained of pain in the back of his neck, and

could not move his head, which swayed about with its own weight, and was free from ache. He had great disposition to make water, but could not, and the introduction of the catheter was useless, as the bladder contained none. He said, in reference to the accident, that at the moment when he struck the water he felt his hands touch the bottom of the river, and to save his head, drew it violently back, upon which he lost all consciousness. By rubbing, and putting him in a warm bed, he raised himself, and was a little able to move his limbs. But about three hours and a half after his admission, fever, with profuse sweating, came on, and his pulse was stronger and quicker. He soon became delirious, uttered loud screams, and in ten hours and a half from the accident, died. On examination, the back of the neck was largely ecchymosed, the interspaces of the muscles were gorged with blood, and the vertebral canal filled with it. The body of the fifth neck vertebra was broken across the middle of its depth, and the two pieces were completely separated from the lateral parts. Reveillon, who relates the case, thinks that as no contusion was apparent on the head, and that, as it was not even smeared with dirt, it could not have touched the bottom of the river, and therefore that the fracture must have been caused by muscular action."

Notwithstanding the force of the above reasonable arguments, we doubt whether it can be positively asserted that in either of the above cases the fracture was produced from any other cause than from the head coming violently into contact with the sail or the ground. Still, where the body is precipitated into the water from a great height, the resistance of the fluid occasionally produces very serious injuries, as in the well-known instance of the diver, who threw himself from London-bridge, with his arms extended; both humeri were dislocated, and he was thus prevented from saving himself by swimming. We were present at the examination of a body of a sailor who fell into the water from the main yard of a ship, vertex downwards; death occurred from extravasation of blood beneath the arachnoid and softening of the brain.

Copious as the annotator's quotations are, we frequently, in perusing them, have cause to regret that they are not still more numerous:—marked deficiencies are occasionally apparent, especially in facts which have recently been elicited by surgical writers. It is

also not a little observable, that by far the larger number of the Editor's quotations are from the works and verbal observations of his own earlier contemporaries and friends. It is true that the researches of several of those distinguished surgeons have greatly conduced to develope our knowledge of the subjects treated of in the work, but this somewhat exclusive style of quotation might lead an uninitiated reader to believe that nearly the whole progress of modern surgical discovery has moved within a certain and that a somewhat limited sphere:—assuredly a very erroneous and untenable conclusion.

We cannot close our notice of this translation without commending the extreme punctuality with which the parts have been issued;—the example might well be followed by other Editors, the fasciculi of whose works have so long since ceased to appear periodically that the subscribers have learned to watch for the announcement of a new number with the same uneasy weariness of hope long deferred, with which the physicians of old looked for the development of the favourable crisis of a lingering disease.

Proceedings of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, Nov. 10, 1845.

DR. T. THOMPSON, PRESIDENT.

DR. GOLDING BIRD related the following case:—The patient, a young lady, aged ten, came under the care of Mr. Morris, of Peckham, on the 24th of May, 1845. She was pale and anæmiated, and suffered much from dyspnoea; had no appetite, and great disinclination to move; her pulse was feeble and jerking, and ranged from 150 to 170; a loud bruit was audible over the situation of the mitral valves. A year previously she had scarlatina, and subsequently to that, pains in the limbs, with fever; since which, she has always complained of a pain in the left side of the chest, seated considerably above the nipple. She remained under treatment during the next month, and was also seen by Dr. Golding Bird. She then went to Margate, where she seemed, according to her parents' account, to improve very much, gaining appetite and flesh, and improving in spirits and power. She remained there till within the last month, when she returned to London, seemingly improved, but suffering

from an attack of what was supposed to be influenza. By the advice of some friends, the parents were induced to place her under the care of an homœopathic practitioner, who held out to them hopes of cure. The first night of his attendance he gave a teaspoonful of medicine, after which, according to her mother's account, she was seized with pain in the chest, head, and limbs, heat of skin, and great increase of dyspnoea. These symptoms the mother ascribed to the remedy. Notwithstanding these indications, homœopathic treatment was persevered in, the attendants holding out hopes of future amelioration. No interference was allowed; he even prohibited the application of cold vinegar and water to the head, saying, it would destroy the effect of his medicine. Under his care, however, she did not improve, but died on the 28th Oct., in the night.

After-death-appearances.—The body was not wasted, and there was no œdema; on removing the sternum, the lungs were found adherent, partially, on both sides; the adhesions were transparent and easily torn through; about half a pint of fluid was effused into the cavity of the pleura; the substance of the lungs was much congested and infiltrated,—the right more so than the left—and they were plentifully studded with miliary tubercles. The pericardium was universally adherent to the heart, and on the external surface there were some patches of soft cheesy matter, and some of the same substance was deposited beneath the endocardium of the right auricle, and also between the heart and the pericardium. The left ventricle was rather thickened, and there was some slight deposit on the mitral valves. The aortic valves were healthy. There were also adhesions between the pericardium and the lungs. The liver was large, and the kidneys were healthy.

When Dr. Bird saw this girl, on June 30th, she was decidedly strumous; there was violent action of the heart audible over nearly the whole chest; the palpitations too quick to be counted. At mid-sternum both sounds audible, unmingled with murmurs; over the mitral region was low friction sound with a sharp murmur, apparently corresponding to the first sound. Taking into consideration her history and symptoms, he was of opinion that she had a rough pericardium, from previous complaints, with probably the sequelæ or endocarditis. Most likely of the mitral curtain.

The discussion which ensued had reference to the sequelæ of scarlet fever.

MR. HILTON exhibited the trochar with which he is in the habit of performing trephotomy.

Monday, Nov. 17.

DR. A. B. GARROD read a paper on the

antidotal properties of animal charcoal to several poisons, but more particularly those of the vegetable and animal kind. The paper will be published in the forthcoming Transactions of the Society.

Medical Intelligence.

UNIVERSITY OF LONDON.

SECOND EXAMINATION. PASS EXAMINATION.—1845.

Monday, November 3.—Morning, 10 to 1.

Physiology.

Examiners, Prof. T. Rymer Jones.

1. What amount of refraction do the transparent media of the eye respectively cause in bringing the visual rays to a focus, and how are the effects of spherical aberration obviated? Explain how the eye becomes enabled to see objects at different distances, and give examples of special arrangements for this purpose met with in the eyes of Birds and Fishes.

2. Define the physiological differences between the motor, sensitive, and excitatory nerves. Give a few examples of "reflex motor action."

3. Give an account of the blastoderm, or germinal membrane, in the ovum, and state the opinions of modern physiologists relative to the original formation of the animal tissues.

4. What is the intimate composition of the ganglionic system of nerves? State the distinctive properties of organic nervous matter. In what structures is its presence to be detected, and what are its functions in the animal economy?

5. Describe the minute structure of the fibre of voluntary muscle, and its condition, as shown by the microscope, when in the opposite states of contraction and relaxation.

6. Contrast the structure of the compound eyes of Insects with that of the ocelli, or simple eyes, met with in the same animals; and state the uses to which these two forms of visual organs are individually adapted.

7. Compare the respiratory apparatus of a Fish with that of a Bird and of a Mammal, for the purpose of illustrating the influence of respiration upon the animal functions.

Afternoon, 3 to 6.

General Pathology, general Therapeutics, and Hygiene. *Celsus de re Medica.*

Examiners, Dr. Billing and Dr. Tweedie.

1. Explain the occasional results of Hyperæmia (excess of blood), and give examples of each.

2. Enumerate the principal remedies used as Narcotics. Give the rules for their administration, and mention the circumstances

which render their exhibition either doubtful or prejudicial.

3. Describe the effects of prolonged residence in a tropical climate on the European constitution. Sketch the hygienic precepts which are calculated to preserve health under such circumstances.

4. Translate the following passage into English:

Antè adversam autem valetudinem, ut suprà dixi, quædam notæ oriuntur, quarum omnium commune est, aliter se corpus habere atque consuevit; neque in pejus tantum, sed etiam in melius. Ergò si plenior aliquis, et speciosior, et coloratior factus est, suspecta habere bona sua debet: quæ, quia neque in eodem habitu subsistere, neque ultra progredi possunt, ferè retrò, quasi ruinâ quædam revolvuntur. Pejus tamen signum est, ubi aliquis contra consuetudinem emacuit, et colorem decoremque amisit: quoniam in his quæ superant, est quod morbus demat; in his quæ desunt, non est quod ipsum morbum faciat. Præter hæc protinus timeri debet, si graviora membra sunt; si crebra ulcera oriuntur, si corpus supra consuetudinem incaluit; si gravior somnus pressit; si tumultuosa somnia fuerunt; si sæpiùs expergiscitur aliquis quàm assuevit, deinde iterum soporatur; si corpus dormientis circa partes aliquas contra consuetudinem insudat, maximè quæ si circa pectus aut cervices, aut crura vel genua vel coxas. Item si marcet animus, si loqui et moveri piget, si corpus torpet; si dolor præcordiorum est, aut totius pectoris, aut, qui in plurimis evenit, capitis; si salivæ plenum est os, si oculi cum dolore vertuntur, si tempora adstricta sunt, si membra inhorrescunt, si spiritus gravior est; si circa frontem intentæ venæ moventur, si frequentes oscitationes; si genua quasi fatigata sunt, totumve corpus lassitudinem sentit. Ex quibus sæpè plura, nunquam non aliqua febrem antecedunt. In primis tamen illud considerandum est, num cui sæpiùs horum aliquid eveniat, neque idè corporis ulla difficultas subsequatur. Sent enim quedam proprietates hominum, sine quarum notitiâ, non facillè quicquam in futurum præsagiri potest. Facillè itaque securus est in his aliquis, quæ sæpè sine periculo evasit: ille sollicitari debet, cui hæc nova sunt; aut qui ista nunquam sine custodiâ sui tuta habuit. —*Celsus, de Medicinâ, Lib. II. Cap. ii.*

Medicine.

Afternoon, November 4, 3 to 6.

Examiners, Dr. Billing and Dr. Tweedie.

1. Give the rules for the administration of Blood-letting in inflammatory diseases.

2. Describe the anatomical characters and diagnostic symptoms of cerebral softening.

3. Detail the symptoms and progress of inflammation of the cæcum,

4. Explain how Pneumothorax may arise. Sketch its physical signs.

5. Contrast the general symptoms and progress of the eruption in Small Pox and Measles.

6. What diseases of the Skin are included in the order Squamæ? Enumerate the varieties of Pityriasis.

M.B. PASS EXAMINATION—1845.

Tuesday, November 4.—Morning, 10 to 1.

Surgery.

Examiners, Mr. Bacot and Sir Stephen Hammick.

1. Give the symptoms, with the immediate and subsequent treatment, both locally and generally, of incised, contused, lacerated and punctured wounds of the scalp, in their mildest and also in their most aggravated forms.

2. Describe the mode of amputating a right leg at the usual place below the knee. Detail the steps which are to be taken, from the placing of the patient on the operating table, till his return to bed. Give the subsequent management of the case, both locally and constitutionally, till the stump be cured.

3. What are the diseases of the testicle which require the operation of castration? Describe the method of performing that operation, with the after-treatment of the patient, under favourable and unfavourable symptoms.

Wednesday, November 5.—Morning, 10 to 1.

Midwifery.

Examiner, Dr. Rigby.

1. What are the symptoms, &c., during the last few days of pregnancy which would lead you to expect a natural or faulty presentation of the child?

2. What are the causes, diagnosis, and treatment of spurious pains?

3. Describe the condition of the os uteri just before labour, and the changes which it undergoes during labour.

4. Why is the child liable to be still-born in face and nates presentations?

5. Describe the last stage of labour, and your management of it.

6. What are the causes which lead to insufficient or irregular contractions of the uterus after birth of the child?

7. Describe the points requiring your attention and treatment, as regarding mother and child, during the first three days of the ordinary course of childbed.

Afternoon, 3 to 6.

MEDICAL JURISPRUDENCE.

Examiners, Mr. Brande, Dr. Pereira, and Dr. Rigby.

1. Describe Marsh's and Reinsch's tests

for the discovery of arsenic, and point out their respective merits and defects.

2. What are the distinctive effects of carbonic acid upon the system, where it is slowly generated and largely diluted with common air (as by burning charcoal in a close room), as opposed to those where a person is suddenly immersed into it (as in descending into a vat or well in which the gas has previously accumulated)?

3. You are requested to enumerate the general characteristics of poisoning, as derived from symptoms, morbid appearances, and chemical analysis.

4. How would you distinguish poisoning by opium from apoplexy, and from intoxication by alcohol?

5. Enumerate those signs of pregnancy by which you can confidently declare on oath whether or not a patient be pregnant.

6. In the case of a dead child, what are the evidences of its having been alive during and after labour?

BACHELORS OF MEDICINE.—1845.

First Division.

Baines, Matthew, King's College.
Brown, Frederick James, University Coll.
Evans, David Peter, King's College.
Hensley, Frederick John, King's College.
Jackson, Alfred, University College.
Ody, John, King's College.
Palmer, Thos. Apothecaries' Hall of Ireland.
Radcliffe, Ch. Bland, Leeds School of Med.
Steel, Samuel Hopkins, King's College.
Stiff, William Phillimore, University Coll.
Walcott, R. Bowie, St. Thomas's Hospital.
Wayte, Charles Matthew, Gny's Hospital.
Whittle, Ewing, R. Coll. of Surg. in Ireland.

Second Division.

Barker, Thomas Herbert, University Coll.
Duncan, James, King's College.
Ridgway, Archibald Redfoord, Lond. Hosp.

COLLEGE OF CHEMISTRY.

By the command of her Majesty this College is to be hereafter called The Royal College of Chemistry. His Royal Highness Prince Albert has accepted the office of President, and has presented the College with a donation of one hundred pounds.—*Times.*

CHAIR OF CLINICAL SURGERY IN THE UNIVERSITY OF EDINBURGH.

Mr. LISTON has written to us strongly denying that he ever made any offer to the late Professor Russell to purchase the Chair of Clinical Surgery in the University of Edinburgh, as alleged in an extract of Professor Syme's letter, printed in our last number. He states that the assertion was contradicted by him in the public journals of the period.

[The extract referred to was printed with

the letter at Professor Syme's particular request. Had we been aware that Mr. Liston had publicly contradicted the statements contained in it, the extract should not have been inserted.]

ROYAL FREE HOSPITAL.

DURING the last week an inquiry took place before Mr. Wakley, relative to the death of a young female who had come up from the country, in the last stage of phthisis, in order that she might obtain admission into the "Royal Free Hospital." The verdict of the jury will sufficiently express the result of the inquiry. It was to the effect, that the deceased woman had died from pulmonary consumption at a public tavern, after having, with a companion, been refused admission to the wards of the Royal Free Hospital: and the foreman added, that "in returning this verdict they could not refrain from expressing their astonishment and regret at hearing it proved in evidence that the deceased woman, and the companion who had travelled with her on the preceding night from Windsor in a state of extreme destitution and disease, were denied admission to the wards of the said hospital, when it was proved that immediately after that refusal three women labouring under a foul disease, that was not dangerous and urgent, sent from the City of London Union, were received into the hospital for medical treatment."

We should not have noticed the subject, but that we believe the public to be under a complete mistake in supposing that phthisical as well as other cases are more freely received into this Institution than elsewhere. The Royal Free Hospital has deservedly brought upon itself the censure implied in the verdict of the jury. Its advertisements, containing frequent appeals to public charity, would lead to the supposition, that it was the only hospital in London where the poor can obtain admission without a Governor's order; and the assumption of the title "*Free*" is itself an unjust insinuation against the other large charitable institutions of the metropolis, that their doors are closed against poor and needy applicants. We believe that provided a case be worthy of admission, the formality of an order throws no obstacle to the reception of a patient into these institutions, although he may be poor, friendless, and destitute.

STATE OF THE PUBLIC HEALTH IN THE PAST QUARTER.

THE public health, during the past quarter ending September 30th, was good; for the deaths, notwithstanding the increase of the population, were only 36,008, or 1870 less than the average of the corresponding quarters of five former years (1840—44). This favourable state of things was general, and

was observed in the majority of the town districts of the Kingdom. The southern coast has been unusually healthy through the summer; the deaths in Brighton, on an average 262, were only 219; in the Isle of Wight, the deaths, on an average 183, were 121; in the Portsea Island (Portsmouth), the deaths, on an average 299, were 239; in Exeter, the deaths, on an average 200, were 160; in Plymouth, the deaths, on an average 224, were 191; in Penzance, the deaths, on an average 292, were only 166 in the quarter ending September, 30th, 1845. The mortality has been *below the average* in every district round the south-eastern and southern coast from London to the Land's End; yet the average mortality itself is low throughout that part of the country. In the last Report, it will be seen that only 1.9 per cent., or 1 in 52, of the inhabitants dies annually in the south-eastern and south-western divisions, while the annual mortality of the whole kingdom is 1 in 45.* The mortality was *above the average* of the corresponding quarter in the following districts:—Northampton, Bedford, Yarmouth, Kidderminster, Leicester, Rochdale, Halifax, Bradford, Pontypool, Newtown, Holywell, and Anglesey.

Leicester is an unhealthy district; the average mortality is high; the average number of deaths in the summer quarter is 325, and in the last quarter no less than 457 deaths were registered. The Registrar of the East District remarks—"Since that time (1840) vaccination seems to have been totally neglected; hence the great increase of deaths for this and the preceding quarter. I have registered 73 deaths from natural small-pox, and only 4 persons that had been vaccinated, and those only very doubtful. Measles has been very fatal; I have registered 57 deaths from that epidemic. The fatality of small-pox is mentioned by the Registrars of Yarmouth, Northampton, Wolverhampton, Birmingham, Coventry, Basford, Liverpool, Bury, Prescott, and other districts, in their remarks.

Metropolis:—76 deaths from small-pox were registered in the quarter: the average is 130. In the week ending September 13th, no death from small-pox was registered. Such an exemption has never before been observed since the new tables were published. Measles has been epidemic; and he died worn out by hectic fever, and discharge from the sores, but without having had any affection of the spinal chord, in the month of October, 1841.

* In Austria, including the northern parts of Italy, the annual mortality is 1 in 33, Reg. Gen. 6th Report, 8vo. pp. xxxix; and the mortality throughout Italy is not less than in Austria. In the cities of Italy the mortality, according to official documents, varies from 3 to 4 per cent. In France the annual mortality is 1 in 42.

688 deaths have occurred from that disease; the summer quarterly average is 404! Hooping-cough has been prevalent. Of Scarlatina only 194 persons, chiefly children, died; the average is 476.

CAUSES OF DEATH.	Quarterly Average of Deaths in the Five June Quarters, 839-43.	Deaths in the Spring Quarter, ending June 28, 1845.
ALL CAUSES	11131	10842
SPECIFIED CAUSES	11083	10802
The following selection has been made of the number of deaths from the most fatal diseases:—		
Small Pox	130	76
Measles	404	688
Scarlatina	476	194
Hooping Cough	275	385
Croup	80	75
Thrush	111	105
Diarrhœa	331	449
Dysentery	59	43
Cholera	54	26
Typhus	352	273
Sudden Deaths	150	91
Hydrocephalus	475	421
Apoplexy	197	266
Convulsions	781	608
Bronchitis	73	191
Asthma	113	101
Phthisis or Consumption	1833	1558
Disease of Lungs, &c.	126	123
Pericarditis	8	12
Aneurism	8	11
Disease of Heart, &c.	218	348
Teething	301	217
Childbirth	71	70
Old Age	686	569
Violent Deaths	292	342

The weather presented this remarkable peculiarity—that the mean temperature of every week of the thirteen was below the average. The mean temperature of the quarter at Greenwich was $57^{\circ} 1$; which is nearly 4 degrees below the average of the season. The month of August was 5° below the temperature of the same month on an average of 25 years. Seven inches of rain fell at the Observatory. The results varied considerably in other parts of the country. The temperature of summer last year (1844) was 2° below the average: but the state of the crops, and particularly of the potatoe crop in 1845, and its possible effects on the public health, render a comparison of the whole meteorological phenomena of 1844 and 1845 interesting. On a mean of 936 observations, the month of

March in 1845 was $3^{\circ} 2$, of June 0.7 , and of September $1^{\circ} 3$ below the temperature of the corresponding months of 1844. The quantity of rain which fell in June and September 1845, was also much greater than in 1844.

Selections from Journals.

[IN our notice of Mr. South's translation Chelius (p. 1346), we have quoted two cases of fracture of the cervical vertebræ; in those instances death quickly supervened. In the following examples, however, life was remarkably prolonged: we regard them as cases of great and singular interest.—ED. GAZ.]

CASE OF FRACTURE OF THE TWO FIRST CERVICAL VERTEBRÆ—DEATH IN FIFTEEN MONTHS. BY M. SPANGENHERN.

An officer, 28 years of age, fell from his horse on the 28th July, 1839, and lighted on the side of his head on softish ground. He immediately remounted, and rode about half a league, when, on arriving at a village, he heard something give way with a crack in his neck, and fell insensible to the ground. Some minutes elapsed before he recovered consciousness, when he felt he could not keep his head erect but by the aid of his hands. When brought to the military hospital, a swelling about the size of a five-shilling piece was remarked over the left parietal bone, a little behind the coronal suture. At the upper part of the nape of the neck there existed a considerable swelling, in the middle of which there could be felt a hard apparently mobile tumor over the seat of the axis, and having the form of the spinous process of the seventh cervical vertebra. The least pressure on this part, or the slightest attempt to rectify the position of the head, or cause it to perform the movement of rotation, caused the most acute pain. The slightest movement also caused a crepitating sound to be distinctly perceived. The head hung forwards, with the chin on the sternum. There were no symptoms of any injury of the spinal marrow. Blood-letting and other antiphlogistic treatment had the effect of subduing the inflammatory action, which followed the injury; and, after some months of treatment, he recovered so far as to be able to walk about, having his head supported by the apparatus of Shaw. In the spring of 1840, violent pains in the head and pharyngeal region, with marked symptoms of chronic inflammatory action of the cervical vertebræ, again laid him up; but notwithstanding active treatment by leeches, stimulant frictions, moxas, and the actual cautery, abscesses opened in several places,

An abscess filled with purulent matter was found under the superficial layer of muscles over the nape of the neck; those nearer the vertebrae were partially destroyed by suppuration, or degenerated. The transverse processes of the third and fourth cervical vertebrae were carious, as were also the bodies of all the vertebrae at this part of the neck. The ligaments and inter-articular cartilages, especially those of the atlas and axis, were swollen and corroded. A large abscess, containing four ounces of foetid purulent matter, extended from the occipital hole to the seventh cervical vertebrae; it communicated with an abscess which had opened under the clavicle by means of a fistulous opening. The posterior arch of the atlas was fractured near its articular process; it was carious and absorbed to a considerable extent. The body and transverse processes of the axis presented the same kind of degeneration. The odontoid process was fractured, its ligaments in part destroyed, yet the spinal chord was uninjured, and apparently normal. The brain was healthy.—*Edinb. Med. and Surg. Journal*, Oct. 1845, from *Allgemeine's Repertorium*.

FRACTURE OF THE DENTATA—DEATH AFTER SIXTEEN MONTHS. BY DR. COWLAND.

A MUSCULAR man, aged about 60 years, was turning in bed, his head being forcibly pressed on the pillow, so as to partially raise the trunk, felt something snap in his neck. He was afterwards unable to bend or rotate the head without causing much pain in the neck. I inferred that rupture or laceration of some of the small muscles or ligaments had occurred, and advised quietude and various means, which palliated the more painful symptoms. Still the least movement of the head caused distress. Notwithstanding this he travelled outside a coach, during the summer, to Cornwall, and returned to town; and not till *sixteen months* after the accident he complained of numbness and want of power in the left arm: In a day or two the palsy extended to both the upper extremities, but was incomplete in the right; it soon became more general, and in a short time difficulty of breathing, rapidly terminating in asphyxia, supervened. The body was examined by Professor R. Quain and myself, and the second cervical vertebra was found fractured completely across on both sides, the fracture on one side passing close to the base of the odontoid. Chronic inflammation had extended from the fracture to the theca and membranes of the medulla oblongata; lymph was thrown out upon the arachnoid surfaces; the membranes, particularly the dura mater, were much thickened, and ultimately the chord at this part was compressed.—*Dict. Pr. Med.*

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Nov. 22.

BIRTHS.		DEATHS.		Aver. of 5 yrs.
Males...	639	Males...	475	Males... 491
Females...	578	Females...	434	Females... 472
1217		909		963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.)

Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James...	(Pop. 301,326)	144
NORTH—St. Marvlebone; St. Pancras; Islington; Hackney...	(Pop. 366,303)	129
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London...	(Pop. 374,759)	200
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar...	(Pop. 393,247)	198
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich	(Pop. 479,469)	238
Total		941

CAUSES OF DEATH in the Week ending Nov. 22.

Col. A. Weekly Averages of 5 Autumns; Col. B. of 5 Years.

	A.	B.
ALL CAUSES	909	1020
SPECIFIED CAUSES	905	1010
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases	294	1184
Sporadic Diseases, viz.—		
2. Dropsy, Cancer, &c. of uncertain seat	79	109
3. Brain, Spinal Marrow, Nerves, and Senses	141	155
4. Lungs, and other Organs of Respiration	294	323
5. Heart and Blood-vessels	31	27
6. Stomach, Liver, and other Organs of Digestion	60	68
7. Diseases of the Kidneys, &c.	8	6
8. Childbirth, Diseases of the Uterus, &c.	6	12
9. Rheumatism, Diseases of the Bones, Joints, &c.	7	6
10. Skin, Cellular Tissue, &c.	2	1
11. Old Age	48	74
12. Violence, Privation, Cold, and Intemperance	25	27

The following is a selection of the number of Deaths from the important special causes:—

Small-pox	8	Convulsions	33
Measles	63	Delirium Tremens	3
Scarlatina	25		
Whooping-cough	50	Bronchitis	54
Croup	7	Pneumonia	90
Thrush	1	Phthisis	105
Diarrhoea	9	Dis. of Lungs, &c.	15
Dysentery	2		
Typhus	5	Teething	4
		Gastritis	1
Hæmorrhage	1	Enteritis	8
Dropsy	7	Peritonitis	11
Debility	24	Tabes Mesenterica	2
Sudden deaths	3	Dis. Stomach, &c.	1
		Dis. of Liver, &c.	15
Hydrocephalus	43		
Apoplexy	21	Childbirth	3
Paralysis	20	Dis. of Uterus, &c.	2

REMARKS.—The total number of deaths was 111 below the autumnal and 54 below the annual average. The deaths from Zymotic diseases, with the exception of Measles and Whooping-cough, are below the averages. The mortality from

LONDON MEDICAL GAZETTE.

Lectures.

CLINICAL LECTURE ON SURGERY,

Delivered at St. Bartholomew's Hospital,

By W. LAWRENCE, Esq. F.R.S. &c.

[Reported by MR. HOLMES COOTE.]

*Retention and Incontinence of urine —
Inflammation of the hand from injury —
Penetrating wound of the chest.*

RETENTION OF URINE FROM STRICTURE.

CASE I.—*Retention of urine from stricture of the urethra—Opening made into the canal behind the contraction.*

I HAVE before me, gentlemen, the bladder and urethra of a patient in whom an opening was made into the membranous portion of the canal, to relieve retention of urine.

The history of the patient, who was a rather corpulent man, between sixty and seventy years old, is imperfect. He was supposed to labour under fever; was therefore carried to the London Fever Hospital, where it was soon found that the abdomen was enlarged, by the bladder being distended and hard, and reaching to the umbilicus. The resident medical officer failing in his attempts to introduce the catheter, had the patient conveyed forthwith to this hospital. Although the general symptoms, and the state of the pulse particularly, were not very unfavourable, he was unable to give any clear account of his condition, further than that he had for many years passed his urine with difficulty, and had been in different hospitals for occasional relief. He was in a dosing state, but answered questions tolerably well.

A moderate-sized catheter passed with some difficulty through an irregular and contracted urethra, as far as the bulb, where a firm resistance opposed all further progress, and the attempts to introduce smaller instruments were equally unsuccessful. Deeming it necessary to relieve the bladder without delay, I made an incision in the perineum, similar to that for the lateral operation of lithotomy, but smaller; then, observing the bearing of the parts in reference to the arch of the pubes, I pushed the point of the knife inwards towards the mesial line, and punctured the membranous part of the urethra. Carrying the forefinger of the right hand into the wound, I felt the puncture as a slit, and immediately introduced a large gum elastic catheter into the bladder with perfect ease, and drew off sixty-four ounces of urine.

Through the tube, which was left in the
940.—xxxvi. Dec. 5, 1845.

bladder, and properly confined, the urine continued to flow; but the patient became gradually comatose, and died a few days after his admission.

The coats of the bladder, particularly the muscular, are thickened, but not otherwise unhealthy; the urethra, irregular and contracted in its whole course, is especially narrow, indurated, and slightly ulcerated, just in front of the bulb; the passage, however, does not appear so far contracted as to account for complete retention.

CASE II.—*Inflammation of the mucous membrane of the bladder, and retention of urine from stricture. Incision of the urethra behind the stricture.*

Absalom Adams, æt. 38, a healthy married man, of irregular habits, many years ago contracted gonorrhœa, which was followed by stricture of the urethra. Subsequently he had an abscess in the perineum, which was opened in the Oxford Infirmary. The wound did not completely close for several months, a fistulous passage remaining, through which passed the greater part of the urine. The cicatrization of the wound in the perineum, and the re-establishment of the proper channel for the urine, induced him at once to relapse into his former irregularities.

The stream of water, which, when he left the Oxford Infirmary, was of tolerable size, became smaller and smaller. In the early part of 1843, after a debauch, complete retention of urine came on, and he was admitted into this hospital.

The warm-bath and the administration of opium procured relief, but the stream of water was extremely small. While he remained in the hospital, frequent but ineffectual attempts were made to reach the bladder with instruments of all kinds and of different sizes.

Towards the end of August he became outpatient, passing his water in a very small stream, and with difficulty. There was also some incontinence.

Sept. 26th.—The house-surgeon made a careful but ineffectual attempt, in the surgery, to introduce the smallest silver catheter into the bladder, taking great care to keep the point of the instrument in the proper direction, and to use very little force. The patient complained of some pain at the time, and about an ounce of blood flowed from the urethra afterwards. He left Smithfield to walk to Long Acre, and had not proceeded far when he had a severe rigor. During the day, he passed, upon each occasion with pain and difficulty, small quantities of urine tinged with blood. In the evening he had another rigor; pain came on in the perineum and hypogastrium, and he passed a bad night.

27th.—He was brought to the hospital shivering violently, and labouring under complete retention of urine; the tongue was furred, the pulse feeble, and the extremities cold. He was placed in bed, where, after taking some brandy and water, the circulation recovered. He then endeavoured to pass his urine, but blood only flowed in drops. Half a drachm of laudanum was administered, and he was put into a warm-bath, where the spasm subsided. He then made water, and was in comparative comfort.

28th.—Has slept during the night, but is heated and thirsty; has vomited several times this morning; has passed some healthy urine.

Admoveantur Hirudines, xii. regioni hypogastricæ.

29th.—Has vomited less frequently, but is still feverish.

Sumat. haustum Sodæ Tart. 6tis horis.

Oct. 1st.—For the last two days there has been more uneasiness, with increased frequency of micturition. The perineum is swollen, and tender upon pressure. The bladder cannot be felt above the pubes.

Admoveantur Hirudines xii. perineo; Fotus, et cataplasma postea.

3d.—Increased difficulty in making water. The perineum is still swollen and tender.

Admoveantur Hirudines vi. perineo; Fotus, et Cataplasma postea.

5th.—The pain in the region of the bladder is considerably increased; the perineum is more tender; the little urine which he passes is of brown colour, ammoniacal odour, and deposits a copious viscid mucus. The bladder is distended, and rises above the pubes; it is felt as a tense and tender swelling from the rectum. As the inflammation of the bladder was increasing, and there was imminent danger of the urethra giving way behind the stricture, I determined on opening the canal in that situation: with a double-edged scalpel I made an incision similar to that made in Case I. The cellular and adipous tissues were thickened and indurated, but there was no formation of pus, nor extravasation of urine. Pushing the point of the knife to the depth of five inches in the middle line, I opened the membranous portion of the urethra, when the urine came out in a full and forcible stream. Using the forefinger as a guide, I easily introduced into the bladder an elastic catheter, and drew off, with great relief to the patient, a large quantity of urine. The catheter was then secured by a bandage passed round the thighs.

8th.—The elastic catheter was withdrawn, and a silver catheter was passed down the urethra. It went as far as the stricture, when about an ounce of pus flowed from the

tube: it was then withdrawn. The urine is no longer alkaline, but it has a peculiar odour, somewhat resembling milk, and reddens litmus paper.

12th.—The urine is again alkaline.

R. Acid. Nitric. Dilut. Acid. Hydrochlor. dilut. aa. ℥xx.—Decoct. Pareiræ Bravæ, ʒij. ft. haust. ter die sumendus.

23d.—He continued to take the acid draught. Has required no other medicine. The urine, which flowed through the wound after the elastic catheter had been withdrawn, now passes almost entirely by the urethra, and there is no incontinence. The opening in the perineum is nearly closed. An elastic catheter (No. 2) was introduced into the bladder through the urethra, for the first time, to-day, passing with some difficulty. The urine, slightly acid, still deposits a viscid mucus; specific gravity 1015.

Nov. 17th.—The wound of the perineum is closed; silver catheter (No. 6) freely enters the bladder.

He attended the hospital for some time, as out-patient, to have an instrument passed occasionally, but the size could not be increased beyond No. 6. He voided the urine freely, but the bladder could not contain more than eight ounces.

CASE III.—*Retention of urine from stricture.—Urethra opened behind the stricture.*

I was lately called in, to a gentleman, 51 years of age, of stout and robust frame, who had lived freely and enjoyed excellent health, with great power of exertion. He was unable to pass his urine, and ineffectual attempts had been made to relieve him during the preceding twelve hours, with instruments of various kinds. He was suffering most severely from paroxysms of violent spasmodic character, in which he was quite unable to control himself, being comparatively easy in the intervals. Finding that he had not suffered much from disease of the urethra previously, I attempted the introduction both of elastic and silver catheters, though with little hope of success after what had been already done in that way. These attempts being unsuccessful, the warm-bath was employed, with two half-drachm doses of laudanum, the second at the interval of one hour from the first. He had already taken a large dose of calomel, with extract of colocynth, and an eight-ounce senna mixture. After the laudanum he took two drops of croton-oil. As these means produced no effect either on the urethra or bowels, I proceeded to the operation, expecting, as the patient was stout, that there would be a considerable thickness of parts to be divided. I entered the double-edged scalpel deeply in the perineum; and

when it was withdrawn, on completing the incision, the urine was projected forcibly through the wound. I immediately introduced an elastic catheter, through which more than two pints of most offensive alkaline urine were evacuated. It was opaque, dark coloured, as if from the intermixture of blood, and highly ammoniacal. At the bottom there was a quantity of thickish stuff, abounding in small fragments of phosphatic matter. The urine flowing freely through the tube left in the bladder, gradually became nearly clear; then, in a few days, it passed into a glairy state, so that it came with difficulty through the catheter, which it was necessary to replace with one of larger size. The whole fluid was in this condition; nearly as thick as the mucilago acaciæ, partially opaque, and of the usual urinous colour. It had more or less of this character for two or three weeks, when it again became of natural appearance. Dr. Prout, who saw the glairy urine, ascribed its peculiar appearance to the action of ammonia, with which it abounded, on purulent matter; and he therefore concluded that the bladder, or some portion of the urinary apparatus, had secreted pus or purulent matter. It has been necessary in this case to change the tube frequently, as its extremity in the bladder becomes soon encrusted with a deposit of phosphates. The tube is still in the bladder, at the end of eight weeks, causing no inconvenience by its presence. Urine passes in small quantity through the urethra, and would probably come entirely in that course if the tube were removed.

These three cases shew the course that you should pursue in treating retention of urine consequent on stricture of the urethra, when relief cannot be obtained either by the use of the catheter or internal remedies. You have a choice of two proceedings; puncture of the bladder above the pubes, or incision of the membranous portion of the urethra. In cases of old stricture the bladder is contracted, and its coats are thickened, so that it may probably not rise high enough into the abdomen to be punctured without risk. The incision of the urethra is simple, easy, and free from danger, under all circumstances. In Case II., inflammation of the urethra, extending to the bladder and marked by pain on pressure above the pubes, frequent desire to make water, which was ammoniacal, and contained a viscid mucus resembling birdlime, had extended to the perineum, producing considerable swelling, with redness and heat. The additional depth of the perineum, and the probability of suppuration having taken place, might be urged as objections to the operation under such circumstances. They caused, however, no un-

usual difficulty, as the urethra was opened in about a minute.

In executing the operation, the pelvis should be brought to the edge of the table or bed, and the perineum should be exposed as in the lateral operation of lithotomy, the lower extremities being supported in proper position by assistants: an incision of an inch in length should be made on the left side of the perineum, beginning at the raphe, about an inch in front of the anus, and extending outwards and downwards. Continue the dissection towards the middle of the perineum, and you will easily puncture the membranous portion of the urethra, which is distended in these cases. You will remember that this part of the canal is situated under the pubes, so that a line drawn perpendicularly from the arch of the bone, in the erect attitude of the body, would strike it about the middle. The inferior surface of the membranous portion is about an inch below the bone. The puncture of the urethra is followed by escape of the urine. An elastic catheter, guided by the forefinger of the left hand, is introduced at the opening, and carried on into the bladder. A portion of the instrument should be cut off, to reduce it to a convenient length; and it may then be fixed, by means of a tape, to a band surrounding the pelvis.

INCONTINENCE OF URINE FROM STRICTURE.

CASE I.—Stricture, with great distension of the bladder, and incontinence of urine; use of the lancetted stilette.

There or four years ago, a patient, about fifty, and otherwise in good health, applied for admission into the hospital because he could not hold his water. This inconvenience had come on and increased gradually, so that at last the urine could not be expelled in a stream, but dribbled away constantly. The abdomen was nearly as large as that of a female in the last month of pregnancy; its lower and anterior part being occupied by an enormously enlarged bladder. The patient, who had supposed that he could not retain any urine, was much surprised at learning the nature of this enlargement. There was a firm unyielding stricture behind the bulb, through which no instrument had passed for several years. After repeated ineffectual trials of various instruments I determined to employ that of Mr. Stafford. On the first occasion, after protruding the lancet to its full extent, the instrument passed on half an inch, and there was but little bleeding. Two days after the instrument was again employed, and the lancet freely protruded; it now passed on through the contracted portion. I withdrew it, and introducing into the bladder with ease a catheter (No. 9), drew

off between 70 and 80 ounces of urine. It was necessary to use the catheter daily; the bladder gradually regained its contractile power, and the patient left the hospital at the end of three or four weeks, considering himself well. As we saw nothing more of him, the relief was probably permanent.

CASE II.—Retention of urine and incontinence from old stricture; use of the lancetted stilette.

Thomas Spencer, 45, a short stout man, of intemperate habits, about 20 years ago contracted gonorrhœa, which continued for 18 months, and was followed by difficulty in making water. He has since frequently suffered from pain in the region of the bladder and kidneys, and frequent desire to make water; occasionally he has been unable to void any for two days together, and then it has passed in a small stream with great pain. The size of the stream had gradually decreased until 18 months ago, when the urine dribbled from the penis involuntarily, especially during the night, and it has continued to do so since. He applied to the hospital Feb. 6th, and was treated as out-patient; repeated and unsuccessful attempts, followed by considerable bleeding, were made to introduce a small catheter, and in consequence he was admitted into the hospital. The bladder was distended, and reached the umbilicus. The urine was always dripping from the penis, keeping the person and the clothes in a wet and filthy state. There was pain in the region of the bladder and in the loins. Various instruments were tried, but none could be carried through the stricture, which was situated behind the bulb; I therefore introduced the lancetted stilette, and pressing it strongly against the stricture, entered the urethra to the length of seven inches, when profuse bleeding ensued, and I withdrew it. The bleeding ceased in a short time on the application of cold. Castor oil was administered, and, after a free evacuation of the bowels on the following morning, a large quantity of urine was passed, the distended bladder being much reduced in size, but not entirely emptied. The bladder became distended as before, and the incontinence continued. A week after the use of Mr. Stafford's instrument, a small catheter (No. 3) being introduced into the bladder, 40 ounces of clear urine were drawn off. The catheter was now daily introduced, and the size gradually increased, the quantity of urine drawn off slowly diminished; and the patient was occasionally able to make water in a small stream.

Feb. 25.—The urine was turbid from mucus, and he complained of pain in the

hypogastrium. The symptoms subsided with the use of the warm bath, purgatives, and barley-water.

April 18th.—No. 9 catheter was passed into the bladder: the quantity of urine drawn off did not exceed two or three ounces.

April 29th.—Some occasional dribbling has been removed by the application of a blister to the loins. He is now able to make water in a good stream, and to retain it at pleasure. Discharged.

Incontinence of urine, various in kind and degree, is not an unfrequent accompaniment of stricture, although the primary and obvious effect of the disease is to obstruct the flow of water. Inflammation of the mucous membrane of the bladder, caused by stricture, may render the organ so irritable that it will not bear distension. The desire to make water recurs frequently, and so urgently, that if it is not gratified the fluid escapes involuntarily.

In a case of bad stricture, powerful exertions, both of the bladder and the respiratory muscles, are required to empty the bladder. When these efforts cease the urethra remains full of water behind the stricture, where it is probably dilated, and the patient is incommoded by the gradual escape of this portion of urine after he supposes that he has done making water.

A more serious kind of incontinence occurs when the bladder empties itself imperfectly, and thus becomes distended to a greater or less degree. We have here the apparently opposite conditions of retention, at least partial, and incontinence. When the bladder is moderately distended, the muscular coat gradually increases in thickness, and the expulsive effort is more powerful. The neck of the bladder, which in the normal state is closed so as to limit the collection of water in front, gives way to the powerful exertion of the hypertrophied muscular coat, and remains permanently open, so that the urethra is constantly full behind the stricture. If, under the serious impediment of a bad stricture, the bladder should become enlarged to the capacity which it attained in the two cases now related, it becomes incapable of contraction. The mere distension, however, produces the same effect as the powerful action of the muscular coat does in the other instance, that of keeping the neck open, and the urethra filled with water behind the stricture. In this state of things the action of the respiratory muscles, in the usual motions of the body, or their regular contractions in normal respiration, and still more any irregular or more considerable exertion in either of these ways, will force out the urine through the stricture.

It must be obvious that the great annoy-

ance of incontinence of urine, under these circumstances, can only be remedied by relieving or curing the stricture, and thus preventing the accumulation of the fluid in the bladder. When this object cannot be accomplished by the safer means of bougies or catheters, the lancetted stilette may sometimes be resorted to with advantage. It is a dangerous instrument, and must be used with great caution; but it will sometimes afford more speedy and effectual relief than can be attained in any other way.

INFLAMMATION OF THE HAND FROM INJURY.

CASE I.—Inflammation of the hand and fore-arm, from lacerated wound of the thumb, with fracture of the last phalanx, and exposure of the joint.

John Wood, æt. 32, printer, of temperate habits, and in good health, whilst crossing the street, on May 25, slipped, and fell near the wheel of a cart, which passed over the right thumb, crushing it severely. He came at once to the hospital. A severe lacerated wound extends, on the inner side, from the middle of the first metacarpal bone to the end of the thumb: the last phalanx is fractured, and the last joint is exposed. It was not ascertained whether the metacarpo-phalangeal articulation was penetrated, but the external surface of the joint was comprised in the laceration and contusion. The edges of the wound were brought together by adhesive plaster; the patient, kept in bed, had his arm elevated upon an inclined plane placed by his side, and a cold lotion was applied. Two pills of colocynth and calomel were administered immediately, and an opening draught subsequently. Milk diet.

May 26th.—He has had some sleep, but feels the hand painful. The thumb and back of the hand are red, swollen, and hot.

Twelve leeches to the hand. The adhesive plaster removed from the wound, and a linseed poultice substituted.

27th.—The swelling, redness, and heat, have extended to the fore-arm: the hand, inflamed throughout, is twice its natural thickness: the arteries of the affected limb are much fuller, and beat very powerfully in comparison with those of the other side. There is severe pain of the hand and wrist, which has entirely prevented rest. There is headache, with heat and thirst, foul tongue, and loss of appetite. Sixteen ounces of blood were taken from a vein of the inflamed limb. The blood was as much buffed and cupped as that of a patient labouring under pleurisy. The venesection afforded great relief.

28th.—He is easier: the swelling and redness have diminished; some thirst and heat of skin remain.

Sumat. haustum Ammonizæ Acetatis cum Liq. Ant. Pot. Tart. et Mag. Sulph. aa. ʒi. 6tis horis.

29th.—There is some renewal of pain: although the heat and redness of the forearm are abated, it is still swelled on the palmar aspect, near the wrist. The thumb continues swelled and red, but the wound is suppurating favourably.

Twelve leeches to the forearm; linsced poultice.

30th.—The leeches repeated.

31st.—A collection of matter at the root of the thumb, on the back of the hand, was punctured. The swelling of the forearm, near the wrist, and the preceding symptoms, left little doubt that suppuration had occurred; but there was no distinct fluctuation. Two ounces of thick yellow pus were evacuated by a deep incision: it had formed under the flexor muscles.

June 5th.—The wound of the thumb is nearly closed, but the swelling and stiffness remain, and there is discharge from an opening over the last joint. It is now found that the articular cartilages of both joints are gone; the ends of the bones grate distinctly on motion.

12th.—The wound is healed. The thumb is still somewhat swelled, and there is but little motion in either joint; the grating is no longer perceptible. The fingers are stiff.

17th.—The fingers are so far recovered that there is no doubt of their regaining complete power of motion; there is freer movement in the two joints of the thumb, and no grating is now perceived in either articulation. The patient left the hospital soon after the last date, and called to shew his hand at the end of six weeks. The motions of the fingers and those of the thumb on the carpus were perfectly free; the stiffness of the two last joints of the thumb was much lessened, so that he could perform all the movements necessary in his occupation as a printer.

CASE II.—Violent inflammation of the hand and forearm from bruise of the thumb; consequent induration of all the soft textures, and permanent stiffness of all the joints.

A carpenter, 60 years of age, an industrious, steady person, of good constitution and temperate habits, who had always enjoyed good health, met, ten months ago, with a severe bruise of the left thumb, which was jammed between two boards. The integuments on the palmar aspect were lacerated, and bled; but the phalanges, and the joint between them, were not injured. Swelling and inflammation soon came on, extending quickly to the hand and wrist, the whole extremity being greatly enlarged, red, hot,

and throbbing violently. For ten days and nights he was in almost constant agony. Extensive suppuration ensued, both in the palm and back of the hand, and there were successive formations of matter in both situations. These were punctured from time to time, the number of openings having been, according to the patient's account, twelve or thirteen. I saw the case at the end of six weeks, when the hand and neighbouring half of the fore-arm were greatly swelled and misshapen; matter was discharging freely at the palmar and dorsal aspects, and all motion was lost. The treatment had consisted merely in lotions and poultices, with rest: there had been no bleeding, either general or local. The patient called on me four or five months afterwards. The inflammation had ceased, and the openings had closed for some time, and the swelling had nearly gone. All the soft structures, both of the hand and fingers, were thickened, indurated, and consolidated into an unyielding mass, firmly adherent to the bones. The palm of the hand was as rigid and hard as a board. There was no power of flexion or extension in any joint of the fingers. The wrist was equally stiff; and the carpal extremity of the ulna projected unnaturally at the back of the joint. In short, the hand was completely and permanently crippled.

The misfortunes of this poor man did not end here. Passing his residence lately, I called to ask how he did. I found him pale and weak, with his limb wrapped up and supported in a sling. He said that he had taken cold a month before; that he had been attacked with chills and shivering, and had lost his appetite. I found the hand and arm enormously swelled, the enlargement extending beyond the elbow. The fingers and back of the hand, which had been hard as a board, were now distended and out of shape. The integuments of the fore-arm and elbow were slightly reddened, with a little yielding on pressure; it was a state of solid oedema without pain. There was free discharge from an opening in the back of the fore-arm about the middle. There had been a large deep-seated suppuration in this situation, which had been punctured.

CASE III.—Contraction and stiffness of the fingers from inflammation of the palm.

A bargeman, past 60 years of age, of good constitution and temperate habits for that calling, had occasion, in navigating his barge, to make a powerful exertion with a long pole held in the left hand. He felt what he called a violent rick in the part, and was unable to continue at work. The hand swelled and became painful, and was treated, under the direction of a surgeon, with lotions and fomentation. It was seen

at the expiration of eight or ten days by another surgeon, who directed the application of leeches. The patient shewed me his hand twelve weeks after the accident. The wrist could be moved freely, and did not seem to have sustained any injury. The integument and fascia of the palm, and the flexor tendons, were thickened and agglutinated into a solid hard mass. The skin and tendons were changed in a similar way, but to less extent, above the annular ligament. All the fingers were contracted, and perfectly rigid in the half-bent position, the stiffness affecting principally the two last joints.

CASE IV.—Inflammation of the hand, with phlegmonous erysipelas of the fore-arm and arm, from slight injury of the thumb.

Mr. Radcliffe, of Brentford, with whom I saw this patient, was kind enough to furnish me with the following narrative of the case:—

A. B. æt. 45, a butcher, of very intemperate habits, received, Sept. 9th, 1844, a slight graze of the right thumb, near the palm of the hand, when salting a piece of meat, rather tainted. He poulticed the thumb, and took aperient medicine, as the part was painful, but not receiving relief by these means, and finding the pain extend to the inner condyle of the humerus and the axilla, he sent for me, late on the night of the 11th Sept., two days after the accident. In addition to the previous symptoms, there was inflammation of the absorbent vessels, marked by lines of vivid red colour, tender to the touch, along the fore and upper arm. The hand and wrist were not hot nor swollen; but there was considerable constitutional disorder. The pulse being strong and full, I decided on taking blood from the left arm, fearing the occurrence of phlebitis, if a vein had been opened in the affected limb. The patient had before experienced inflammation of the absorbents from slight abrasion of the cuticle. After twenty ounces of blood had been abstracted, calomel and henbane, and the saline aperient mixture with tartarised antimony, were administered, with low diet. The lotio plumbi was constantly applied from the shoulders to the hand.

12th.—Blood rather sily; alvine and urinary secretions scanty and unhealthy; he feels better. Continue the mixture, lotion, and diet.

13th.—Suspecting fluctuation near the injury, I made a deep puncture without detecting matter.

Linsced poultice to the wound: lotion and mixture as before; blue pill and henbane at night; milk diet.

14th.—Patient easier : continue the same medicines and diet as yesterday.

16th.—Perceiving suppuration had occurred in the course of the recent puncture, I enlarged the same by a probe-pointed bistoury and director to an extent closely bordering on the wrist.

16th.—He got up, and walked about his premises, and indulged himself, as I had reason to believe, in his usual habit of drinking raw spirits. The integuments of the back of the hand now assumed the character of phlegmonous erysipelas in a rapid and frightful form, and suspecting, from my experience of his usual restlessness and impatience, that I should not have the requisite control over him, I determined to take him to Mr. Lawrence on the following morning.

17th.—At this time the whole hand and fore-arm were enormously swelled, and the fingers motionless. The integuments on the dorsal aspect of the limb were of a deep red, with threatening of mortification at some points. To prevent the mischief, both in the integuments and the cellular texture, Mr. L. advised a free incision of the inflamed parts, apprising the patient also that he would eventually recover only an imperfect use of his hand; and he performed, in my presence, an efficient division of the phlegmonous skin and cellular tissue, from the middle finger to the wrist, where several veins bled profusely, the blood being nearly of the arterial colour. In spite of pressure, raising the hand, and the application of cold water, three pints of blood were quickly lost, when syncope supervened. This symptom was soon relieved by the recumbent posture and a couple of glasses of wine, so that in an hour after the operation the patient was able to return home, a distance of nine miles. He bore the journey well, and walked up stairs on his arrival, when he took wine and beef-tea.

Twelve leeches were then applied to the front of the wrist, which was inflamed, tense, and painful. A linseed poultice to the wound. *Pil. Sapon. c. Opio gr. v.* were administered at night.

18th.—The hand and wrist were better; but the fore and upper arm swollen, and red on the dorsal aspect.

Effervescent saline mixture. *Pil. Sapon. c. Opio, Ext. Colocynth. Co. et Camphoræ, aa. gr. iiii. horâ somni.* Arm dredged with flour.

19th.—He got out of bed, when hæmorrhage occurred from one of the veins divided on the 17th. About twenty ounces of blood were lost, and he was very faint when I arrived. I did not disturb the coagulum which had formed, merely removing the weight of the poultice, raising the hand, and giving a little wine and water.

20th.—Hæmorrhage recurred on the re-

moval of the poultice during my visit to-day, and I was thus enabled to trace its source, and apply a ligature to the bleeding vessel. It now became evident that a copious local depletion would be requisite to abate the erysipelatous mischief extending along the back of the arm to the shoulder, and accordingly, on the 21st, a dozen leeches were applied.

22d.—The same number repeated.

23d.—Eight leeches.

25th.—A free crucial incision at the elbow.

27th.—A long incision was made above, and another below the elbow, with the effect of liberating the sloughs favourably, excepting in the upper arm, where it was necessary to divide a sinus about three inches in length, on Oct 16, before healthy action was fully set up in the course of the original phlegmonous mischief. The sloughs from the dorsum of the hand were speedily detached after the hæmorrhage was arrested, and every thing proceeded to as favourable termination as could be expected. The arm is restored (Sept. 1845) to its natural motion; but the hand and fingers are so rigid that the patient can only cut or saw: he cannot chop meat, or perform any motion with that hand which requires a firm grasp.

This patient lost nearly seven pints of blood in the progress of the case. However, in July last (1845), he fell, while intoxicated, and fractured two ribs. Pleuritis ensued, in the course of which I abstracted from his arm twenty ounces of blood, which was bled and cupped.

Injuries of the hand, although slight, when neglected, as they frequently are by those engaged in laborious occupations, and depending for support on their daily exertions, often excite violent and general inflammation of the part, which, if not controlled by proper means, will cause change of structure, impairing or entirely destroying the motions of the member. The whole hand swells, becomes red and hot, with intense pain, sensation of burning heat, and throbbing, entirely destroying rest. Deep-seated suppuration takes place in the palm, when the matter, prevented from coming to the surface by the palmar fascia, and the other dense structures of this region, extends under the annular ligament, and is found under and among the flexor tendons at the wrist. Similar deep-seated suppuration occurs at the back of the hand. The pulse of the inflamed limb is full, strong, and firm, quite different from that of the opposite side. The radial and ulnar arteries beat violently in the entire length of the forearm, and the increased pulsation sometimes extends to the brachial trunk. All the superficial veins are full. The effusion of fibrine accompanying this violent vascular

excitement in all the structures of the hand accounts sufficiently for the serious permanent changes exemplified in the 2d, 3d, and 4th cases. In comparison with these, the event of the first case shews what can be accomplished by proper treatment in limiting the degree and extent of vascular disturbance. The original injury—a severe lacerated wound, with fractured bone, and exposure of one joint at least, was more serious in this than in either of the other instances. In Cases II. and III. no efficient treatment was adopted, and thus the inflammation was left to run its course. Mr. Radcliffe did all that could be done to check the progress of the mischief in Case IV. The character and progress of the affection were no doubt influenced by habits of great intemperance, which had damaged a constitution naturally robust. Two days were lost in the beginning; and the disorder was aggravated by imprudent exertion and drinking on the seventh day.

In many of these cases I have directed that blood should be taken from a vein of the inflamed limb: great relief is always experienced from thus directly emptying the surcharged vessels. In order to compare the state of the circulation in the two limbs, I had a vein opened on each side, in one instance, where the whole hand was inflamed. Sixteen ounces of blood flowed from the inflamed limb, while not more than three or four escaped on the other side. The former was strongly buffed and cupped, while there was only a slight sizzly film on the latter.

As it will depend on the management of these affections, which are not of unfrequent occurrence, whether the patient shall recover or permanently lose the use of his hand, they seem to me not less important than the diseases of internal organs, on which so much time and attention are bestowed. I have pointed them out to you, because they are not noticed in systematic works; and you will hardly find any description of them, or directions for their treatment, either in lectures or books.

WOUND OF THE CHEST.

CASE.—*Penetrating Wound of the Chest, with hæmorrhage and emphysema; recovery without any unfavourable symptom.*

Mary Sale, æt. 32, a healthy married woman, was sitting at dinner with her husband, who being drunk and quarrelsome, threw a knife at her across the table: it struck her with full force on the left side of the chest. Considerable hæmorrhage ensued from the wound, but there was no expectoration of blood. She was brought to the hospital about half an hour afterwards.

May 4, 1845.—There is a wound, an inch in length, between the first and second ribs,

on the left side of the chest, about half an inch from the sternum, with considerable surrounding emphysema, extending along the left side of the neck to the angle of the jaw. The left side of the chest is loudly resonant upon percussion, but the respiratory murmur is indistinct and distant. Her dress is much stained with blood: the pulse is feeble, the extremities cold, the respiration hurried: she is alarmed, low, and faint.

The instrument with which she was wounded, an old sharp-pointed dessert knife, is stained with blood for three inches from the point, the rest of the blade being bright. The wound was closed with adhesive plaster. A little warm wine and water was given, and she was placed in bed: the circulation soon returned, and she felt easier. Milk diet.

6th.—She is thirsty: bowels rather confined.

Sumat haustum Sodæ Tartratis, 6tis horis.

12th.—The emphysema has disappeared: the wound is healed: the patient feels quite well, and has left her bed.

Leave off the medicine. Broth diet.

15th.—She left the hospital to appear at a police-court, and did not think it necessary to return.

POISONING BY ACONITE.

MR. SAYLE has lately reported the following case to the Medical Times:—The patient, a man aged 39, was lying insensible, rolling his arms about, and foaming at the mouth. The pupils were widely dilated, the lower extremities apparently paralysed, the surface cold and clammy, great nausea, pulse scarcely perceptible. It appears that he had swallowed a solution of aconite about an hour previously. Some brandy was given, which appeared to rouse him. The stomach-pump was employed, but he died before anything further could be done for him. The man had taken a decoction of the fresh stalks and leaves of the *Aconitum Napellus* upon the advice of some ignorant person. The leaves and stalks had been cut up and boiled in half a pint of beer until it was reduced to a quarter of a pint. On inspection, the liver, spleen, and kidneys, were found distended with dark blood, and the veins generally congested. The stomach presented a slight blush near the cardiac extremity; the whole alimentary canal emptied of fecal matter, and distended with air; the valvule conniventes distinctly seen from without, owing to the congested state of the blood-vessels. The pelvic viscera were healthy.

[REMARKS.—The most remarkable feature in this case is, that death took place with great rapidity, *i. e.* within little more than an hour from the time at which the poison was swallowed.—ED. GAZ.]

LECTURES

ON CERTAIN

METALS & METALLIC PROPERTIES.

Delivered at the Royal Institution,

By PROF. FARADAY, D.C.L. F.R.S. &c.

V.—May 10th, 1845.

IRON—*Its antiquity—manufacture—properties of cast and wrought iron—test of its strength—effect of heat and percussion—properties of steel—tempering—magnetism—power of artificial magnets of soft iron.*

TO-DAY we must turn our thoughts, if you please, to the metal Iron—the king amongst metals, king in every way, by its pre-eminence in power, its valuable properties, and by its terrestrial omnipresence. It is everywhere, and for us in Great Britain it does all things. I must make my remarks very brief and terse, in order to bring before you in the short time we shall remain together a tithe of the facts belonging to iron, and the surprising interest attached to it. Let me beg of you, by subsequent reflection and study, to make up many points which will be necessarily omitted. I am under the necessity of comprising what I have to say into a very small space.

In speaking of the *origin* of iron, I may observe that it has been known for many ages as iron in a metallic state, and I am indebted to some friends for two specimens of iron of ancient date. This piece of iron was inserted in stone to bind two pieces together, and its age is 300 or 400 years A. C. The second specimen exhibits the earliest form of sculpture, and was brought from Thebes in Egypt, and is supposed to have a date 500 or 600 years A.C. But besides these we have iron far more ancient, which has been sent to us from above, I know not where, in the shape of *meteoric iron*. Here is a specimen, showing in what state and condition iron comes to us from sources probably exterior to our globe,—whether from the atmosphere or not it is impossible to say, but in this fine and beautiful condition, always having the general qualities of metallic iron, marked and identified, however, by the presence of other substances which are not found in iron as it is found in the bowels of the earth. I must, however, content myself with referring you to the specimens before me. There was a very early application of iron to various uses. Here are two pieces of iron brought from the country of the Esquimaux, set in whalebone so as to make a rude kind of knife. It is whalebone with a knife edge. Here are specimens of ore which supply a large quantity of the metal used in England; it is

obtained by an interesting chemical process, which I must briefly state.

The metal is put into a large furnace, with a mixture of limestone and coal; an immense fire is kept up by the artificial introduction of air: a powerful blast being thus thrown in, the ore is fluxed, the iron is reduced, and at a certain time it is brought out, or tapped from the bottom of the furnace, in the state you see it here. The crude or pig iron is run into rough moulds, with small channels and larger ones; hence the metal is called “the sow and her pigs,” according to the size. Here is a piece broken off, to show you the produce of this ore in a rough state. Without going further, I may say that this pig iron is subjected to a further process in a reverberatory furnace, which burns away the carbon taken up by the iron when first cast, and by the removal of the carbon, magnesia, silice, and other matters, it is brought into the purer state shown by this specimen. I am here merely giving you the general process by which these two conditions of the metal are formed. Here are specimens illustrating the different stages which the ore of iron has to go through; and you will observe the variety of fluxes which are produced. It is remarkable that on even pig metal so little is left of the fluxes. By these processes, then, the manufacturer supplies us with metallic iron.

But if I were to place before you, or rather, I ought to say, before a person who had not seen iron previously, the substances we can recognise as varieties of that metal, he would almost laugh at one for saying that such very different bodies—brittle like this, binding and flexible like that, and as hard as those specimens—are the same metal in slightly different states. There is, indeed, greater difference in iron itself than between iron and the most diverse bodies in nature. Such strange and wonderful contradictions, or rather associations, occur in the history of this single metal. Viewed every way—externally, internally, in its chemical affinities, or by itself, there is no substance which is so fitted to attract our attention as iron.

Here is the *pig iron*, which runs from the furnace into these moulds, and takes up a solid condition when it is allowed to cool. When issuing from the furnace, it was very liquid; it becomes solid, and then we have a substance which breaks easily. We use this particular state of iron, as you know, most extensively for the purposes of construction—the construction of buildings, and more especially machinery. Observe what a wonderful property belongs to it! that we are able, by reducing it to a fluid condition, to make it assume various states, according to our will. Here is a bar of iron cast into

this shape, or *wrought*, having its original brittleness. I need hardly make the experiment (of breaking it), but you see at once what the character of the iron is, how strong and excellent a bar it is, how easily it obtains form by heat, and what power it affords. The artificer cannot give the shape to stone or timber that he can to iron. There is no other body that will answer his purpose, or be made applicable to the same purposes as iron. If he wants finer work, you see how its fluidity allows it to take the shape of ornaments. The most delicate ornaments can be made of iron that associate more of interest with them than gold, silver, or precious stones, while, at the same time, the metal illustrates its other wondrous properties. Here is a chain of cast iron; it shows how man can turn the circumstances connected with this metal to account; he can mould the chain, the links being continued together by pouring fluid into a hole. It is wonderful to observe the process carried on in this case with iron.

To hasten on with the subject, and yet not to make it unintelligible, this substance—iron, is usedⁿ in a multitude of forms to obtain strength. I intend to illustrate only one application of strength as the type of the rest. It is best for collars, for rafters and beams, and as such is largely used for supporting buildings. A man who is acquainted with the properties of iron, instead of building with stone, iron and mortar, runs up a skeleton of uprights and cross-bars, and then fills in with bricks. Thus he uses cast-iron first, and that which was subordinate is now made the principal means of support.

I will now show the mode in which the strength of the metal is tested; it is by an experiment of the following kind. It is necessary to test it, inasmuch as iron varies greatly in quality. Here are two bearing points; there is a rod of iron suspended, and we have the means of hanging on to it a scale. On attaching the scale, it makes the bar bend, and shows the resistance of the iron. On placing weights in the scale, it will bend more and more. It is especially necessary that the weights should be put in carefully, without a jar. That bar will break with about eight or nine stone weight. We never can tell exactly where the flaw may be, and whether it will break sooner or later. There is now one cwt. attached to it, and you observe the great flexure of the bar. This brings out a most important condition; if the weights were taken off, the bar would return nearly to its first form. Another 14lbs. weight has just been added, and the bar has now broken. It has broken therefore with nine stone; but the scale itself weighs two stone, so that in fact it is eleven stone (154 pounds weight) that has broken the bar. I

will take a parallel bar of the same weight, and put it edgeways, the length and points of bearing being the same. I shall not carry this to the breaking point, because I should want twice the number of weights. You see that it now bears eleven stone without the signs of flexure that you noticed in the other bar. According to the disposition of the iron, as well as the quality, therefore, so is the strength of the bar. If that same bar were placed the other way, and the same weight were attached to it as in the first experiment, it would break immediately.

This must suffice to point out to you the beautiful manner in which we take advantage of the power of such a material as iron. In the other room there are a number of girders formed on this principle, and put up edgeways. When you see a form like that on the floor, you will perceive the reason of it. There is great beauty in tracing these things out, for they all have a great effect in making the strongest bar with the slightest weight of iron.

I must recommend to your notice a specimen before you, as illustrating the different qualities of iron. Here is a Turkish shot thrown during the bombardment of Algiers, and every shot fell to pieces like glass when striking anything moderately hard on the ship. Here is a shot sent by one of our vessels in the Chinese war; it took such a range, that it went into the mouth of a Chinese gun, a piece having been clipped off the mouth, and was somewhat moulded to its form. This proves the toughness and good quality of iron, inasmuch as it was found sticking in the Chinese gun when the English took possession of it.

I must now proceed to speak of *wrought-iron*, which you would say was another metal, save that we obtain it from this, *i. e.* cast-iron. Iron seems to owe that degree of brittleness which you have just seen illustrated, and its fusibility, to the presence of carbon, a little carbon which accidentally creeps into the iron; and if I were to take this cast-iron, put it in a fire in contact with oxygen, and heat it, without melting it, the carbon would slowly creep out, would leave the central portion, and I shall find it no longer fusible at the same degree, or brittle, but with difficulty fusible and tough; what is called wrought-iron. The metal in this state may be bent to close angles without breaking it, and if I succeeded in breaking it, it would do so with a fibrous texture, utterly unlike cast-iron. Here is a piece of pure wrought-iron, out of which may be made any article that requires flexibility. It will cut and break easily, being tough instead of brittle. Here is wrought-iron which is soft; I can easily bend it, and it has lost a portion of the power of resistance as to flexure. This appears to be the pure state of iron; it

is fusible, though hardly fusible, requiring a very great heat for its fusion. We now and then obtain beautiful crystals of iron. Here is a mass crystallized most beautifully, the principal crystals being nearly pure iron.

Wrought-iron is flexible, and may be drawn into small threads; the cords or cables that are here are made of iron wire, and there are other specimens showing its great flexibility, and that this substance can be formed into massive chains for cables, or light ornaments that are like silken strings. Iron wire can be thus drawn out to a fine degree of tenuity. When brought to this state, which seems to consist only in the loss of a little carbon, there is this wonderful change of properties. If you give iron in this tough condition a little carbon, it will become brittle and break, but it will not take a chemical proportion or equivalent of carbon; only a little under any circumstances. Thus it becomes changed into common, wrought, or pig iron accordingly. By beating the rough iron in bars, in place of breaking when struck, such is its character that you may hammer it close, or you may even tie it in a knot.

There is a specimen before you in which this has been done, when the iron was cold. Like string, the metal is no longer brittle, but very tough and resisting, and this toughness gives to it a kind of strength most useful in its applications to the arts. Look at the screw and the nail, and think how the screw draws the wood, and then by the grasp of the wood on the nail the fibres lay hold of it. What holds a ship's plank on a beam, but this cohesion of iron? Here, then, is an exhibition of its strength.

I will now take one or two illustrations connected with wrought-iron. This specimen might serve for a beam, but not so well as cast-iron, it would swag; the poorer the iron in carbon the sooner it will swag. Take away the carbon, you make this soft, but still it has a certain degree of strength. I dare say the weight of my body would not bend this bar. I have been attempting to get up two or three careful illustrations to-day, with which some of you may be well acquainted, but which are the best for the purpose, because they go to the value of the application of the metal. With iron wire it is possible to give an idea of the weight it will sustain, by making a suspension bridge. Here is a piece of wire, flexible, limp, and soft, easily bent; indeed I have bent these ends myself; and here is a bar of wood. I have had this piece of wood made thin so that you may be sure there is but little strength in it, and a smaller piece would easily break. I will join these together, and then show what is its strength. You will quickly see what I am about, and for what purpose the experiment will serve. I am doing nothing more than making a bowstring with the iron wire.

What prevents that bow from becoming straight? The string; and the string is iron wire. If I were to stand on the bow at that flexure, so intense would be the compressing force that I should stretch the wire. If I were to take two or three pieces of wood, and prevent them coming together, this little arrangement has strength enough with the tie of iron to bear any weight perfectly. I have made a bridge of it, and I can now stand upon it without breaking it down. The wood is flexible, and if I removed the support I could break it through. It owes its power, therefore, entirely to the employment of this iron wire. (The plank of wood was in this experiment bent in the form of a bow by the wire.)

Here is another case, which will serve to bring out another view of this same point. Here I have a loose cord, and by untying it you will be astonished, at least it astonishes me, to see what strength I gain. If I block that up at each end, though I have taken no pains about a careful adjustment of the parts, for we are so near the floor as not to fear a fall, the piece of iron will keep it straight; the timber could not be broken through. Take away the wire, and down would go the wood. Here is a piece of the same board, which, without this iron tie, my own weight will, as you observe, break through at once. There is now lying before you on the floor, a piece of wire rope used in the erection of Hungerford Bridge, and which is the main element of strength in these suspension bridges. It is part of the rope that was drawn across over an arch of 700 feet, and in fact the cradle from which, and in which, the bars were put together to make the present suspension bridge.

Before I leave pure iron, there are one or two strange properties to which I will call your attention. This *toughness* which belongs to it, and the wonderful way in which the artisan or the engineer, by making use of iron against itself is able to overcome it, is most astonishing. There are around you specimens of pure iron in a tough state; they will take a cold bar of iron of considerable size, and cut it through as quickly as I can cut through a card. Look at the thickness of the iron, look at its shortness, and consider the enormous extent of power which must be exerted before they can cut it. Compare section with section, and see what is to be done to make it give way. It is wonderful to go to an engineer's, and see the articles upon which they work. At Maudesley's a machine may be seen going up and down at its work, cutting through hard pieces of iron like those on the table. The shears pass through them as easily as your finger would through wax. They put into a lathe a rough and well-worked bar of iron, such as the shaft of a steam-engine; they

turn it into squares, or into the shape of these specimens. Nothing can resist the power of the engine, and they will take thin shavings off a bar of cold iron with the same facility that you can scrape any soft substance. The sections (long thin shavings of iron) before me, were made at one cut when the iron was cold.

You see punches removing parts of the iron, as if a carpenter had taken them off with a chisel. Here is a specimen of what they call slag. Not even iron in one state can resist the action of iron itself in another. Some forms of iron can only be wrought by iron tools to any effectual or useful purpose.

There are some strange things about the cohesion of iron. I have shown the effect of heat in modifying the attraction of the particles of metals. Here is a piece of iron of a certain strength; I can waft it to and fro, and it does not bend; yet if I make it hot, it will most likely bend close to where it is heated. Now that it is red hot, it will sink down by its own gravity; if I reverse the position, it will bend down the other way, and I might tie it into a knot by its own weight. At a dull red heat, the particles of iron which when cold had so much attraction become soft, and the metal easily bends and gives way. Think of the hammer, think of the smith, who, taking advantage of the power of heat, puts a bar of iron into the fire, and works it into any form he pleases. There may be finer work obtained from wrought iron by its softness than can be obtained from cast iron by its fluidity when melted. In the next room may be seen the links of a chain which goes round a watch, perhaps 150 little parts, all, in virtue of this property, brought out by softening, not fusing. If I take cold iron, hammer it in one part, although I may make it harder, so that it will resist bending in this direction more than before, yet it is rendered more brittle. If I make in the cold iron before me a certain number of bends, you find that it breaks—one, two, three, it is gone: but if I make it of a dull red heat, and then let it cool *slowly*, I shall have taken away that degree of strength which belonged to its hardness, I shall have given it softness, and instead of three bends destroying the cohesion of the iron, you observe that it takes ten short sharp bends before it gives way in the least. Such are the singular conditions under which metallic particles, especially those of iron, are placed by the act of hammering or compressing, as in wire-drawing, and in various other ways. Here is a specimen of wrought iron. On observing the texture, it will be found to be fibrous, and here is a part of the same bar within six inches of the same place which has been hammered in one direction a certain number of times. Look at the fracture: it is brittle, crystalline,

breaking short off. All the fibrous texture is gone, the particles are no longer in the same arrangement that they were in before; they have become closer and harder, and if I try to stretch it, it will not change its form by any compression on the surface. It has lost its flexibility, and will not bend. Here is a piece of that bar which has been thus treated, and then put into a furnace at a full red heat, and it has come out more fibrous than it was before; so that you have in this piece of iron three parts showing the first good quality, the destruction of it by hammering, and the subsequent restoration of its fibrous character by heat. What does this lead to? In a practical view, that, according to the opinion of Mr. Nasmyth—to whom I owe the specimens in the case—it is the iron best fitted for strength, and where the metal is required to be hard and tough. I speak of locomotive engines, where it must not break by a sudden jar, or by the continued percussion which takes place from the travelling of an engine over thousands of miles on a hard road, and which renders fracture of the axle more likely to occur than under other circumstances. On this account the axles, after they have gone over 30,000 or 40,000 miles, are taken off and annealed—that is, they are put into the fire to bring back that toughness which they had lost by undergoing concussion, and hence the tendency to break is removed. The law that governs the arrangement of the particles of the metal always holds good. The difference of temperature will make so much difference in the attraction or cohesion of the particles that you would not think it was the same material. Here is a bar of iron of excellent quality; at a temperature of 50° , it will break off short; at 70° there is a perfectly fibrous state. As yet, however, we do not know all the circumstances which govern the singular properties of the particles of iron.

I must now pass to the means by which these things are done, by which these results are produced. And what shall I say of *Steel*? Steel is iron, with a little carbon. With a small portion of carbon the metal forms the body which I now show you (cast-iron), but with less carbon it forms steel, and there is a new set of properties coming out, without which we never could have advanced to our present state of civilization. These properties, if taken away from us by Him who orders all thing, would be productive of most serious results. And what are these properties? A singular power of undergoing the process of tempering. I have here a parcel of thin bars, some of iron and some of steel. Mr. Murray will put them in the fire, and make them go through a certain process, which you

will presently understand. He will make them equally hot, and when he has so done, then, with cold water simply, he will harden the steel, or temper it. In the manufacture of steel, such iron as this is taken and placed in a furnace surrounded by charcoal, or, in modern times, they use the flame of gas. It is thus made hot; the carbon slowly creeps into the iron, and we find that, without any change by melting or otherwise in the form of the bar, that it comes out *steel*. Here is a piece in which this process has taken place; carbon has crept in and altered the properties of the iron. The compound will fuse like cast iron; it will pour into moulds, and it then makes cast steel. Besides being fusible, if we bring it to a moderate heat, and cool it slowly, it acquires the toughness of iron. It has the combination of two properties—of the malleability of wrought iron, on the one hand, and the fusibility of cast iron on the other. The hardness depends upon this: if I put into the fire a bar of steel, allow it to cool slowly, it comes out what we call soft—that is, a steel knife will cut it, and if we hammer it at the edge, it will bend round; but if we suddenly cool it when hot, by plunging it into cold water, it comes out hard and brittle. It requires to be raised to a certain temperature before cooling it, or it does not harden; so that temperature is a most important element in the tempering of steel. The thin bars of iron and steel which Mr. Murray placed in the fire are now plunged in water, and we shall soon be able to see which are iron and which are steel. Here is one that is brittle enough;—it is steel. These three are steel. Here is a bit of iron that has been softened by heat, not hardened; it bends without breaking. Here, again, is a bit of iron, and here also.

The tempering of a sword furnishes a good illustration of what steel will do when thus treated. The hardening of steel is to the engineer more important than to the soldier. The engineer has to attend to a remarkable condition, which is at the same time very beautiful. When steel is made brittle, the cutler who wants to make a razor or knife heats it more or less, and slowly cools it;—by so doing he takes off the hardness and the brittleness. He, therefore, of course makes the edge soft, whereby, without doing harm, he can give it toughness. If a dinner knife, or a pair of scissors, were as hard as the steel before you, the edge would crumble away like glass, being so brittle. By heating this steel to a certain degree of temperature, it has lost a little of its hardness, and gained in toughness, which is the condition actually required. But the engineer cannot do this; the perfection of his machines depends on the use of tools very different from these. The great secret is,

never to make the steel hotter than just needful to make it hard for the purpose intended; the least that it goes beyond this point destroys the texture of the steel, for it cannot withstand the necessary pressure without working down the edge. All these things are done by the judgment of men experienced in them. There is a curious turning point, and if the steel becomes hotter than it ought to do, it comes out too hard. Here is a specimen of steel which has been hardened to a high temper. The engineer gives that degree of temper which enables the tool to resist, while at the same time it will cut.

There are suspended behind me several magnificent swords, some of them possessing historical interest: these two are made of Siberian steel; you will find a damask character over both swords. Here is a specimen, the embellishments of which are worth 100 guineas. The swords show how beautifully the steel is brought first to this shape, then to that, then hardened, then tempered, then ground, and finally tried.

I must now refer to the curious property of the particles of iron to receive *magnetism*; and here I take you—not to a more useful, except in the case of the mariner's compass—but to a still more wonderful condition of this metal, than I have yet done. If I take steel in a certain condition, I shall find that it has power to attract a piece of iron, and draw it to itself;—this we call the attraction of magnetism. This property is found to exist in iron ores, and it may be shown in many of the compounds of iron. Let me show you how strongly this power may be manifested, and how we can give it to the iron artificially. Here is a piece of soft iron. Here is another piece of iron, and the latter will not attract the former; consequently neither of these specimens have the power which is shown to exist in the iron ore called the loadstone. Here is a piece of soft iron that has not the power; here is steel, and it has the power. But observe the way in which we can make the soft iron attract: I will bring this to a condition in which it shall effect it. See how it is now drawing this soft piece of iron; it has received a power by contact with a magnetised bar, that it had not at first. What it could not do alone, it can be made to do by bringing a magnet in contact with it.

I will lead you to the wonderful extent in which iron is able to acquire this power, which we call magnetism, and which is so useful, not merely in navigation, but in electrical phenomena. I have here soft copper wire in a coil of great length. I am throwing into it electrical fluid. I have here a piece of iron, and this is now quite indifferent as a magnet. This piece of iron is put before a delicate magnet, and at present

it has no magnetic power. Now we have an electrical current traversing the coil of copper wire, and we shall be able to induce the state of magnetism in the soft iron bar by this means. We have also other means of making magnets besides that which I am going to show you. Here is a piece of iron (weighing several pounds), and now, on approaching the bars of soft iron plunged into the copper coil, you observe that it is out of my hands immediately: I can just pull it off by the utmost exertion of strength, but that is all. I apply a second piece of iron, and I can hereby break it off at the joint. The moment the electric current is taken away, the mass of iron now so strongly attracted, will fall. So wonderful is this power, and so strange the influence, that I hardly know where to stop as a sufficient exhibition of it. On again applying the current, and attaching these two round bars of iron, and placing beneath them a bag of iron screws and nails, they instantly rise to it, and all are held firmly together. (About twenty pounds weight of screws and nails were thus attracted and held in a long chain depending from the temporary magnet.) Each particle of metal is receiving magnetism by induction, and every portion has the same power. If I were to take other articles of iron, each extremity of the magnet would illustrate this power in the same wonderful way. (Two sets of fire-irons were immediately attracted, and firmly held, by the artificial magnet.) I will now destroy this power by simply taking off the current of elasticity, and the whole will fall away.

I will give you another exhibition of this power, showing the enormous weight it sustains. I have very little doubt, imperfect as these experiments are, that this temporary and artificial magnet will be able to hold this fifty-six pounds weight. The weight is now attached, and I can hardly pull it off with my whole strength. It will evidently hold, not merely that weight, but a great deal more. I can only recommend these facts to your notice, without saying more about them, but it is astonishing to see such results obtained by such simple means.

RETROVERSION OF THE UTERUS.

LET a woman two and a half months gone, get into a stage, or rail-car, having neglected to empty the bladder beforehand, if she sets off on her ride with eight or twelve ounces in the organ, and is prevented for some hours from relieving herself, she will hardly reach her journey's end without having retroversion; and when she attempts to relieve the bladder, is found to labour under a total suppression (retention?) of urine, or, at least, a most painful dysuria. I have seen such cases. A woman, who has the habit

of permitting large accumulations to take place in the bladder, can hardly fail, in the long run, to relax and overstretch her round ligaments so much as to render them at last useless to her. I am acquainted with more than one lady, whose round ligaments are so loose and useless, that the womb falls over into the hollow of the sacrum. I do not think that the weight of the superincumbent viscera has, in general, much, if anything, to do with producing retroversion. I look upon it rather as a case of relaxed round ligaments, and suppose that if there were any surgical means of shortening them, the womb, even one most prone to retroversion, would thereby be deprived of the liability to become retroverted; unfortunately we possess no such means. There can be little reason to doubt the *contractility* of the round ligaments; certainly they seem, in some persons, to be at one time so relaxed as to allow the uterus to fall backwards with the greatest facility, and then they retain it for months in its natural situation; after which, they again permit the retroversion to take place again and again; to be succeeded by a period in which they are strong enough to prevent it, perhaps during the remainder of the woman's life-time.—*Dr. Meigs.*

[We apprehend this beneficial change is far more probably due to alterations in the state of parts immediately surrounding the uterus than to contraction of the round ligaments.—*ED. GAZ.*]

MEDICAL FEES IN THE SIXTEENTH CENTURY.

THE Princess, afterwards Queen Mary, upon becoming sponsor to her brother Edward, gave to the Queen's nurse and midwife, £30. When attending, as chief mourner, at dirges and masses, while Queen Jane Seymour lay in state, the Princess caught cold; and the King sent his surgeon Nicholas Simpson to draw one of her teeth; for which service she paid him six angels. In 1538, the Princess, while at Windsor, stood godmother to the children of her apothecary and of her physician, according to an entry in her accounts. "Item—given to John, potticarry, at the christening of his child, my lady's grace being godmother, 40s. Item—given, at the christening of Dr. Michael's child, a salt, silver gilt, my lady's grace being godmother to the same,—price (of the salt) £2. 6s. 8d.

In the summer of 1540, Mary was ill at Zittenhanger; about this time the records of her privy purse expenses suddenly ceased; almost the last items recorded are her payments to the King's surgeon of a sovereign for coming from London to bleed her, and fifteen shillings to her old apothecary John, for stuff.—*Lives of the Queens of England.*

Original Communications.

CASES ILLUSTRATIVE OF, AND REMARKS
UPON, THE
PATHOLOGY OF OXALATE OF LIME
IN THE URINE.

By J. H. STALLARD, Esq.

Surgeon to the Leicester General Dispensary, &c.

MR. S. æt. 53, married, short and rather stout, had for some time previous to August, 1844, complained of depression of spirits and flatulence, the latter occurring more especially at night, and after tea and breakfast. He also was observed to get much thinner, though his appetite appeared as good as usual. On the 10th of August he experienced rigors, considerable prostration, with great irritation of the urinary organs, induced by a prolonged retention of urine. There was a sense of weight about the neck of the bladder, and, after reaction came on, the pulse rose, and the bladder would not retain even the slightest quantity of urine. He was ordered to bed, and to have

Calomel, gr. v.; Pulv. Opil, gr. i. in forma pilulæ.

Before continuing this case it will be well to notice that Mr. S. is a most active man, constantly occupied in the open air. In his habits he is moderate, though very fond of sugar, and he usually took two or three pipes of tobacco, with a little gin and water, every evening after supper.

August 11th.—He is somewhat better; the pain is a little relieved, but the desire to micturate is very constant. The urine was thick, depositing much lithate of ammonia. The bowels not open.

To take Ol. Ricini, ʒj. To be kept quiet in bed, and to abstain from stimulating diet.

August 13.—Rest has been strictly kept, but the pain and desire to evacuate the bladder continue as before. The urine is occasionally much loaded with lithates, and when passed it occasions great pain. A specimen of urine was carelessly weighed; the specific gravity was noticed to be unusually high, but the great concentration seemed fully to account for this. He was ordered a warm bath, but very little relief was obtained.

August 17th.—He complains of the sensation of a ball being in the rectum, a pain commencing at the neck of the bladder extending along the urethra to the glans penis; the pain is aggravated by micturition. He also complains of having had a lascivious dream during the night, and there are several little worm-like flocculi observed floating in the urine.

Under these circumstances, with the advice of a friend, he was placed in bed, and treated for an inflammatory disorder of the neck of the bladder, vesiculæ seminales, &c.: rest not having been strictly kept was thought to have been the cause of the continuance of the symptoms: to obviate this he was ordered to bed, to have ten leeches applied to the peritoneum, and to take the following:

R Pulv. Opil, gr. ʒi.; Ipecac. gr. ʒi.;
Pil. Hydrarg. gr. i. Conservi, q. s.
Ft. Pil. st. i. ter die superbibens coch.
mag. iii. sequentis Misturæ.

R Magnes. Sulphat. ʒj.; Liq. Ammon.
Acetat. ʒiij.; Mist. Camph. ʒv. M. ft.
misturæ.

He was confined to a farinaceous diet; the tobacco was still allowed in the evening.

August 20th.—The inflammatory symptoms are very slightly relieved. The frequency of making water is still great, and it is aggravated by any excitement. The urine was rather below the usual quantity, it frequently deposited lithates, was very acid, and caused pain when voided.

To take occasional opiates.

Aug. 21st.—Having to transact some important business caused him to void urine every five or ten minutes with great pain.

To have an opiate immediately.

August 22d.—Passed a good night; he notices that when the urine is retained until the quantity is about two ounces it is passed with ease, and is then invariably clear. This plan of treatment was continued during another week. When confined, his spirits varied very much; sometimes they were very low indeed, at other times he felt quite well; the appetite continued good, although the usual exercise was so entirely omitted, but there was frequently great sense of distension after meals, which was accompanied by the eructation of much

wind. The treatment was continued as before, the bowels being regulated by aperients, and the pain being moderated by opiates. He also occasionally took a little Liq. Potassæ, which appeared to lessen the sense of distension.

August 29th.—I to-day examined a specimen of urine which had been for ten days under the receiver of an air-pump, with sulphuric acid, and was surprised to observe a copious crystallization of grape sugar, with a great abundance of the ordinary urinary matters.

I now examined the urine carefully, though not microscopically: the tables

annexed will give some information respecting it. The whole plan of treatment was altered. Meat diet, with a little good bitter ale, a little cauliflower, &c. was substituted for the farinaceous food hitherto taken, and the pipe of tobacco in the evening was strictly prohibited: he was allowed to get up, and to pursue with as little fatigue as possible his usual avocations, as the best means of employing his mind. I may be allowed to apologise for the imperfection of the tables; I publish them as they were compiled from day to day: they point out one or two interesting circumstances to which I shall presently allude.

DATE.	Pain.	Specific Gravity	Temp.	Acid.	Deposit	Quantity	DIET AND OBSERVATIONS.
Aug. 29. Night . .		1035	Far. 62°	Very	0	oz. dr. 8 0	Urine passed at twice; breakfast of coffee [and toast, with butter.
9 A.M. . .				Very	+	0 6	
10 . . .				+	0	2 0	At 11 A.M. took Liq. Potass. ℥xxx.
11 . . .				+	0	5 0	Urine passed (after 11) without pain.
12 . . .				+	0	2 4	Dinner at 2 P.M.: mutton chop, cauliflower, bitter beer, and bread.
1½ P.M. . .				+	0	1 0	
2½ . . .				+	+	0 4	Much pain.
4 . . .				+	0	2 4	
5½ . . .						0 4	Tea, one cupful; toast, with butter.
7½ . . .						2 0	There is much mucus.
8½ . . .				+	+	0 4	Supper: beef, a small slice, with toast.
						25 2	A little urine was lost with the stool.
Aug. 30. Night . .		1034	62	+	0	9 4	Passed at three times.
Day . .						15 4	Passed at seven times.
						25 0	Diet as before. No special observations [made to-day.
Aug. 31. Night . .		1033	60	+	+	7 0	Passed at six times, with much pain.
Day . .		1034				13 6	Passed at six times.
						20 6	
Sept. 1. Night . .		1032	60	+	0	9 0	No pain, and passed at twice.
Day . .		1036	64			13 0	
						22 0	
Sept. 2. Night . .		1034	63	+	+	7 6	The deposit was copious.
Day . .		1032	63	+	0	12 4	Bowels purged.
						20 2	

DATE.	Pain.	Specific Gravity	Temp.	Acid.	De-posit	Quantity	DIET AND OBSERVATIONS.
Sept. 3.			<i>Far.</i>			<i>oz. dr.</i>	
Night . .		1030	65°	+	+	7 4	Feels better ; urine passed at twice.
9½ A.M. .		1030	67	+	0	2 0	
Rest of day						9 4	
						19 0	Some loss during carriage exercise.
Sept. 4.							
Night . .		1030	65	+	+	11 4	Passed when out.
Day . .		1030	65	+	0	14 0	
						1 4	
						27 0	
Sept. 5.							
Night . .		1029	65	+	0	10 4	Easy all night. All vegetables were omitted at dinner [to-day.
Day . .						14 0	
						24 4	
Sept. 6.							
Night . .		1016	64	+	0	14 0	With pain ; took some Uva Ursi.
Day . .		1028 to 1034	62	+		15 0	
Sept. 7.							
Night . .		1028	63	+	0	15 0	Passed at four times.
Day . .						16 2	
							Passed at eleven times. The smallest quantity immediately before dinner, with great pain ; small quantities at night, also with pain.
Sept. 8.							
Night . .		1030	65	+	0	15 0	At four times.
Day . .						17 2	
							At ten times. 9 and 10 A.M. with [pain and great deposit.
Sept. 9.							
Night . .		1030	65	+	0	13 0	No pain ; at four times.
Day . .						22 6	
							At eleven times ; at 11½, after exercise ; [deposit and pain.
Sept. 10.							
Night . .		1027	56	+	0	16 0	Dinner.
10½ A.M. .		1031	60	+	0	2 4	
11½ . .		1031	60	+	0	2 0	
12¼ . .		1026	60	+	0	2 0	
1½ . .						2 0	
3 P.M. .		1025	60	+	0	2 0	
4¼ . .		1025	60	+	0	1 6	
5 . .	+	1008	62	+	0	4 0	Yielded traces of sugar by Trommer's [test.
6 . .	0	1016	60	+	0	2 0	
7 . .		1020	62	+	0	1 0	
7½ . .	+	1022	60	+	+	1 4	
10 . .	++	1025	60	+	0	1 4	Passed at three times.
Average . .		1026				38 2	Solid matters—1180 gr.

(continued)

DATE.	Pain.	Specific Gravity	Temp.	Acid.	De-posit	Quantity	DIET AND OBSERVATIONS.
Sept. 11.			<i>Far.</i>			<i>oz. dr.</i>	
Night . .		1028	55°	+	0	11 0	
9½ A.M. . .		1025	65	+	0	2 0	
10 . . .		1031	65	+	0	2 4	
10½ . .						1 4	With an evacuation.
12½ . .						1 0	Cold beef, bread, and bitter beer, at 1½.
1 } . .		1024	67	+	0	1 0	
3½ . .						0 0	
3½ . .		1016	66	+	0	0 0	
4½ . .		1018	65	+	0	2 4	
5½ . .		1024	65			2 0	
6½ . .		1025	65			2 0	Mutton chop and beer, instead of tea ; no supper. Tea appeared to produce flatulence.
7½ . .		1027	58			2 0	
Average . .		1025				35 6	Solid matters—1068 gr.
Sept. 12.							
Night . .	0	1025	60	+	0	20 0	Bread and milk for breakfast.
8½ A.M. . .	+	1030	60			1 0	
9 . . .	0	1030	60			1 0	With a motion; 10 A.M. Liq. Potass.
10½ . .	0	1034	65			4 0	[<i>nlxxx</i> .
11 . . .	+	1030	65	+	+	1 0	
12 . . .	+	1028	64	+	+	1 0	Dinner at 2¼ P.M.: beef steak, cauli-
12½ . .	+	1028	64	+	+	1 0	[flower, and beer.
1¼ P.M. . .	+	1025	65			1 0	
3½ . .	0	1027	65	+	0	0 0	3 P.M. Liq. Potass. <i>nlxxx</i> .
4½ . .	0	1032	65			1 4	With evacuation.
6¼ . .	0	1032	65			2 0	One cup of tea, and one biscuit.—With [evacuation.
6½ . .	0	1030	65			1 0	7 P.M. Liq. Potass.
8¼ . .	0	1028	65			2 0	Headache all day; much depression.
8½ . .	+	1030	65			1 4	
Average . .		1029				41 0	Solid matter—1422 gr.
Sept. 13.							
Night . .	0	1030	60		0	18 0	Eggs, tea, and biscuit.—Appearance to-
10 A.M. . .	0	1030	60		0	2 0	day improved; no anxiety; bowels
11 . . .	0	1036	65		0	3 0	freely moved; no headache.
11½ . .	+	1035	65		0	1 0	10¼ A.M. Liq. Potass. <i>nlxxx</i> .
12 . . .	+	1035	65		0	1 4	
12½ . .	+	1035	65		0	1 0	
1½ P.M. . .	+	1033	65		0	1 0	Roast fowl, French beans, beer, and
2¼ . .	+	1028	60		0	1 0	[bread.
3½ . .	+	1028	60		0	2 0	3 P.M. Liq. Potass.
4 . . .	+	1026	60		0	1 0	
5 . . .	+	1028	65		0	2 0	
6 . . .	+	1031	60		0	1 0	Tea and biscuit.
6¼ . .	+	1029	65		0	1 4	7 P.M. Liq. Potass.
7½ . .	+	1026	65		0	1 4	
8 . . .	+	1025	65		0	1 0	Biscuit, cold fowl, and beer.
8¼ . .	+	1025	65		0	2 0	9½ P.M. Liq. Potass.
Average . .		1030				41 0	

DATE.	Pain.	Specific Gravity	Temp.	Acid.	De-posit	Quantity	DIET AND OBSERVATIONS.
Sept. 14.			Far.			oz. dr.	
Night . .	+	1032	60°	+	0	26 0	Eggs, toast, biscuit, butter, and bitter
9½ A.M. .	+	1032	62		0	2 0	[beer.
10½ . .	+	1036	62		0	2 4	Motion very copious, liquid, and balmy.
11¼ . .	0	1039	62		0	3 0	
12¼ . .	0	1038	60	+	+	1 0	
2 P.M. .	+	1029	63		0	1 0	2½ P.M. Roast beef, cauliflower, and
3½ . .	0	1035	60		0	1 0	[bread.
4½ . .	0	1028	60		0	2 0	4 P.M. Beer.
6 . .	0	1030	65		0	2 0	6½ P.M. Tea and toast.
7 . .							Copious liquid evacuation; great de-
8 . .	+	1035	60			1 0	posit, on standing, of lithate of
9 . .	+					0 4	ammonia.
Average . .		1033				42 0	Solid matter—1656 gr.
Sept. 15.							
Night . .	0	1030	60	+	0	15 0	7 A.M. Evacuation; feels well, and has
9½ A.M. .	0	1030	60		0	3 0	passed a good night. 7½ A.M.
11½ . .	0	1030	62		0	3 0	Breakfast: coffee, eggs, and toast.
12½ . .	0	1030	65		0	2 0	
1¼ P.M. .	+	1030	65	+	0	1 0	1½ P.M. Dinner: mutton, cauliflower,
4 . .	0	1028	65		0	4 4	[and bread.
5 . .	0	1030	65		0	1 4	2¾ P.M. Half-a-pint of beer.
6½ . .	0	1030	65		0	2 4	5½ P.M. Coffee and toast.
7½ . .	0	1027	65		0	1 4	7 P.M. Evacuation.
8¾ . .	0	1027	65		0	1 4	
Average . .		1029·2				35 4	Solid matter—1231 gr.
Sept. 16.							
Night . .	+	1025	60	+	+	10 0	Urine passed at four times during night
10¼ P.M. .	0	1026		+	0	3 0	with some uneasiness, not amount-
12 . .	0	1028			0	3 0	ing to pain: it contained a flaky
							red deposit of lithate of ammonia,
							apparently with mucus. 8 A.M.
							motion. Breakfast as usual.
2 P.M. .	0	1025			0	2 0	2½ P.M. Dinner: partridge, bread-sauce,
2¾ . .	+	1023			0	0 6	[and bread.
4¾ . .	+	1023			0	3 0	4 P.M. Soda water.
5¾ . .	0	1025			0	1 2	6 P.M. Coffee and toast.
7¼ . .	0	1025			0	0 6	7 P.M. Motion. In the evening severe
							pain came on in the left testicle,
							with aching of the loins, and great
							prostration. He took some beer
							and went to bed. This relieved him.
8 . .	+					1 0	Beer, half-a-pint.
Average . .		1025				24 6	

September 19th.—From an inspection of these tables it will be seen that there was but little variation of the symptoms. On the 11th he thought coffee disagreed, producing much flatulence, and therefore took milk on the morning of the 12th; this, however, was much worse than the coffee, producing great flatulence, and raising the specific gravity of the urine. On the evening of the 12th he was very low in spirits. On the 16th, it was determined to consult Dr. Prout; this was done on the 19th. Dr. Prout thought there was oxalate of lime in the urine as well as sugar; and although the patient had never been affected with any gouty symptoms, yet the Doctor was of opinion that this was a case of marked gout. He ordered a strict continuation of the diet I had prescribed, to have brandy and water instead of bitter ale, to take a grain of acetic extract of colchicum every night, and a few grains of calcined magnesia after every meal. He was recommended to travel, and abstain entirely from business. This treatment was fully carried out for three weeks, and the diet continued for upwards of two months, with the greatest success. The spirits returned, he got fat, the irritation of the urinary organs subsided. Little notice was now taken until April this year, when I took several opportunities of microscopically examining the urine; it was generally clear, and I found no oxalate of lime, but when the wind was more than usually cold it deposited lithates. On the night of the 16th of April, he took some raspberry tart for supper: had no sleep all night, had much pain of the bowels, great flatulence, and towards the morning he was seized with sickness and purging. In the morning he was better, but, having taken veal and veal broth for dinner, he was again much prostrated, and the vomiting and purging again recurred. On the following morning I examined the urine; it deposited lithates, was of a very high colour, a sp. gr. 1026, and it was quite neutral. On examination by the microscope, oxalate of lime crystals in great abundance were discovered. Nitric acid indicated no excess of urea, and although Trommer's test gave evidence of sugar, none was detected by fermentation.

Since the above time, I have taken frequent opportunities of searching for oxalate of lime, generally without success, but when, from over fatigue, improper diet, or exposure to cold, the urine has been turbid, when cool I have usually found it.

I think the pathology of this case unusually interesting: there can be little doubt, but that the urine, for some time previous to the attack, had been altered in constitution, and that this alteration was dependent upon a gouty habit. The occurrence of an exciting cause, such as over-distension of the bladder, produced an irritation of the urinary organs, which this state of urine was most apt to keep up. Although I was unable from the want of an instrument to search for oxalate of lime at the early stage of this disorder, I have carried the observations far enough to shew that it was probably present when the secretion was high coloured, scanty, and turbid. I would draw attention to the tables, for they point out at what times especially the urine is secreted, and also the relation which its composition appears to bear to the process of digestion. On the 12th, the milk taken produced much irritation; after breakfast he twice voided clear water without pain: the effect of the diluent taken is seen. At 11 this effect went off, and we have the more turbid and irritating urine derived from the mal-assimilation. The sp. gr. gradually decreases from 1030 to 1025 immediately before dinner. No sooner, however, has digestion again commenced than it again rises; one hour after dinner, although the quantity is increased, it is 1027; two hours after it is 1032, and digestion being accomplished it again sinks to 1028. On the 13th, the same observations apply: two hours after breakfast the effect of the diluent not having ceased, the sp. gr. rose from 1030 to 1036, and gradually sunk to 1028 immediately before dinner; and again it rose to 1031 three hours and a half after dinner, whilst at night we find it 1025; considerably below the average of the whole day. These remarks are sufficient to shew the intimate relation which exists between the stomach and kidneys, and how necessary it is that a careful observation be made of this important fluid. The quantity would have assured us of

not its presence been repeatedly and carefully ascertained; and having discovered it, I was most surprised to hear Dr. Prout surmise the presence of oxalate of lime without having examined the urine, and still more surprised was I to verify his opinion. I shall leave my remarks upon the pathology of oxalate of lime for a future communication.

[To be continued.]

STATISTICS OF 5754 DELIVERIES.

BY WILLIAM CAMPBELL, M.D.

THE oldest parent among the males was 77 years of age, and his wife produced 13 sons and 3 daughters—two of the latter being by a former husband: when her sixteenth son was born she was in her 41st year. In 5754 deliveries, there were but 5 male parents below the age of 20; 4 at 18, and 1 at 19. Among the female parents, 2 only were delivered at the age of 50; 3 at 47; 9 at 46; 15 at 45; 20 at 44; 21 at 43; 37 at 42; 28 at 41; 124 at 40; 153 at 19; 87 at 18; 35 at 17; 7 at 16; and 2 at 15. Of the whole number of female parents referred to, each of 31 mothers produced 12 children; 14—13; 5—14; 1—15; and 3—16 children.

In 5754 deliveries there were 2901 male and 2219 female children; the sex of the remainder had not been recorded.

There were in 400 first deliveries 244 males and 166 females, including 3 twin-births, of which 1 was a female and 5 were male infants.

In 116 illegitimate births, there were 65 male and 52 female infants, including 1 twin delivery, in which there was one of each sex.

By 153 males and females of equal ages, 318 males and 245 females were procreated, including 3 twin-births, of which 2 were male and 4 female infants.

By 340 fathers, from 3 to 6 years older than their wives, 795 males and 351 females were produced, including 5 twin cases, in which there were 3 males and 7 females.

By 143 fathers, who were from 7 to 10 years older than their wives, 266 males and 289 females were produced, including 1 twin birth, of which both were male infants.

By 112 fathers, who were from 11 to 36 years older than their wives, 267 males and 194 female children were born, including 1 twin birth, in which there was one infant of each sex.

To 117 husbands, who were from 3 to 17 years younger than their wives, 285 males and 214 females were born.—*Northern Journ. of Med.* June 1845.

CASES OF

CYANOSIS OR MORBUS CÆRULEUS,

WITH REMARKS ON THE CONDITION OF THE FOSSA OVALIS.

By W. TIFFIN ILIFF, JUN.

Kennington.

CASE I. was admitted into Guy's Hospital, under Dr. Bright, August 11th, 1841; but my attention was not directed to it until October 19th, on which day this report was drawn up.

M. A. S., æt. 24, a stout and well-made young woman, with light hair and eyes, previously residing with her parents, who move in a respectable sphere of life. Her health in early years was on the whole good, with the exception of palpitation, and occasionally an attack of ague, (she living at that time in a marshy district). Indigestion, however, and bilious attacks began to distress her; and six or eight years ago she experienced increase of the palpitation, accompanied by much dyspnoea and tightness across the chest, with considerable pain at the pit of the stomach, which was relieved by active treatment, as leeches, &c. She had no decided cough, but expectorated much, this relieving the sense of constriction. About this time she felt flushing in the face, especially after a meal, the countenance for the time becoming quite dark: she was also subject to occasional severe retching. It was not, however, until about four years ago, that she noticed a marked change of colour in the face, &c.; the lips and tips of the fingers especially, the latter being swollen, so as at times to feel as if on the point of bursting; the nails also gradually became curved. She was at first treated for an affection of the liver, until the symptoms connected with the heart became obvious; about this time she went to Dover, and was under the care of Mr. Sankey, who found that brisk purgatives of calomel, &c. and occasional mustard poultices, afforded relief. Catamenia appeared when she was 16, and have been very irregular, having ceased for a year; they were present shortly before admission, but have not reappeared yet (Oct. 19th); she generally suffers much on the first day. She is subject at times to severe

hysterical attacks; the last occurred October 16th.

Present symptoms.—No emaciation; countenance calm, of a purple or bluish aspect; eyes suffused and rather tinged; prolabia very dark; the hands present a similar colour, and the extremities of the fingers are knobbed, and the nail is curved from before backwards; the skin of the body generally is of a bluish tinge, and cool and perspirable. Chest symptoms, (in recording which I was assisted by my friend Dr. Birkett.) Anteriorly both sides equally raised, and resonant on percussion, the respiratory murmur natural; posteriorly the left side appears rather more resonant, and the respiratory murmur throughout more loud; to the right of, and above the left mamma, a loud and distinct bellows-sound is heard, increasing in intensity as we ascend obliquely, and most clear over the sternal extremity of the cartilage of the second rib, the sound diminishing in clearness as we descend; moving from the sternum towards the right mamma, is heard the natural beat of the heart with the bellows-sound, diminished in clearness and intensity by the distance. There is also a rough and short bellows-murmur (apparently deep-seated), heard beneath the nipple; the force and frequency of the heart's action appear normal; pulse 78, regular, and of moderate strength; tongue clean; bowels open daily; motions natural; urine rather high coloured (not generally so), clear, sp. gr. 1025, not coagulable. With reference to the different senses, sight is indifferent, she being at times unable to read even large print; hearing of late impaired; speech unaffected; voice rather low; smell and taste perfect; intellect clear, though she is often subject to dreams of a terrifying character; she is much affected by the cold, and suffers more in proportion in the winter than summer; her hands and feet are generally of lower temperature than other parts of the body.

Her treatment since admission has consisted of stimulating and latterly strong saline purgatives; dry cupping over the pit of the stomach; anodynes; occasionally a belladonna plaster between the shoulders and tonsils.

She left the hospital, Oct. 25th, having experienced only temporary relief.

CASE II. occurred in the practice of my father, and was that of a young lady who died at the age of 12. It appears that in infancy she manifested some general symptoms of malformation of the heart; these, though not oppressive, gradually increased, her hands and face especially were bluish, and she was rather inactive, and very sensible of cold; the ends of the fingers were knobbed; no alarming signs occurred until the age of 11, when all the symptoms, especially the dyspnœa, became aggravated, and she sank gradually under them. On examination after death, the heart presented the following appearance: rather large; the right auricle strong and large; foramen ovale open so as to admit a goose-quill, but valvular on the right side; Eustachian valve well formed and extensive; ventricles about equal, communicating at their base by an opening sufficient to admit the little finger; pulmonary artery small and thin, with a conical valve truncated above to form an opening, which may have admitted a very small goose-quill, but being thickly beset with vegetations will now scarcely admit a crow-quill; the cord of the ductus arteriosus complete; vegetations also observable on the mitral and tricuspid valves.

CASE III. came under my observation in Gny's Hospital, the end of 1841, and is fully reported in the Clinical Society's Books, by Dr. Browne. The following is a brief outline of the history:—

Mary D., æt. 36, has been blue in the cheeks, lips, and tips of the fingers from childhood, (at which time the colour was more intense,) and has always suffered from dyspnœa on exertion: six years ago she had an attack of rheumatism in the larger joints, on the relief of which she began to suffer from palpitation, which has continued; two years ago the feet and legs began to swell, but it subsided in a few weeks, and about two months since reappeared with ascites and coagulable urine. Her aspect was bluish, though not intensely, and the tips of the fingers were clubbed; a murmur accompanied the first sound, the second being remarkably sharp and quick, and like the sound of a horse galloping; the murmur is heard distinctly over the aortic valves; there is

evident frémissement. She sank gradually, from increase of ascites, and dyspnœa, with corresponding decrease in power: an examination was refused.

CASES IV AND V. were of two infants blue from birth; one died when three days old, the other when nine days. I assisted at their examinations: in both the foramen ovale was unclosed.

The accounts of these and other cases show the general symptoms of this peculiar disease to be a bluish or livid hue of the integuments, especially the face, extremities, and mucous surfaces; a peculiar knobbed appearance of the tips of the fingers, with short curve of the nail from before backwards; a deficiency in the natural warmth of the body, great sensibility to change of temperature, and unusual intolerance of cold; palpitation increased to an alarming extent by any violent exertion or undue mental excitement; attacks of excessive dyspnœa occasionally amounting almost to asphyxia; great proneness to syncope, and in some cases a tendency to serous effusions; impaired digestion, though not necessarily emaciation. The patients thus affected linger on for various periods of time incapable of exertion, their existence threatened by frequent paroxysms of dyspnœa, until at last, in one unusually severe, or after the supervention of pulmonic disease, their life and sufferings are together terminated. It seems to attack both sexes equally, (thus, out of 24 cases, 12 were females and 12 males, these related here not being counted), and may be congenital or otherwise; of the two the former is perhaps the most frequent. The patients seldom attain the age of puberty, rarely survive its accession long, and are often well described as only existing. On the other hand, months and years may elapse before the health exhibits any marked deterioration; they may even pass puberty before there shall appear any sign of this disease, which once set up is terminated only by death itself.

Before entering upon the lesions of the heart it may be well to remark, that a long-continued internal use of the nitrate of silver has been known to produce a discolouration of the skin in some measure resembling the state

produced by this disease;* one case I have seen; it was a patient in the lunatic asylum at Guy's Hospital; she was 70 years old, and had been there for very many years; she was supposed to have taken it for epilepsy before her admission; in this case the dingy-brownish colour was universal, except where she had been cupped, and there the cicatrices were white. The diagnosis would not be difficult; for the appearance, history, and symptoms would at once indicate the nature of the one or the other. Moreover, the surface of the body in cyanosis loses almost entirely its unnatural hue during syncope; not so in the other, generally, though cases are related in which the colour produced by nitrate of silver occasionally almost entirely vanished.†

With respect to the most common cardiac lesions, M. Gintrac, of Bordeaux, gives the following result of 53 cases.

33. Foramen ovale open.

22. The aorta arose from both ventricles.

22. The pulmonary artery contracted.

14. The ductus arteriosus open.

5. The ventricular septum imperfect.

5. The pulmonary artery obliterated.

4. Only one auricle and one ventricle.

4. The aorta arose from the right, and pulmonary artery from the left ventricle. (The foramen ovale being open, and occasionally the ductus arteriosus.)

1. The aorta obliterated.

The records of nearly 30 cases which I have perused confirm the above: I may add to the list a direct communication the size of a quill, between the aorta and pulmonary artery, the ductus arteriosus being deficient, and the origin of these two trunks from the right ventricle, the foramen ovale being open. Generally, in conjunction with an imperfect septum, is found a contraction of some of the orifices of the heart, or pulmonic disease producing an obstruction to the free circulation of the blood. As also hypertrophy, with or without dilatation.

Dr. Marcet related a case of morbus cæruleus, in which the only material disease found after death was complete

* Med. Chir. Transactions, vol. ix. page 234.

† Ibid. vol. vii. page 284.

adhesion of the pleura pulmonalis to the pleura costalis, so as to obliterate all appearances of cavity.*

With reference to the condition of the fossa ovalis most contradictory statements are recorded. Thus Portal came to the conclusion that the foramen ovale as frequently remains open as it becomes closed; and Dr. Farre says, "an aperture of communication through the auricular septum is actually so often met with in subjects brought into the dissecting-rooms attached to the anatomical schools, that the observation of the student who has not witnessed it even in the adult, must have been exceedingly limited."† On the other hand, out of 450 cases examined at La Charité, Louis only found two instances. Unable to reconcile these opposite results, I carefully examined the hospital records of necropsies, and out of 619 cases in which there was decided evidence of the heart having been opened and its cavities examined, (rejecting above 600, in which the heart was merely said to be healthy), I found in 23 only, or 1-27th, was there evidence of this imperfection; in 12 it was valvular, in 11 not so. To completely satisfy myself, I determined to examine personally the condition of the fossa ovalis, and the result of 40 cases taken promiscuously, (using a small probe so as to detect the slightest imperfection), was as follows: in 3 was a *very small* valvular opening in the auricular septum, in 2 a small valvular opening, and in 1 a deficiency in the membrane closing up the foramen in three places, all more or less valvular, the largest one-sixth of an inch long, oblique, in all 6-40th, *one* only very obvious.

Before dismissing the subject, I would remark that the foramen ovale may be open to a very great extent, and yet there be no cyanosis, a few cases of which I will adduce. Case I. is copied from my father's note-book: it was that of a married lady, not particularly unhealthy, who after becoming pregnant suffered from cough and dyspnoea, which it was hoped depended on her pregnancy: shortly, however, before confinement her breathing became more difficult, and general symptoms of anasarca with coagulable urine evinced themselves.

For a few days after delivery she appeared to be going on well, but soon faltered in power, the anasarca increased, and she sank in about a fortnight, although her labour and its results were quite favourable as regards hæmorrhage, the separation of the placenta, &c.

On examining the heart, which is in the museum at Guy's, the following appearances presented themselves as, described by Mr. T. W. King. The heart was generally enlarged, dilated, and hypertrophied; the right ventricle being most affected. Pulmonary artery disproportionately large. The foramen ovale formed a circular aperture full three inches in circumference, and altogether devoid of valvular membrane; or rather a few reticular cords at the posterior inferior part were all the remains of the valve. The circumference of the foramen thick and partly muscular. Much more considerable vestiges of a large Eustachian valve existed, consisting of filaments and membrane. The tricuspid opening wide, and its curtains extensive. The bicuspid valve strong; aorta rather small; and the ductus arteriosus was a cord. Upon inquiring of this lady's family whether or not she had manifested discoloration, all that could be learnt was, that when at school she used to be scolded occasionally from a supposition that she had been sucking ink, but whether this was the case could not be ascertained.

CASE II. came under my notice in Guy's Hospital. This woman was never suspected during life to have any imperfection of either septum, nor was there marked livor. Yet, on post-mortem examination, the right side of the heart was enormously enlarged, the fossa ovalis equal in size to a crown piece; the valve open, so as to admit the thumb, and the expanded membrane largely perforated and reticulated. Pulmonary artery very large; aorta rather small.

CASE III., related by M. Fouquier, is that of a man who arrived at the age of 43 without any cyania, yet, on examination after death, the foramen ovale was found smooth and rounded, and open so as to admit the extremities of three fingers; the right auricle enormously dilated, though not to the same extent.*

* Edinburgh Journal, vol. i. page 412.

† Essay on Malformations of the heart, page 8.

* Dictionnaire de Médecine, Art. Cyanose.

CASE IV. is interesting, inasmuch as the ventricular septum was imperfect, yet the patient (a female) enjoyed good health until 18 years old, but died at the age of 20, from orthopnœa, with lividity and physical debility. The preparation is in Guy's Museum.

There are still many interesting points connected with the pathology and physiology of this disease omitted, and which it would be impossible to enter upon now.

In concluding this imperfect sketch, I would remark, that the treatment must consist of rest, quiet, and freedom from mental and corporeal excitement; the regulation of the temperature of the skin, and the avoidance of exposure to cold and damp; nutritious diet, not stimulating, and strict attention to the digestive functions and different secretions. In a word, as symptoms arise they should be combated, though it is but too certain that the cause is irremediable, and must sooner or later terminate life.

"Non est in medico semper relevetur ut æger."

URINE OF HERBIVOROUS ANIMALS.

In a memoir addressed to the Academy of Sciences, on the chemical analysis of the urine of herbivorous animals, M. Bous-singault states, that in such urine there exists bicarbonate of potassa, and not sub-carbonate, as is usually supposed; upon which fact he observes, that (omitting the urea and hippuric acid), the urine of the herbivora resembles very closely an alkaline mineral water, and that it might probably be administered advantageously (!) as such for the purpose of dissolving uric acid calculi, as well as in other cases in which the employment of alkaline waters is indicated; and he adds that a product coming from the bladder of one of his cows would inspire him with greater confidence as a medicine, than any alkaline solution prepared by a skilful chemist.—*Gaz. Médicale*, Juillet 1845.

[REMARKS.—Admitting that the potash in the urine of herbivorous animals does exist in the form of bicarbonate, and not as a carbonate, (a difference which seems of very little importance), still we doubt whether patients would feel inclined, with M. Bous-singault, to prefer the urinary excretion of any animal as a medicinal agent, to a saline fluid obtained naturally, or prepared with the essential ingredients in a pure state!—ED. GAZ.]

ON GRANULAR DEGENERATION OF THE KIDNEY AND LIVER,

AND ITS RELATION TO TUBERCULOUS AND CANCEROUS DIATHESIS.

By DR. H. EICHHOLTZ.*

[Continued from p. 1291.]

Commencing cure of pulmonary phthisis, together with the existence of cirrhosis of the liver.

CASE VIII.—A largely developed man (formerly a soldier,) aged 35, died from an attack of pulmonary apoplexy. *Autopsy.* Besides the usual peculiarities characteristic of pulmonary apoplexy, there were found scattered through both lungs a number of tuberculous cavities in progress towards cure; also numerous miliary tubercles, which were becoming obsolete, as was indicated by their hard and fibrous condition. The liver presented the appearance denominated cirrhosis; that is, it had undergone degeneration through the development of fibro-cellular tissue within its substance.

Commencing cure of pulmonary phthisis, together with the existence of fibro-cellular degeneration of the liver and of the kidneys.

CASE IX.—A man aged 45 was admitted into hospital, suffering from delirium tremens and pneumonia: he had slight dropsy: he died soon after admission.

Autopsy.—The whole of the left lung exhibited the transition of red hepatization into greyish-white granulations. Beneath the microscope there was observed in these granulations, besides fibrous substance, a large quantity of exudation globules, which were in part undergoing disintegration: some presented a cell-wall with a nucleus: here and there they lay grouped together, and then exhibited many nuclei, which in each case represented the nucleus of future pus-corpuscles: so that here the formation of pus seemed to be effected by the conversion of the nuclear contents of the inflammatory corpuscles into nuclei of pus-corpuscles, around which the cell-walls afterwards formed themselves. At the apex of the right lung were

* Translated for the LONDON MEDICAL GAZETTE, from Müller's Archiv, 1845.

found two cicatrices, one of which was about equal in size to a walnut, the other to a moderate-sized pea: both were composed of fibres exactly resembling those which were previously described as being found in the cirrhotic liver and in the kidneys. Both the cicatrices contained in their interior some shrivelled masses of tubercle, which were perfectly isolated from the neighbouring pulmonary tissue, and hence, quite harmless to it. The kidneys and liver were degenerated through the development of fibro-cellular tissue within them; the spleen on the contrary was quite pulpy.

Commencing cure of pulmonary phthisis, together with the existence of fibro-cellular degeneration of the liver, kidneys, and spleen.

CASE X.—A woman aged 34 died of pulmonary phthisis without having presented any remarkable symptoms during life. Towards the posterior part of the upper lobe of the right lung, a tolerably large cavity was found; the contents were very trifling, and no tuberculous matter was found deposited within its walls, which were composed of blackish tolerably firm cicatrix-tissue, which in many parts was already several lines in thickness; moreover, there were found scattered through both lungs numerous miliary tubercles distinguished by their firmness, which resulted from their being surrounded by cellular-tissue substance. In the upper lobe of the left lung was found a cicatrix about the size of a nut; it was composed of a blackish, very firm, fibrous tissue, and corresponded exactly in extent to the large cavity found in the right lung. On the under surface of the lower lobe of the right lung was a layer of puriform matter. The convex surface of the liver was adherent by a false membrane to the under surface of the diaphragm; the organ was enormously enlarged, extending on the right side as far down as the anterior superior spine (of the ilium); it was hard in texture, bloodless, and was degenerated through development of fibro-cellular tissue within its substance. The kidneys and spleen were similarly degenerated, but the latter not to a very great extent.

CASE XI.—A woman, aged 39, suf-

fered from cough with expectoration: she had also ascites and anasarca.

Autopsy.—In the upper lobe of each lung was found imbedded a substance about equal in size to a hen's egg; it was of a dark violet-red colour, and of a hard almost cartilaginous consistence. In the centre of each of these masses was found a cavity about the size of a small nut, filled with softened tuberculous matter; this matter was nowhere in contact with the pulmonary tissue, neither did any bronchial tubes open into the cavity, which was surrounded on all sides by cellular-tissue substance. There were no cicatricial depressions observable on the surface of this mass; it had a round and smooth form. Moreover, there were found scattered throughout the pulmonary tissue, more numerous miliary tubercles, in a or less obsolete condition. Examined beneath the microscope, the cartilaginous-looking substance was found composed of fibres of cellular-tissue; the same cellular-tissue substance was deposited in large quantities in the spleen, kidneys, and liver.

Medullary carcinoma, with cirrhotic degeneration of the liver.

CASE XII.—An old man, affected with marasmus and jaundice, had on the upper part of the right side of his chest a tumor, which on admission was of moderate size, painful especially on pressure, not very soft, and situated in the neighbourhood of the periosteum; but its nature could not be clearly ascertained during life. On dissecting out the tumor after death, the skin and muscular layer covering it were first carefully removed: the deceptive feel of fluctuation which had been perceived in the latter part of the man's life, as the tumor increased in size and in softness, was now very marked, when by removal of the muscular layer the tumor was only left surrounded by a cellular covering and a little fat. On dissecting off these latter there was exposed an uneven lobulated tumor, tolerably soft and of a reddish-yellow colour; some yellowish-white masses alternated with the more reddened parts. On passing the finger now beneath the tumor, it was observed that there was a deficiency on the fourth rib. When the tumor was completely dissected out, it was seen that it proceeded from the costal pleura,

which was thickened to an extent corresponding to the size of the tumor. The tumor, therefore, had made its way outwards from the chest, the fourth rib being gradually absorbed before it. Examined beneath the microscope there were observed nuclei and cells, the latter of which but seldom presented a roundish form, the majority of these shewing a marked tendency to prolong themselves in one or more directions: frequently there was observed on one of the broader rounded bodies a long tail-like process, or a curved tooth-like projection, so that the exact form of the cell could only be seen whilst it was rolling. Several such processes were seen on many of these cells. Each of these cells had a nucleus which was granular and mostly provided with a nucleolus. There were also present some of the spindle-shaped bodies described by J. Müller. The objection which Gluge makes respecting these bodies, namely, that they are produced by the action of alcohol, in this case at least was not valid, because the tumor was examined very shortly after its removal, and the only reagent made use of was iodine-water, by which the cell-walls were rendered more distinct. There were observed, moreover, some very large-sized globules, which had a tolerably round and regular form, and sometimes possessed in their centre an irregular spot more strongly marked than the surrounding parts (? a nucleus). The lung itself had not suffered, with the exception of being infiltrated with a yellowish serum, by which not merely the entire external surface, but all the internal parts, were stained of a yellow colour; the gall-bladder was much distended, and filled with almost black-coloured bile. The liver externally was of a deep-grey colour marked with yellowish spots; it was not remarkably enlarged; internally it was of a greenish-yellow colour, intermixed with which were darker olive-green spots about the size of millet seeds. The colour of these darker spots was produced by roundish bodies, some of which were larger, others smaller, than molecular bodies; most of them, adhering together, had a blackish-green colour; in some places they were yellowish-brown. If I mistake not, these small bodies have already been observed by J. Vogel in

a cirrhotic liver. The hepatic cells were shrivelled and few in number; fat was present in trifling quantity. The chief substance of the organ consisted of finely granular spots and of soft delicate granular fibres, which running parallel to each other had a somewhat wavy direction: they were rendered still paler by acetic acid, but on the addition of iodine-water they could again be made distinct. They were covered with the above-mentioned molecular bodies, which were also deposited between them. No trace of blood-vessels could be discerned; they were obliterated; hence no blood exuded from the liver on a section.

Medullary carcinoma in connection with the development of fibro-cellular tissue in the liver and kidneys.

CASE XIII.—An elderly female was affected with cancerous disease of the vagina; she died with symptoms of arterial phlebitis and peritonitis.

Autopsy.—On the posterior wall of the vagina there was found an irregular fungous growth about the size of a hen's egg. With the microscope there were detected in it caudate bodies, similar to those described in the last case. The peritonitis was general, and had already proceeded to the formation of pus; there were some small abscesses, about the size of pins' heads, in the substance of the uterus; some larger ones in the right fallopian tube and ovary; there were some abscesses also at the apex and base of the right lung. The liver and kidneys were degenerated through the development of fibro-cellular tissue in their substance.

I have hitherto given merely the dry results of post-mortem examinations, but I think that the number of cases which I have observed is sufficiently large to entitle me to draw some conclusions from them. Although I am convinced that morbid anatomy has been far from answering the expectations which, from the amount of labour given to it, and the excessive praise bestowed on some of its labourers, we were justified in forming of it, nevertheless it comprises a distinct field of investigation, and is capable of, and demands, as much cultivation as physiological anatomy.

In the foregoing part of this essay

there are cases mentioned in which the kidneys alone and the liver alone were affected; others in which the kidneys and liver together were affected; others in which the spleen and liver; others in which the kidneys, liver, and spleen; and lastly, others in which the liver, kidneys, spleen, and lungs, were similarly affected. Diseases which are characterised by the deposition of a certain product in different organs, or which affect simultaneously different systems, we have long since agreed to regard as morbid conditions of the mass of blood by which all parts of the body are supplied with nutritive materials; such, for instance, as tubercular phthisis, typhus, the acute exanthemata. That in these diseases the form of the morbid process is not the same in all organs and tissues, and that the symptoms vary, requires no exposition. Each one of the diseases in question is invariably the same in its nature, only the form of the morbid process, and the attendant symptoms, are determined not only by it, but also by the nature of the individual organ attacked, by its anatomical and physiological peculiarities. Inasmuch as it appears from the results of the above examinations that the same degeneration may occur simultaneously in different organs, that it can even supplant another disease and render it harmless to the system, so, (as was observed at the commencement of this essay), may all doubt respecting the nature of this affection vanish, and that view according to which the affection is regarded merely as the symptom of a peculiar diathesis be fully established; a view which has already frequently been advanced, although its correctness has been hitherto inferred only from symptoms. Now, however, it has received anatomical proof furnished by the results of the above autopsies. Much has been already, and still continues to be said, about Bright's disease of the kidney, yet its importance, so far as we regard it as an affection confined exclusively to the kidney, will gradually disappear, in proportion as we become better acquainted with the microscopic characters of those changes which take place in other parenchymatous organs. The changes which occur in the liver have already been submitted to these microscopic examinations; not so those of

the enlarged, hardened, and reddened spleen.

The conclusions which I would draw from the foregoing observations are somewhat to the following effect.

1. There is a disease commonly attacking the liver, kidneys, and spleen, which is dependent upon an abnormal condition of the blood, and is characterised by the excessive development of a substance resembling fibro-cellular tissue, by which the peculiar glandular structure of the affected organs becomes compressed, and their functions interfered with.

2. This peculiar abnormal condition, when attacking the kidneys, is known by the name of granular degeneration of these organs. If we distinguish from this granular degeneration, (or Bright's disease, as it is called) the cancerous, tuberculous, and even the purulent affections of the kidney, which are sometimes liable to be mistaken for this disease, we shall still have two forms, or rather two stages, of the disease left; the one characterized by a deposit of fat, the other by the development of a kind of fibrous substance. I would reject the idea of there being seven distinct degrees of this degeneration of the kidney, which is maintained by many writers; these degrees are merely artificial, and the adoption of them can be of no possible advantage; the view, however, of there being two stages of the disease is founded on nature, although it must be admitted that by the adoption of such a view little is gained towards combating this disease. The anatomical and pathological researches which have been hitherto made respecting the nature of Bright's disease can by no means be regarded as conclusive, because in no case have the obtained results corresponded with each other. Reicht observed fat, Gluge inflammatory globules, whilst Henle and myself noticed the development of a kind of fibrous tissue. If, however, it be allowable to draw a conclusion from a single observation, it will be easy to reconcile these various results by considering the pathological appearances presented in Case V.* For in this case the coincident occurrence in the diseased kidneys of fat and inflammatory globules, together with cells, which were under-

going conversion into fibres, sufficiently indicates, as was stated before, that in the first place an albuminous fluid containing fatty matter was excreted; that the fat and albumen had been converted into inflammatory globules, which globules had been changed into cells, and these cells developed into fibres. Now, in comparing the results of the above with the description given by Recht, Henle, and Gluge, it is probable that Recht, who observed fat, saw the disease in its first stage; Henle and myself saw it in the second; whilst, again, Gluge and myself saw it when the first stage was passing into the second. There is nothing very remarkable in the urea of fat globules being converted into fibres. Fat and albuminous fluid form the basis of every organic structure, both in the ovum and in all physiological and pathological secretions. This view receives support from the occurrence of fat globules, as well as of cells, caudate cells, and cell-nuclei, in the kidneys, in Case II.; from the fatty state of the urine, observed in Case I. (and of which the occurrence has been mentioned by these writers); also from the fatty condition of the blood in patients suffering from Bright's disease; and lastly, as I believe, from the results of the following post-mortem, the particulars of which were not given before, because a microscopic examination of the kidneys was not undertaken: both kidneys had undergone the granular degeneration, and were of a hard, almost cartilaginous consistence. It is remarkable, that, although the patient was greatly emaciated, yet the mesentery and great omentum were found literally loaded with fat; the heart and the kidneys also, especially the latter, were surrounded by a large quantity of fat. Even whilst writing this, I am enabled to subjoin the particulars of another case, similar to the last. An aged, jaundiced female, was admitted into hospital, suffering from slight dropsy and a profuse diarrhoea; she died shortly afterwards. On examining the body there was found in the liver and kidneys, besides much fat, already the development of fibro-cellular tissue: there was also found a very large quantity of fat in the mesocolon, the mesentery, and around the heart,—an appearance which contrasted

remarkably with the great emaciation of the patient. But, whether the fatty degeneration always passes on to the fibrous one, or whether, again, the former must precede the latter, or whether the fatty matter, in chemical combination with the albumen, may not be converted at once into exudation-corpuscles, or into cells, or possibly even at once into fibres, without first assuming the form of fat globules,—which seems not at all improbable—are questions which can be determined only by future researches.

Excessive use of ardent spirits, and disturbance of the functions of the skin, are especially mentioned as occasional causes of Bright's disease of the kidney. Now, there is nothing more common than the deposition of a large quantity of fat in drunkards. That interference with the functions of the skin is one cause of Bright's disease is proved not only by the more frequent occurrence of this disease in cold and damp countries (as here, in Königsburg, where granular kidney is by no means a rare disease) or by its appearance after scarlet fever, but also by the results of Fourcault's experiments, in which the peculiar symptoms characteristic of Bright's disease of the kidney made their appearance. Fourcault mentions also, amongst other things which he observed, a marked alteration in the blood; and he ascertained, in a more accurate manner than has yet been done, that this alteration occurred after the functions of the skin had been interfered with.

3. A similar fatty and fibrous degeneration occurs in the liver. With regard to the relation in which these two degenerations stand towards each other, the same question presents itself here as was considered in the previous paragraphs. The peculiarities of a liver thus degenerated—so far as can be exhibited by the knife and by injections—together with the symptoms which characterise this peculiar condition during life, have been recently given by Oppolzer in a treatise on granular liver; in which work the pathological appearances presented by the liver are attributed to obstruction of the branches of the portal vein, resulting partly from inflammation and dilatation of the bile ducts; partly from exudations of various kinds, sometimes of fat, sometimes of other materials.

Oppolzer also distinguishes granular liver from the fatty liver, although he gives no microscopic analysis of this degeneration.

Although Gluge considers the fibrous degeneration to belong only to a high degree of the disease, which he names *steurose*, and to be a somewhat subordinate affection, yet this view is not confirmed by the foregoing observations.

4. Most interesting are those cases of commencing cure of pulmonary phthisis, in connection with this fibrous development in the liver, kidneys, and spleen. That the tuberculous diathesis was in those cases entirely put an end to, appeared not only from the obsolete condition of the miliary tubercles (which were characterised by their singular hardness, resulting from a fibrous envelope, by which they were individually surrounded), but also from the more or less perfectly formed cicatrices which had occurred. The tuberculous masses (some of which were soft, others dry and shrivelled) which were found in the interior of the contracted cavities must be regarded as the remains of an already extinct diathesis, and as no longer injurious to the surrounding healthy pulmonary tissue, from which they were separated by the cicatrix-tissue, developed around them. We have thus an example of one diathesis being supplanted by another; the tuberculous one removed and another developed in its place: for which latter we have as yet no name, and the symptoms of which are, pathologically speaking, granular degeneration of the liver and kidneys, and the peculiar condition of the spleen above described.

If a tuberculous cavity can heal, so of course may the phthisical diathesis become extinct, no subsequent accession occur, no fresh material be deposited; the cicatrisation of the cavity may occur either without any disturbance taking place in other organs, or else the process may be an excessive one, and development of the fibrous substance, which is to affect the cicatrisation, may also take place in other parts, in which there is nothing to be cicatrised; as, for instance, in the liver, the kidneys, and the spleen. That this process of cicatrisation may become excessive, even in the lungs, is clearly shown. I think, by the appearances in Case XI., where in the upper lobe of

such lung was found a mass, apparently much larger than had been necessary for the cicatrisation of the previously existing cavity; moreover, it did not present on its surface the radiated appearance which is peculiar to cicatrices, but it was smooth and round. The peritoneal tubercles mentioned as being found in Case IV. must likewise be regarded as being in progress towards becoming obsolete; a supposition which was warranted by their peculiar hardness: this hardness was produced by the elongated cells and cell-nuclei, which were found surrounding each mass.

Since after the above remarks it cannot be denied that a fibrous degeneration may proceed from a fatty degeneration, so may another explanation, different to any yet given, be offered of the occurrence of fatty liver in tubercular diatheses. It cannot be correct to regard the fatty liver as compensating for deficient respiratory functions, because this degeneration is peculiar to the tubercular diathesis generally, and not merely to pulmonary phthisis. Besides, the liver is not the only organ in which fatty degeneration occurs: fat, whilst it disappears from all other parts, is frequently deposited in internal organs. Thus, Bizot observed in tuberculous disease not merely a general loss of substance in the heart, with thinning of its walls, particularly those of the left ventricle, but he has also given the particulars of four remarkable cases, the subjects of which were females, who died of pulmonary phthisis, and in all of which the lower half of the anterior wall of the right ventricle was converted into a fat-like tissue, the muscular substance being pale, thin, and seemingly in part absorbed. If we may consider a natural cure in its strict sense to consist in one organ becoming sound at the expense of another inferior to it in importance, then I would regard the peculiar deposition of fat, which occurs in tubercular diatheses, as an effort of nature to restore to its normal condition that state of blood which is found in the tubercular diathesis: which effort is not in all cases restrained within given limits, but may become excessive, and thus endanger life in another way.

5. The two cases of medullary carcinoma which were given, the one in

connection with the development of fibro-cellular tissue in the liver, the other with the development of this tissue in both the liver and kidneys, show that the cancerous diathesis may very well exist with this abnormal development of fibro-cellular tissue. We have long since ascribed Bright's disease and the cancerous diathesis to an albuminous condition of the blood, and there is nothing remarkable therefore in the coincident occurrence of these two affections. These observations, also, although they may not tend to settle completely the still disputed question, whether tubercle and cancer can occur coincidently and progress together in the same system, yet at least they favour the opinion of those who from the results of their own observations have felt themselves justified in admitting the perfect exclusiveness of each diathesis.

[To be continued.]

PUERPERAL CONVULSIONS.

THE excessive sanguine determination, which so frightfully engorges the face and bosom of the female in her throes, is generally rendered harmless by the floods of perspiration which deluge the superior parts, while the legs and feet remain dry. The salutary diversion thus effected saves many women from apoplexy and from eclampsia. I look upon it as a dangerous state, when a woman in strong labour does not sweat freely from the head and thorax. She is generally in danger of convulsion.

M. Colombat says, that one half of the cases of puerperal convulsions prove fatal. I am very sure that this is not the case in this country (America); I have met with upwards of twenty cases of the affection, of which not more than three have proved to be mortal cases, so that, instead of 50 per cent. of fatalities, I am confident that the fatalities will not reach beyond 14 or 15 per cent. under a judicious management of the attack. By a note, dated August 31, 1844, from my colleague, Prof. Huston, of the Jefferson Medical College, I learn that his results are very similar to mine, he having lost two only out of thirteen cases of puerperal eclampsia, the amount of his personal experience in hospital, in private practice, and in consultations, which is a mortality of not quite 15 per cent. instead of 50 per cent. as stated by M. Colombat. Dr. Collins, of Dublin, says, that thirty cases of puerperal convulsions occurred in the lying-in hospital during his mastership, and that five of the women died, giving a mortality of between 16 and 17 per cent.—*Dr. Meigs.*

MEDICAL GAZETTE.

FRIDAY, DEC. 5, 1845.

DR. GREGORY observed in 1842,* that if any nation is bound to encourage and promote the study of practical chemistry, it is the British nation, which has derived, and continues to derive, such vast advantages from the application of its principles to the useful arts. Yet if we investigate the subject, we shall find that the opportunities afforded in this country for the study of practical chemistry are exceedingly limited; and that, in fact, we possess no institution where the student can acquire, at a reasonable rate, the art of scientific research in the only way in which it can really be acquired, that is, by constant practice in the laboratory. In order to meet this difficulty, a Royal College of Chemistry has been recently founded, and is now open for the admission of medical and all other students. The object of this institution, as we learn from the prospectus, is not merely to advance the *science* of chemistry, but to promote its application to agriculture, the arts, medicine, manufactures, and mining,—a sufficiently comprehensive scheme, and one which will require good management, in order that it should be efficiently carried out. As we understand, it is intended that the College should be made a practical school of chemistry, where any individual who wishes to become a practical chemist, may familiarize himself with laboratory manipulations at a small expense. It is not intended that it should enter into any rivalry with the medical schools, but rather supply that in which most of them have, until the present time, been deficient—that is, a well-stored working laboratory for pu-

* Letter to the Earl of Aberdeen on the State of the Schools of Chemistry in the United Kingdom.

pils, where, under proper supervision, each may carry on his own operations. Hitherto chemistry has only been taught, and that but imperfectly, in its relations to *medicine*; and thus many non-professional persons, who wished to become acquainted with its principles for the purposes of mining or agriculture, have been deterred from the study. Indeed, there are many parts of the science of vast importance in a commercial country, which could not be appropriately introduced into a course of medical chemistry. Then, again, there has been a great drawback, in the fact that practical instruction in chemistry, for whatever object, involves considerable expense, which can neither be incurred by the teacher nor the student.

According to Dr. Gregory's experience, in those instances in which such a school has been formed, and has existed for a time, the burden has invariably been borne by the teachers, who have exacted only such fees as were within the power of the students to pay; but as this plan involved a serious loss to the teachers, it has also failed in creating an efficient school. Those teachers who, much to their credit, have made the attempt, have found it absolutely necessary to relinquish it, after sustaining considerable loss. Again, it is all very proper to make the income of a professor depend in a great measure on his diligence and success as a lecturer:—"But before this principle can be applied, the expenses necessary to carry on the course must, when they are considerable, be otherwise provided for. No professor, out of the income derived from students' fees alone, could support the expenses of a practical school, including laboratory apparatus, materials, and assistants:—and if the fee be raised, the school will fail for want of students."

Some years ago the Apothecaries' Society took upon themselves to order,

that in all medical schools the students should receive "practical instruction" in chemistry. If they intended by this, "instruction in a chemical laboratory," they ought to have known that, without additional assistants, materials and apparatus, and a large increase in the admission fees, it was utterly impossible the plan could be carried out. The expenses of a medical education are already so great, from the number of courses upon which the curricula require attendance, that it is absurd to suppose an additional tax can in this way be levied on the student. The numerous provincial and metropolitan schools which the Society had licensed, had already caused the reduction of the admission fees to a minimum, so that it could hardly be expected that the additional expense should fall on the lecturers. The chairs in the metropolitan medical schools have no endowment from Government or from private resources:—hence it is not surprising that this rule respecting practical chemistry should have fallen into desuetude, or have been entirely neglected. Nothing could more strikingly shew the unpractical nature of the Hall-regulations, if we except the fact, that all the chemistry which a student is to learn to satisfy the present curriculum, must be acquired in the first *six months* of the three years during which he must attend the school! His time is so marked out, that he cannot, if he wish it, attend at any other period: hence elements, principles, and practice, are to be acquired in the midst of anatomy, physiology, materia medica and therapeutics, during the first half-year, or in *one-sixth* of the whole period allotted to study. Surely nothing can more strongly show the necessity for a change in the curriculum; the effect of which is, to compel many students to resort to the system of grinding during the last few months of their attendance.

We have every reason to believe that, to those who can spare the time, the Royal College of Chemistry will be an economical resort for perfecting themselves in a practical knowledge of the subjects which they have heard discussed in lectures. It will, at a small admission fee, save the expenses attendant on a private laboratory, which after all, without a considerable outlay, can never be so fitted up as to make it serve the purpose of the medical or general student. In the list of the Council we find the names of Dr. Prout and Mr. Brande, two distinguished English chemists; and these furnish a sufficient guarantee that the objects of the institution will be properly carried out.

The present medical session is also marked by the establishment of working laboratories at University and King's Colleges, and at the Institution of the Pharmaceutical Society. The fees for attendance at these laboratories are in no case disproportionately high, considering the expense and labour required for carrying out an efficient plan of practical instruction. It is hardly fair to compare these English establishments with the Giessen University, to which so many of our students have, within the last few years, resorted for instruction; but we learn from Dr. Gregory's pamphlet that the annual allowance there for apparatus, chemical materials, &c. is £130*. This is paid by the Government, and it defrays the costs when the working students do not exceed *fifteen*. The salaries of assistants are not included in this estimate. The fee for a nine-months' course at Giessen is one-fourth of that charged at the University and King's Colleges, and one-half of that fixed by the Royal College of Chemistry. The latter, however, is, with a

few trifling exceptions, inclusive of apparatus and materials, while at Giessen, the student has to purchase all necessary articles at prime cost. How little encouragement is given by the Government of this country to the cultivation of this science, is seen by the manner in which certain fiscal regulations have been allowed to press heavily upon chemical apparatus and materials. The German combustion-tubes, and other glass apparatus, have been hitherto imported, but they could only be procured in England at a cost which rendered it impossible for an English student to engage in any important branch of organic analysis.

Then, again, the sale of alcohol*,—that most useful article to the chemist, has been placed under such absurd restrictions, that an individual who requires only a few ounces solely for *chemical purposes*, is compelled to purchase two gallons, or none at all! Many other instances might be adduced to show that the English Government not only gives no support to the public teaching of this most useful science, but that it actually throws many obstacles to its economical pursuit, in the way of those who are disposed to devote their time and intellect to its cultivation.

We may hope, however, that the difficulties which have hitherto attended the teaching of practical chemistry in this metropolis, will be removed by the newly established Royal College and other working schools; that English students will not hereafter be compelled to resort to Giessen, and other foreign universities, in order to make themselves practically acquainted with a science, to which English arts, manufactures, and commerce, are so deeply indebted.

* The entire cost of the Giessen Laboratory, including furnaces and indispensable fixtures, amounted to £1,120 sterling. This expense was defrayed by Government.

* Chemists and druggists are prohibited from selling less than *two gallons* of alcohol at once; and many have been fined in heavy penalties for selling smaller quantities for *chemical purposes*! We believe that this regulation still continues, and is carried out, under the excise laws, in a most oppressive form. This has rendered it necessary to colour, scent, or otherwise contaminate the spirit in order to evade the law.

Reviews.

Illustrations of Modern Mesmerism, from Personal Investigation. By JOHN FORBES, M.D. F.R.S. &c. London: Churchill. 1845: pp. 101.

THE experiments and cases detailed in this little work having already appeared in distinct papers in the present volume of this journal, it will require but a short critical notice. We are glad that the author has republished these papers in an easily accessible form, as in our opinion no better exposure of the absurdity and imposture of the pretended "science" (!) of Mesmerism has ever before appeared. Of all the misapplications of language, there is, perhaps, in the present day, none more glaring, than that of attaching the name of "*science*" to the collection of a set of pretended facts, mixed up with crude hypotheses, which, if true, simply require us to reverse all that we know of the laws of nature. This pseudo "*science*" merely calls upon us to believe that the most opaque bodies become perfectly transparent for the special gratification of the curiosity of a wonder-seeking assembly,—that persons can smell with their ears, and see plainly with their toes and fingers; and yet, when the evidence upon which such strange assertions are based, comes to be rigorously scrutinized by competent men, they are met by apologies, and are told that the performer requires to be seen several times—that, in short, their judgment is to be, not a judgment from facts which admit of no dispute, but an *average* judgment, based on the relative number of failures and successes which attend the performances. The greater number of persons who have witnessed these exhibitions are about as well fitted to detect the tricks of the "*mesmerized*" as they are to understand or explain those of an accomplished juggler; and yet, although they know that they are being imposed upon in the latter case, they insist that there can be no imposition in the former;—for no better reason than that they are unable to explain how the events come to pass!

There are some, however, who do not take the "*omne ignotum pro mirifico*," but who are induced to look with equal scepticism upon the feats of the mesmerizer and the juggler. Among

these is the author of the Essay before us; and if any antidote were wanted to dispel the absurdities of mesmerism from a wavering mind, we would point to the experiment detailed at p. 84 of Dr. Forbes's Essay. A youth, who had contrived to deceive so completely an acute lawyer (!) as to induce him to assert that what was done, was done *bonâ fide*, was here successfully unmasked by Dr. Forbes and Dr. Sharpey. A card-case, which was to become *diaphanous* under the powers of mesmerism, was so arranged that the card which it contained (having upon one side the letters to be read) could not be removed without displacing a number of long and narrow slips of cork, filled up the vacant space*. These, if once disarranged, could not be easily replaced by the *mesmerizer* without certain detection. As it might have been anticipated, the impostor removed the card, and finding that the slips of cork did not admit of being replaced, he attempted to get rid of the evidence of his trickery by masticating and swallowing them. This did not escape the sharp eyes of the experimentalists, and the *bonâ fide* performer was caught *flagrante delicto*! If the exposure has not been as successful in other cases, we believe that this has been entirely owing to the spectators having allowed themselves to be outwitted.

To adopt the language of the preface, we have no doubt that the perusal of the exposures contained in this little book will "teach a useful lesson to those numerous unscientific persons who are accustomed to attend mesmeric exhibitions, public or private, from motives of rational curiosity, or with the commendable object of investigating what seem important truths. Such persons, it is believed, must now feel convinced that no reliance whatever is to be placed on the results presented at such exhibitions as evidencing the truth and powers of mesmerism. As these results are witnessed by the ordinary visitor, it is quite impossible to discriminate the true from the false. The coarsest jugglery may pass with the honest spectator, seated at a distance from the scene of action for mysterious and awful truths."

* If any of our readers should have occasion to try this experiment as a *bonâ fide* test of clairvoyance, we would suggest that the slips of cork should be previously well soaked in an ethereal solution of cantharides, or in the oil of cloves.

We shall conclude by recommending this pamphlet to the perusal of all who have been hitherto inclined to put faith in the proceedings of Mesmerists and Zoists.

Remarks on Mesmerism in 1845. By J. B. ESTLIN, F.L.S. Being a portion of the President's Address, delivered at the Fourth Annual Meeting of the Bath and Bristol Branch of the Provincial Medical and Surgical Association, held at Bristol, June 27th, 1845. 12mo. pp. 29. London. Churchill, 1845.

THE fact that Bristol has of late been rather severely visited by itinerant propagators of the mesmeric delusion, appears to have been the reason which has induced Mr. Estlin to stand forward as the advocate of common sense, in dissuading his fellow-townsmen from allowing themselves to be cajoled by the juggling manœuvres of these impudent charlatans. With this laudable intention Mr. Estlin has succeeded in putting forth a very sensible pamphlet, fraught with arguments, original and selected, which we believe would prove utterly confounding to any *honest* magnetizer, whose visage had not long become bronzed and hardened in resisting an expression of defeat, and whose integument had not been rendered tough and callous as the hide of a rhinoceros under the reiterated lashings of honest criticism.

Doubtless a certain degree of benefit is conferred upon society by the ingenuous writer who succeeds in preventing any one elderly twaddler from inflicting upon a party assembled for purposes of rational intercourse, the absurd views with which a still more absurd display of mesmeric phenomena have recently confounded his perhaps never very lucid perceptions, or who fortunately effects the humane purpose of restraining some weak-minded gentlewoman from devoting herself to ridicule for the good of (mesmeric) science. Still, we are inclined to coincide with the opinion of the author, that it is scarcely worth while to take the trouble to expose these fraudulent absurdities: the better way of determining the merits of the mesmeric art "is to leave the field quite open to its professors, giving them an unchecked facility of

writing and exhibiting what they think desirable." The adoption of such a course might probably, for a time, be productive of an infinite increase of audacity on the part of the pretenders, but it could scarcely fail eventually to render the true character of their proceedings still more glaring.

After the clear exposures of the trickery of the mesmerisers by Dr. Forbes and others, it would perhaps be advisable to permit these magnetomaniacs to exhibit to the world the absurdity of their own pretensions. If this course be pursued, we doubt not that, at no very distant period, the professors of the so-called science, will effectually bury themselves beneath the rubbish of their own inventions, while the absurd doctrines themselves

"Shall go down
To the base dust from which they sprung,
Unwept, unhonoured, and unsung,"

leaving a clear arena for the exhibition of some new folly!

Correspondence.

LETTER FROM DR. DICK.

SIR, — My last paper in the *MEDICAL GAZETTE* (Nov. 28), was sent, in its first draught, to the printer. I did not receive a proof of it till so late on Wednesday night, that the correction was obliged to be postponed till Thursday morning. It was then executed hastily, in order to afford time to the printers. Hence several inaccuracies, which I beg leave to notice.

I would refer, first, to an expression which may seem to require explanation, though the meaning, in my *own* mind, would require none. In reference to Dr. Bird's statements, as to the non-coexistence of saccharine and oxalic urine, I say, "But is Dr. B.'s statement accurate?" I trust no one would, for one instant, suppose that this phrase was meant to question the entire accuracy of Dr. B.'s statement in regard to his *own* experiments and observations, for so far from this being in my mind, it never occurred to me that my words could have this construction put upon them: and, in fact, the context shews this. My expression ought to have been, "Is Dr. B.'s experience, in this matter, universal? Does it correspond with the experience of others?" And I proceeded to shew that it did not, with that of Dr. Prout or with my own*. — I am, sir,

Your obedient servant,

ROBERT DICK.

12, Bentinck Street, Manchester Square,
30th Nov. 1845.

* ERRATA.—At page 1336, 2d col., 17 lines from the bottom, dele "in order that." At page

Medical Intelligence.

UNIVERSITY OF LONDON.

EXAMINATION FOR THE DEGREE OF M.D.

M.D. PASS EXAMINATION.—1845.

Monday, November 24.—Morning, 10 to 1.

Intellectual Philosophy.

Examiner, Rev. H. Alford.

1. GIVE an analysis of Locke's Essay on Human Understanding, and state your own opinion as to the character and tendency of that school of philosophy, of which Locke is one of the exponents.

2. What, according to M. Cousin, are the principal faults in the Essay? Accompany the statement of each with remarks of your own.

3. State in full, Cousin's criticism on Locke's theory of cause and effect: and mention any other remarkable accounts which have been given by modern philosophers of the same matter.

4. Translate the following, giving a full explanation of the clauses in italics:—

"Je dis que, dans la question qui nous occupe, l'idée de la justice, l'idée de la loi morale, violée ou accomplie, est: 1^o. la *condition logique* de l'idée du mérite ou du démérite, qui certes jamais ne naîtrait dans l'esprit, si préalablement n'était donnée l'idée du juste et de l'injuste. Or Locke, après avoir confondu souvent la condition logique d'une idée avec sa *condition chronologique*, confond ici à la fois la condition logique et chronologique d'une idée avec cette idée même, et même avec une conséquence de cette idée: car l'idée de peine et de récompense n'est qu'une conséquence de l'idée du mérite et du démérite; qui, à son tour; n'est qu'une conséquence de l'idée du bien et du mal, du juste et de l'injuste, qui est ici le principe suprême, au delà duquel il est impossible de remonter."

State the decision of Locke respecting innate ideas, and the arguments by which he supports it.

5. What place do you assign to Bacon in the history of inductive philosophy? State, as nearly as you can in his own words, the objects which he proposed to himself in the *Novum Organon* and give an account of its contents.

1337, 2d col., 2d line from bottom, for "sumatur," read "sumatur." Delete the whole paragraph beginning with "The consideration," &c., in col. 1st of page 1338. In the same page and column, for the sentence, "The uncombined lactic and uric acid, according to Berzelius, is owing to the acid reactivity of the urine," read "To uncombined," &c.. "is owing," &c. For "constitutional systems," about the middle of col. 1st of page 1335, read "constitutional symptoms."

6. Does Bacon seem to you to have rightly apprehended the logic of the ancients? Justify your answer by commenting on the following aphorisms:—

"The common logic is better fitted to fix and establish errors, which are found in vulgar notions, than for searching after truth: so as to be more prejudicial than useful."—*Aph.* 12.

"Aristotle corrupted natural philosophy with his Logic, in forming the world of categories or predicaments and imposing numerous other fictions, at his own pleasure, upon the nature of things, being all along more solicitous how men might defend themselves by answers, and advance something that should be positive in words, than to come at the inward truth of nature."—*Aph.* 63, 6.

Logic and Moral Philosophy.

Examiner, Mr. Burcham.

1. What conclusions can be drawn with respect to a moral government from the fact that man possesses a moral nature?

2. How does it appear that the notion of a moral scheme of government is not fictitious, but natural? What different methods have been used for proving the existence of moral government?

3. In what way does Butler consider the question of necessity? What are the arguments for the moral government of God which that question does not affect?

4. How does Stewart define *abstraction*? What are the principles upon which general reasoning proceeds? How have they been misunderstood by the Realists and Nominalists? What is the use of general terms as regards reasoning?

5. What are the principles of association enumerated by Stewart? Into what three, according to Hume, may they be resolved?

Afternoon, 3 to 6.

Case in Midwifery.

Examiner, Dr. Rigby.

Mrs. P., æt. 29, tall and slender, mother of three children, was delivered on the 3d, of a large male child after a very short and sudden labour.

The uterus contracted well for a short time, but relapsed again, and hæmorrhage came on; the placenta came away easily, and some scæle cornutuni was given. The uterus continued alternately to relax and contract for more than half an hour, in spite of the ordinary means for inducing uterine contraction, until the child was applied to the breast, when its contraction became permanent. This lady has had hæmorrhage from inertia uteri after every labour. The bowels had been well opened before labour, and again on the following day.

6th.—Was suddenly seized early this

morning, after having complained of cold feet and general chilliness, with intense pain in the region of the uterus, which is hard and exceedingly tender, the pain coming and going in distinct intermissions. Pulse quick, but number not stated; breasts beginning to fill. The abdomen was ordered to be covered with a hot linseed-meal poultice, the uterus and vagina to be washed out with warm water.

℞ Hydrarg. Chloridi. Pulv. Ipecac. co.
aa gr. viij.; Mist. Acac. q. s. M. ft.
Pil. ij. statim sumendæ.

Meridie.—Pain very much relieved; nothing came away with the vaginal injection; has taken only one pill instead of the two, as ordered; pulse 120, weak; has slept comfortably.

Let her take the other pill immediately, and a Seidlitz powder every two hours until the bowels have acted well.

Vespere.—Bowels have acted once copiously, with much relief.

7th.—Has repeated the Seidlitz powders without effect; has no pain of abdomen. Pulse 120.

℞ Hydrarg. Chloridi, gr. vj.; Pulv. Jacobi Veri, gr. iv. M. ft. Pulv. meridiæ sumend.

Vespere.—Has had two large, offensive, unhealthy-looking evacuations. Pulse 116, soft.

Rep. Haustus Sodæ Tart.

8th.—Much better. Pulse 112, soft. Bowels relieved twice very copiously.

Rep. Haust. Sodæ Tart. Let her have a little beef-tea for dinner.

Vespere.—Still better. Pulse 108. Bowels again copiously relieved; evacuations more healthy.

She continued to improve steadily.

1. What was the nature of the attack?
2. What was the probable cause of it?
3. What were the indications for treatment, and were they properly followed out?
4. Could any means have been adopted for preventing this attack?

Tuesday, November 25.—Morning, 10 to 1.

Medicine.

Examiners, Dr. Billing and Dr. Tweedie.

1. Mention the sources from which effusions of blood within the cranium may arise. Describe the anatomical characters of cerebral hæmorrhage, and the changes which take place in the blood and cerebral tissue when the individual survives its immediate effects. Give the diagnostic symptoms of this lesion.

2. Describe the forms of hypertrophy of the heart. Give the general and physical signs of hypertrophy of the left ventricle.

What are its more common causes and results?

3. Sketch the symptoms, causes, and treatment of chorea.

Afternoon, 3 to 6.

Medicine.

Examiners, Dr. Billing and Dr. Tweedie.

1. Describe the various forms of periodic fevers, mentioning the duration of the apyrexial period, and of the paroxysm or fit in each variety.

2. From what causes may dropsy of the abdomen arise? How is it distinguished from other enlargements of this cavity? Describe its treatment.

3. Mention the causes and detail the treatment of infantile convulsions.

The following is a list of the candidates who passed the late examination for the degree of M.D.

DOCTORS OF MEDICINE.—1845.

First Division.

Davis, John Hall, University College.
Ellison, James, St. Bartholomew's Hospital.
Humble, William Edward, University Coll.
Leonard, Thomas, University College.
Powell, R. H. Apothecaries' Hall of Ireland.
Routh, Charles Henry Felix, Univ. College.
Savage, Henry, University College.
Swayne, J. Griffiths, Bristol Medical School.
Timms, Godwin Williams, University Coll.
*Williams, Thomas, Guy's Hospital.

So much of the regulations as related to the examinations for Honours for the Degree of Doctor of Medicine has been rescinded, and the following substituted in lieu thereof: "If in the opinion of the Examiners sufficient merit be evinced, the candidate who shall distinguish himself the most at the examination for the degree of M.D. shall receive a gold medal of the value of twenty pounds."

EXAMINATION FOR HONOURS.

Physiology and Comparative Anatomy.

Baines, M. (*Schol. & Gold Med.*) King's Coll.
Brown, F. J. (*Gold Medal*) University Coll.
Radcliffe, C. Bland, Leeds School of Med.
Whittle, E. Royal Coll. of Surg. in Ireland.
Wayte, Charles Matthew, Guy's Hospital.
Hensley, Frederick John, King's College.

Surgery.

Brown, F. J. (*Schol. and Gold Med.*) U. C.
Radcliffe, C. B. (*Gold Med.*) Leeds Sch. of M.
Whittle, E. Royal Coll. of Surg. in Ireland.
Hensley, Frederick John, King's College.
Palmer, T. Apothecaries' Hall of Ireland.
Wayte, Charles Matthew, Guy's Hospital.
Steel, Samuel Hopkins, King's College.

* To Dr. Williams was awarded a Gold Medal for a Commentary on a Case in Medicine.

Medicine.

Wayte, C. M. (*Gold Medal*) Guy's Hospital.
 Radcliffe, C. B. (*Gold Med.*) Leeds S. of M.
 Brown, Frederick James, University Coll.
 Palmer, T. Apothecaries' Hall of Ireland.
 Whittle, E. Royal Coll. of Surg. in Ireland.
 Hensley, Frederick John, King's College.

Midwifery.

Brown, F. J. (*Gold Medal*) Univ. College.
 Hensley, Frederick John, King's College.

Structural and Physiological Botany.

Whittle, E. (*G. Med.*) R. C. S. in Ireland.

[We have not been able to afford space for the Examinations in Medicine and Surgery, but intend giving them in our next.—
 ED. GAZ.]

SUCCESSFUL CESAREAN OPERATION.

This operation has been lately performed by Dr. Radford, of Manchester, and Mr Goodman, of Salford, on a female labouring under pelvic distortion from *mollities ossium*. The child had reached the seventh month and a half of gestation: it was removed living. The condition of the patient was favourable for the operation, and there are good grounds to hope that she will do well.

REGISTRAR'S REPORT.

AMONG the Registrar's notes we find one singular cause of mortality which has hitherto escaped observation. The Aberdare (Wales) Registrar writes, that "The deaths (79) are above the average, *attributable to the number of coroners' inquests*, I having registered 37 this quarter." We cannot exactly comprehend how the increased average of deaths can be *attributed* to the number of coroners' inquests, unless there happens to be some truculent coroner in that quarter of Wales, who privately slaughters her Majesty's lieges in order to create business for himself, on the old principle "*il faut que tout le monde vive!*" We think this item requires some investigation on the part of the Registrar-General!

OBITUARY.

ON the 19th inst., at Brighton, James Williamson, M.D. of Stretton Hall, Cheshire, formerly physician at Leeds.

ON the 27th inst., Edward Tegart, Esq., Inspector General of Army Hospitals.

ON the 24th inst., Dr. Robert Williams, Fellow of the Royal College of Physicians, and Senior Physician of St. Thomas's Hospital.

Lately, at Warwick, Dr. Charles Wake.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Tuesday, Nov. 25, 1845.

DR. BABINGTON, VICE-PRESIDENT,
 IN THE CHAIR.

A Case of Triplets, in which one child was born alive with two fœtuses, which had lost vitality for three preceding months, with some Remarks on the Probable Cause of Death. By W. PRETTY, Esq.
 [Communicated by S. MERRIMAN, M.D.]

THE subject of this case was a healthy young woman, aged 26. She had been married twelve months, and, it was computed, had completed the seventh month of pregnancy. From the first she had much abdominal tenderness, and during the last two months there had been a dark-coloured watery discharge per vaginam.

On the 26th of April, without evident exciting cause, she was prematurely taken in labour; there was more sanguineous discharge than usual before delivery, and much tenderness over the uterus. Examination per vaginam detected a portion of placenta lying within a dilated os uteri, and by its side some semi-solid moveable substances, covered with thin membrane, which, on being removed, proved to be two small fœtuses. Presently the head of a third child presented, and was shortly born, but only lived three hours. The after-birth was in the vagina, and on being removed, was found to consist of two placentæ, a single and a double one, with three membranous sacs. The patient had a good recovery. The two smaller fœtuses, in colour, and the absence of all factor, resembled those which have been preserved in spirit, and were very much flattened from back to front. One little exceeded in size a crown-piece, the other was somewhat larger. Their weights respectively were four ounces and seven ounces; the double placenta weighed eight and a half ounces; the child born alive, three pounds and eight ounces, and measured in length fifteen inches: they were all males. The placenta retained very little of its soft, spongy texture; it was firm, lobulated, and mixed up with much fatty matter.

The author alludes to the opinion of Dr. Merriman, who considers that the death of the fœtuses was the result of compression; and also to that of Dr. Murphy, who attributes it, in this case, to disease of the placenta—viz., inflammation and subsequent disorganization of its structure: the author himself is led to believe that it may sometimes arise from the former cause; at other times, and perhaps most frequently, from the latter.

DR. GREGORY did not rise for the purpose of animadverting on the particular object to which the author of the paper had called the attention of the Society—the cause of the arrest of foetal life—but to offer one or two remarks on the statistics of multifetation. He was desirous to collect the opinions of the members of the Society on the relative proportion which twin and triplet births bore to single births. By consulting the returns of the Lying-in Hospital of Dublin, he found that the proportions were—one out of 60, twins; one in 5000, triplets; one in 150,000, quadruplet births. As this was the largest institution of the kind in this country, and perhaps even in Europe, he presumed that such was the general law of nature, but he wished to ascertain if the proportion varied in different countries, and in different classes or races of mankind. Dr. Gregory observed, that the disposition to multifetation was general in the lower tribes of animals, and it was a curious matter of speculation whether any relation could be traced between the like disposition in women, and in the inferior orders of creation. He asked those in the Society who had devoted themselves to such inquiries, whether multifetation was more common in savage than in civilized life—in hot countries than in cold. It was impossible to overlook the remarkable disposition which existed to a recurrence of the same phenomenon in the same uterus. A woman who had twins once, often had them a second, and even a third time. Dr. Gregory had collected several instances of this, which he begged permission to read to the Society.

1. A Dutch lady at the Cape of Good Hope had seven children at three births—twice twins, and once triplets. 2. A lady, (Mrs. G—,) of Hingham, Norfolk, had five children in eleven months. 3. A lady, residing in Suffolk, had twins three times. She had six children in three years, all of whom lived and did well. 4. A near relation of Dr. Gregory, residing at Charing, Kent, had four children in twelve months. One set of twins were born in April; the other in March of the following year.

Dr. Gregory wished to inquire further, whether it was consistent with the knowledge of any member of the Society, that the disposition to multifetation was hereditary. He had been informed, on good authority, that such was the case, but he had not collected individual instances. Perhaps the members of the Society could supply the deficiency.

Dr. Gregory would ask, lastly, if it was known whether the disposition to multifetation was equally strong in the upper and lower classes of society. He himself knew but of two instances in which triplets had occurred in the upper classes. One was the

other, a lady nearly connected with an important functionary at the coronation of the English sovereigns. In July, 1836, Lady — was delivered of triplets (three girls), all of whom lived for a considerable time, and did well. He believed that one had since died.

Dr. Gregory, in conclusion, apologized for drawing the attention of the Society to points not immediately connected with the subject of the paper which had been just read, but he trusted not altogether unworthy of consideration.

MR. DAVIS related a case of twins, in which one foetus went on to the full period; the growth of the other was arrested at about the fourth month: this foetus was attached to the edge of the placenta, and was flattened and crushed.

MR. STREETER said that Dr. Robert Lee had, five years since, exhibited to him a case very similar to the one detailed in the paper. The placenta was that of a triplet conception, to which were attached, by the umbilical cord, two foetuses, born at about the fourth month, the third having been alive at the full period. As many as 160 years ago, Paul Portal had figured a somewhat similar case,—the two blighted foetuses had an united placenta, while that born at the full period had a placenta distinct. Cases of triplet conception were undoubtedly rare; not so, however, those of twins, where one foetus died early and was retained in the uterus until the other had arrived at the full period. Dr. Collins, in his "Practical Midwifery," had recorded three such cases, and Mr. Streeter had related one in his work on abortion, which had occurred in his own practice. A neighbour of his had also met with a similar case, the blighted foetus of which was in his possession, and weighed rather less than three ounces. The other child was born alive. He had been glad to hear the obstetrical questions which had been put to the Society by Dr. Gregory, because he was a fellow of that college which only a few years since had stigmatized the practice of midwifery as an undignified pursuit. He hoped this circumstance gave evidence of the entertainment of more liberal and correct views on the subject for the future. He referred Dr. Gregory, for further information, to the works of Lachapelle, and the records of the Brownlow-street Hospital. It would appear that the proportion of twin to single births was much influenced by race. Thus, in Ireland, it had been found to be one in sixty; in England, one in ninety; in America, one in seventy-five. The proportion was different in France. In Dr. Reid's published cases, occurring in the parish of St. Giles, the proportion was nearly one in sixty-four. With reference to the cause of death in the foetuses which were blighted, he ques-

tioned whether the opinion expressed in the paper, that it arose from pressure and degeneration of the placenta was correct. On the contrary, he believed that the degeneration was more likely to have taken place after the death of the foetus than before, and that it would be found to be the result of changes in the maternal portion of that organ after the cessation of its proper function for so many months. With respect to the influence of placental disease on the life of the child, his own experience, in opposition to the opinion of Wagner, led him to believe that the effusion of blood was not the usual cause of the death of the foetus, but that these effusions were in reality the consequence of the continued growth of the maternal portion of the placenta, the vessels of which gave way when not supported by the corresponding expansion and growth of those of the foetus. With respect to superfoetation, he remarked that the size of a foetus afforded no conclusive evidence of its age. He referred to a case of twins attended by himself, and published by Dr. Guy, in which both were born alive, and yet one weighed just as much again as the other. A common chorion enclosed them both, proving their simultaneous conception.

History of a Case of Ligature of the left Subclavian Artery between the Scaleni Muscles, attended with some peculiar circumstances. By J. C. WARREN, M.D. Professor of Anatomy and Surgery, in Boston, U.S.A. Honorary Member of the Royal Medical and Chirurgical Society, &c.

The author remarks that the history of an operation for the ligature of the subclavian artery would seem scarcely worthy the attention of the Society. This operation has been done many times in various parts of the world, and the annals of this distinguished body contain no less than twelve cases. The case which he has the honour to lay before them possesses peculiarities, and will, he hopes, afford some practical inferences.

James A. aged about 30, on the evening of December 23d, 1843, while in a state of intoxication, slipped on ice, fell, and struck his left shoulder against the kerb-stone of the side-walk. Surgical aid was called, and violent efforts were made to reduce the dislocation, but in what manner the patient could not tell, excepting that he thought one person placed his foot with a boot on, in the axilla. He was sent to the hospital, and on the next day was seen by the author, who found the left arm and shoulder much swollen. Leeches and cold applications were employed, and on the following day the swelling was so much reduced as to

enable him to decide that no dislocation existed. During the night of the third day following (December 28th), the patient was seized with a violent fit of coughing, in which he felt something give way in his shoulder. The next morning the shoulder and arm were very much discoloured and enlarged, the arm was painful, and the patient much prostrated. On the 30th it was discovered that the man had no pulse in his left wrist, or in any part of the arm, and he had also lost both feeling and motion in the extremity. The swelling increased until it became enormous, the arm turning back in the axilla. A vesication was noticed on the back of the forearm. January 27th, 1844, an abscess was found to be forming in the axilla. In seven days it pointed, but did not open till February 4th, when it discharged a coagulum, and about a pint of fluid dark-coloured blood. Three days subsequently, at six o'clock in the morning, a sudden gush took place from the wound, by which the bed was inundated, the mattresses soaked, and the blood poured upon the floor. Exhausted and almost lifeless, he sunk into a state of syncope, and the hæmorrhage ceased. As he was too low to undergo any operation, it was agreed that if he lived to the next day, the subclavian should, if possible, be tied. By the next morning he had much revived. At ten o'clock he took eighty drops of the tincture of opium, and at eleven was carried into the operating theatre.

A great difficulty presented itself in the outset of the operation, the swelling of the shoulder, the tumor in the axilla, and the natural shortness of the neck, almost obliterating the space between the shoulder and lower jaw. The author, after minutely detailing the steps of the operation, states that the aneurism-needle was passed under the first dorsal nerve, which was mistaken for the artery. The wound was too deep, too narrow, and of consequence too dark, to permit the artery to be visible. The anterior scalenus was partially visible, and, passing the forcinger of the hand to the edge of this, a good portion of the muscle was divided by the probe-pointed bistoury, introduced upon the finger. The subclavian artery then became quite sensible to the touch, and slightly distinguishable by the eye. A long aneurism-needle was passed under the artery, and at this moment a slight whistling was heard, and the author was satisfied that some air had entered the thorax. The ligature was tied, and the wound closed.

The patient improved after the operation. On February 22d, the thirteenth day, the ligature was removed. On the 29th, a stream of blood was seen to issue from the unclosed part of the wound; the blood lost amounted to about a pint, did not issue per

saltum, and was of a venous colour. The hæmorrhage was arrested by pressure. At the commencement of March, he had an attack of pneumonia, confined to the lower lobe of the left lung, and also a second attack about the 1st of May. By the 1st of October, the swelling had disappeared from the arm, and the motion had returned in the shoulder-joint. The large excavation in the axilla was reduced to a fistulous tube. On February 4th, three hundred and sixty-one days after the operation, the author was able, for the first time, to detect a distinct pulsation in the radial artery, and subsequently one of an indistinct character in the ulnar and brachial. The patient, June 15th, had nearly recovered. There were still fistulous openings in the neck and axilla. Sensation and motion were slowly improving.

The author remarks, that the cause of the rupture of the subclavian artery in this case is involved in some obscurity. The probability seems to be, that great violence was employed in the attempt to reduce the bone, and that the arteries and nerves were contused by strong pressure of the operator's boot, combined with the forcible extension of the arm. The vessel did not rupture immediately, because its coats were contused, and not torn asunder, but a separation of the contused parts took place, in consequence of the violent efforts of coughing, on the fifth day after the accident. The author, after noticing the occurrence of secondary hæmorrhage twenty days after the operation, makes some extended observations on adhesion of the coats of the vessel within the ligature, on the formation of a plug of coagulum on the cardiac side of the ligature, and on the effusion of lymph external to the artery.

Various circumstances in this case led to the examination of other cases of the same operation. These are arranged in a tabular form, and notice is taken of one striking and important result—viz. that the operation of ligature of the subclavian is the least successful of any on the great arteries, the deaths being about two-fifths of the whole number of cases contained in the table.

Here follows a table of fifty cases, showing the name of the operator, the date of the operation, the side, seat of the ligature, the period afterwards at which the pulse returned, the period at which secondary hæmorrhage occurred, the date of the separation of the ligatures, and the result of the case.

Mr. TAMPLIN alluded to the occurrence of the hæmorrhage on the second occasion, before the operation, and asked if means should not have been taken at that time to arrest it?

Mr. ARNOTT remarked, that it had been asked why nothing had been done to prevent the secondary, or rather the hæmorrhage, in the first instance, when it could not be called secondary. Before adverting to this, he would observe, that Dr. Warren was an able surgeon, as every one who saw him in England a few years ago must know, and that he was not likely to neglect any circumstance or point in an important case. But the truth was, cases of the kind were very difficult ones. Here is a dislocation; in reducing it, the heel of a boot is forced into the axilla. In five days afterwards something gives way under coughing, and a large effusion of blood takes place in the axilla and arm; matter forms and is discharged, and in a day or two, the coagulum being loosened, copious hæmorrhage takes place. The axillary artery is supposed to have given way: and had Dr. Warren known where it was injured, no doubt he would have followed the rule of practice in case of an injured artery—viz. have cut down upon it and tied it at the seat of injury. But he did not know, he was not certain, and then he did the next best thing,—he tied the artery above the swelling. In the remarks appended to the case, Dr. Warren adverts to several points as if they were new; he seems to suppose, for instance, that the fact of an artery uniting under a ligature without any internal coagulum taking place in the artery is so. But this circumstance has been long known in England, and though usually such coagulum does form, yet you may occasionally have firm union near to a collateral branch, even without any internal coagulum being formed. The doctor speaks of adhesion taking place under the ligature; Mr. Arnott was not sure if he understood exactly what was meant; but certainly no adhesion takes place under the ligature. The part included by the ligature is killed, it sloughs, and is separated by a process of ulcerative absorption. Then he dwells upon an effusion of lymph taking place around the artery, and supporting the internal coagulum, as if there was something novel in this, whereas this has been always, at least long known and taught here. Whether there is an internal coagulum or not, you always have lymph effused around the ligature, from the outer coat of the artery, upon the outside of it, and this tied, in the first instance unites the ends of the artery, which is cut through by the separation of the ligature. Mr. Arnott would not have made these remarks, but he did not think the Society should be allowed to adjourn under the notion that there was any thing new, or of importance, in the remarks of Dr. Warren, which only contained doctrines with regard to the union of arteries long known and taught in this country.

Mr. QUAIN observed, that there was a point or two of practical importance, connected with the valuable case detailed by Dr. Warren, to which he desired to direct attention. The first that he would notice had been alluded to by the last speaker, Mr. Arnott, who said that the "rule of practice," in case of bleeding from an artery, was to cut down to the vessel at the place where the blood issued from it, and tie the vessel above and below the wound, but that the case under consideration was an exceptional one. He (Mr. Quain) apprehended that the rule of practice mentioned by Mr. Arnott applied to wounds and recent cases. He was of opinion that this rule did not apply to cases in which there was inflammation, with extensive swelling, suppuration, &c. To cut down through such parts, in order to tie a vessel, altered as it would under such circumstances be, could scarcely be admissible.

The next point he thought deserving of notice, was the place at which the ligature had been applied to the artery. The vessel was tied beneath the scalenus muscle, and it was sought for in this position, because the operator could not reach it on the first rib. He was of opinion, that when there was any difficulty about placing the ligature on the vessel where it rests on the rib, it should be made a general rule to seek it beneath the scalenus, or after it has passed beyond the muscle, and before it approaches the tubercle on the ribs. This part of the artery is higher, much higher in some cases, and on this account more accessible (the clavicle being elevated) than where it rests behind the tubercle on the rib.

In illustration of the advantage of the course here recommended, he cited two cases, which occurred in the practice of Dupuytren. In one of these, the first (he believed) in which that surgeon operated on the subclavian artery, he placed the ligature on the part of that vessel which is behind the scalenus. The result was in all respects favourable; and an account of the case was published by Dupuytren. The second operation was performed a short time after that just referred to, and the intention was to tie the subclavian on the rib. In this instance a large nerve, with half the artery, were included in the ligature. The aneurism needle had been passed through the vessel. The patient died of hæmorrhage in a few days. The history of this case was not, that he was aware of, published by Dupuytren; it was communicated to the *Edinburgh Journal* by Dr. Rathertford, who was present at the operation. He referred to another case, in which Sir A. Cooper failed to tie the same artery on the first rib; and from these facts he drew an inference in support of the plan of operation above noticed.

With respect to the case to which Dr. Warren made reference at the end of his paper, that in which he tied the common femoral artery, in consequence of hæmorrhage after amputation of the thigh, and with a favourable result, he observed, that he could not regard that as the operation which afforded the fairest prospect of a successful termination in such cases. He had, in one instance, seen that operation followed by secondary hæmorrhage, which was arrested only by tying the external iliac artery. The unfavourable result of operations on the common femoral artery was shown in a paper he had the honour of communicating to this Society, from a friend of his, Mr. Hadwen. Operations on the external iliac artery were much more frequently successful.

Mr. FERGUSSON agreed in the remarks made by Mr. Arnott with respect to secondary hæmorrhage, and considered that the author had placed more importance than was necessary on tying the artery at a distance from the principal branches. Such a proceeding was by no means novel, as it had been a commonly taught doctrine ever since the time of Jones. He (Mr. Fergusson) was inclined to place less importance than was usually done on the internal clot, for ample proof existed that a vessel might close after the application of a ligature near a large branch. Mr. Porter, of Dublin, had tied, with success, the right carotid within an eighth of an inch of the innominate; and the internal iliac and other arteries, which had been tied with success, showed that arteries might close by adhesive inflammation, though immediately contiguous to such a stream of blood as passed through the innominate. He had a great respect for Dr. Warren, and spoke with great deference of that gentleman, but he could not help thinking that more had been made of this case than was necessary; he could not indeed see any practical deductions which were not well known to all practical men in this country. Many interesting circumstances had undoubtedly occurred in the case, but there was nothing which was not ordinarily alluded to in lectures on surgery. He referred to particularly, however, to two points in Dr. Warren's paper. One had reference to the conviction that the pleura was wounded. Now it did not appear to him (Mr. Fergusson) that the symptoms detailed made this a matter beyond doubt. Dr. Warren had spoken of this accident, as though it were not uncommon, but he (Mr. Fergusson) thought it did not often occur. Indeed, the only case which then occurred to his memory, was the one which was under the care of Mr. Colles, but in this instance the subclavian was tied on the right side, between the trachea and scaleni mus-

cles, whilst in Dr. Warren's case the vessel had been secured over the first rib; he thought the pleura was in little risk from the latter operation, even though the anterior scalenus might, as it did in this case, require division. The statistics appended to the paper would correct him (Mr. Ferguson) if he were wrong regarding the frequency of wounds of the pleura. The second point he wished to refer to, was the peculiar sound of the heart, which was mentioned—a sound which he might safely say was quite unknown to practitioners in this country.

MEDICAL SOCIETY OF LONDON.

Monday, Nov. 17, 1845.

DR. T. THOMPSON, PRESIDENT.

DR. A. B. GARROD read a paper on the use of animal charcoal as an antidote to various poisons, especially those derived from the vegetable and animal kingdoms. He first noticed the experiments which had of late been made on the effects of animal charcoal in removing bitter principles from solutions, and then detailed his own experiments on the subject, which led him to use it as an antidote. The results he arrived at were,

1st. That animal charcoal removed all the active principles from vegetable substances, if added in proper proportions, even in a solution of hydrochloric acid of the strength of the gastric juice, and at a temperature of the stomach, (100° F.)

2nd. That the compounds of the animal charcoal with the poisonous principle has no injurious action on the animal body, and, therefore, when animal charcoal is given with the poison, or before it has become absorbed, it will act as an antidote.

3rd. That animal charcoal will also form compounds with arsenious acid, and other mineral substances, which combinations are also inert, and that it is quite equal, if not superior, to the hydrated sesquioxide of iron, as an antidote to arsenious acid.

4th. That a certain amount of the antidote is required—for example, half an ounce for one grain of strychnia, or about one scruple of nux vomica; if less is given, the poison can act by its excess above the antidote.

5th. That it is peculiarly adapted to poisonous substances whose activity depends on a small amount of inactive principle, as opium, nux vomica, aconite, belladonna, stramonium, hemlock, &c.

6th. That the antidote itself has no injurious action on the system.

Dr. Garrod proposes, that in cases of poisoning we should remove as much of the poison as possible by the use of emetics or the stomach-pump, and then give a large quantity of the animal charcoal, diffused in

warm water; if emetics are given with the antidote, sulphate of zinc would be preferable, as the animal charcoal would itself destroy the emetic property of ipecacuanha. He also suggests that perhaps animal charcoal would prevent the action of the poison of rabies, syphilis, poisons of serpents, &c., if applied in the form of a poultice to the part which has come into contact with the poisons. The charcoal Dr. Garrod used was bone black, from which all the earthy matter had been removed by maceration in hydrochloric acid, and common bone black, prepared by Mr. Morson, Southampton-row, and the vegetable charcoals were comparatively inert.

Monday, Nov. 24.

DR. WILLSHIRE related a case of tubercular disease of the lungs, complicated with severe hæmoptysis, and gangrene of some portion of pulmonary parenchyma. The patient was a shoemaker, aged fifty-two, who had previously been troubled with cough and inability to lie on the right side in bed, but had been going about his ordinary avocation until the week before Dr. Willshire saw him. For six days the patient had spit up as much blood each day as to fill about three-parts of a chamber utensil. On the 6th, when he was first seen, he was labouring under considerable prostration and great difficulty of breathing, and could scarcely move, cough, or speak, without hæmoptysis ensuing, and so much so as to prevent any detailed examination. Under the circumstances it was conceived proper to treat the symptoms without any very particular reference to pathological causes, which, in fact, the condition of the patient, at the time, set a bar to discovering. Accordingly, he was cupped between the shoulders to six ounces, a blister was applied to the sternum, and two grains of the acetate of lead, with half a grain of opium, ordered to be given every two hours, until the bleeding ceased, or griping pains came on in the bowels. In the meantime, he was directed to drink barley-water, containing as much vinegar as he could be persuaded to take in. The above means had the desired effect, the bleeding soon ceasing. The sputa now became of dirty green, and here and there of a coffee-brown colour, and most offensive in odour. The breath of the patient was extremely fetid, disgusting to himself and to the attendants, &c., and the patient was seited, propped up, between the open door and window, so extreme was his desire for fresh air. The sputa continued "gangrenous" for some time, and afterwards assumed a purely phthisical character, when the man expectorated two pieces, one of considerable size, of "cretaceous" or "calcareous matter." The after-treatment con-

sisted in the administration of the acetate of lead with opium, opium alone, the tincture of cinchona, digitalis, hyoscyamus, &c. The man died twelve days after the day he was first seen. A post-mortem was refused by his daughters. Dr. Willshire remarked, that in all probability a cavity existed, traversed by a septum, along which had passed a blood-vessel. Gangrene occurred of or involving that septum, and by which the hæmoptysis had its origin. The expectoration of cretaceous matter was also to be noticed, since Louis and some others disbelieved in its occurrence. But he drew especial attention to the effects of the remedies, more especially of the acetate of lead and opium, since in one or two late cases, occurring on the Continent, of gangrene of the lung, &c., it had been thought great and especial benefit had been derived from this combination, in one case, if not in two cases, a cure having been accomplished by it; at least so it was asserted. During the *relation* of the case, several of the pathological connexions between pneumonia and gangrene were alluded to by the author.

The second case was that of a woman, 40 years of age, of irregular and intemperate habits, and between four and five months advanced in pregnancy. She had fallen down suddenly in a fit of apoplexy, and Mr. Dunn found her lying on her back, on the floor, in a state of insensibility; the general surface of the body, as well as the extremities, were quite cold; pulse at the wrist scarcely perceptible; heart's action extremely feeble; with low, stertorous, and irregular breathing. Cataplasms of linseed meal, well covered with flour of mustard, were immediately applied to the nape of the neck, the spine, and to the soles of the feet. A stimulating draught of ammonia was administered with difficulty, and she was warmly covered over with blankets. After a time, but by slow degrees, a slight reaction followed, and the pulse became more developed. A turpentine injection was then thrown up, and grain doses of calomel given every four hours. A blister was applied to the nape of the neck, and iced water to the forehead. She rallied so far the next day as to be able to be roused for a minute or two, but immediately relapsed into a comatose state. It was then observed that she was perfectly hemiplegic on the left side, but the excito-motory phenomena were still intact. On the following day she showed symptoms of restlessness,—drawing up her right leg, and throwing about her right arm, often raising it up to her forehead and right temple, as if in pain there;—such were her only indications of consciousness, and of remaining voluntary power. A cupping-glass was applied to the right temple, and five or six ounces of blood abstracted, but

without any apparent benefit; on the contrary, she became afterwards more comatose. On the fourth day from the attack, while in this state, abortion took place, and Mr. Dunn found both the fœtus and the placenta in the bed. No hæmorrhage followed; the fœtus had been dead for some days, and she herself expired about ten or twelve hours after its expulsion.

On a post-mortem examination, the vessels of the surface of the brain were gorged with dark black blood; there was great congestion, and on slicing down the cerebral substance, innumerable were the bloody spots observed. The left lateral ventricle presented nothing unusual; the right was distended with a coagulum of blood, which was beginning to assume a fibrous appearance, and giving the impression of its having been extravasated some time. In removing it, the plexus choroideus and vessels at the bottom of the ventricle were torn, nor could the breach whence the blood had issued be made out.

Mr. Dunn considered the act of abortion the point of interest in the case, as involving the consideration of the physiology of parturition. Many similar cases are on record. Dr. Cheyne, in his cases of apoplexy and lethargy, gives one in which the mother gave birth to a living child at the full period of congestion, while in a state of coma nearly approaching to perfect apoplexy, and in which one of the ventricles was found filled with coagula. Such cases seem to render the fact indisputable, that the parturient functions of the uterus can be performed perfectly, by reflex motor action alone, through the medium of the true spinal system. To this point he wished to direct the attention of the Society.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Nov. 29.

BIRTHS.		DEATHS.		Aver. of 5 yrs.
Males...	663	Males...	486	Males... 491
Females...	614	Females...	477	Females... 472
1277		963		963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.

Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James ..	(Pop. 301,326)	136
NORTH—St. Marylebone; St. Pancras; Islington; Hackney	(Pop. 366,303)	174
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London	(Pop. 374,759)	178
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar	(Pop. 393,247)	226
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich	(Pop. 479,469)	249
Total		963

LONDON MEDICAL GAZETTE.

Lectures.

LECTURE ON

ABSCESS OF THE TIBIA,

*Delivered in the Theatre of St. George's
Hospital, Nov. 19, 1845.*

By SIR B. C. BRODIE, BART.

I SHALL not make any introductory observations to the course of lectures which I am about to deliver, further than these,—that on this, as on former occasions, I do not pretend to give any systematic course, but to select various subjects in which I suppose you will feel interested, and such especially as you will find to be of importance in surgical practice. If I do not enter into the consideration of abstract questions in physiology and pathology, it is not because I regard these subjects as unimportant, but because I think it still more important that in the few lectures which I shall deliver I should contribute as much as I can towards making you useful to the public and to yourselves as good practical surgeons.

The subject that I shall take for the present lecture, is one of considerable interest, namely, the formation of abscess in the interior of the tibia.

I need not tell you that bones are organized like soft parts; that they have the same apparatus of arteries, veins, nerves, and cellular tissue, and that they have super-added to these the unorganized phosphate of lime. Having the same tissues as the soft parts, they are liable to very much the same diseases, but then the characters of these diseases, their symptoms, progress, and treatment, are much modified by the presence of the unyielding earthy material which I have mentioned. Inflammation may take place in bones, as it does elsewhere; it may go on to suppuration, and abscess may form in their interior, as it does in the interior of other organs. But there are these points of difference—an abscess formed in a bone cannot very readily come to the surface, so that it may remain pent up for an indefinite period: the soft parts will stretch, bones will not, and the consequence is, that an abscess situated in the latter is attended with much greater pain than that which occurs in the former. The patient's sufferings are consequently more severe, and they are protracted for a very much longer period.

I am not aware that I can explain to you better what I know on the subject, than by relating some of the cases on which my knowledge of it is founded.

In the year 1824, I was consulted by a 941.—xxxvi. Dec. 12, 1845.

young man, 24 years of age, under the following circumstances:—There was a considerable enlargement of the lower end of the tibia, but the ankle-joint admitted of every motion, and was apparently sound. The skin was thin, tense, and closely adherent to the periosteum. There was constant pain in the part, generally of a moderate character, but every now and then it became excruciating, keeping the patient awake at night, and confining him to the house for many successive days. It made his life miserable, and his nervous system irritable: one effect of which was that it spoiled his temper, and thus produced another set of symptoms in addition to those which were the direct consequences of the local malady. The disease had been going on for 12 years. He had consulted a number of surgeons respecting it, and had used a vast variety of remedies, but had never derived benefit from anything that was done. Instead of getting better, he every year became so much worse. I tried some remedies without any advantage, and at last recommended that he should lose the limb. Mr. Travers saw him with me, and agreed in this opinion. Amputation was performed, and the amputated tibia is now on the table. You will see how much the lower end of it is enlarged, and that the surface of it presents marks of great vascularity. The bone in the preparation is divided longitudinally, and just above the articulating surface there is a cavity as large as a small chesnut. This cavity was filled with dark coloured pus. The inner surface of it is smooth. The bone immediately surrounding it is harder than natural. The examination of the limb explained all the symptoms: there was an abscess of the tibia, stretching the bone in which it was formed, or rather, if I may use the expression, trying to stretch it, and thus causing the violent pain which the patient suffered. On observing these appearances, I could not help saying, that if we had known the real state of the disease, the limb might have been saved. A trephine would have made an opening in the tibia, and have let out the matter. It would have been merely applying the treatment here that we adopt in the case of abscess elsewhere. You open a painful abscess of the arm with a lancet; you cannot open an abscess of the bone with a lancet, but you may do so with a trephine.

About two years after the occurrence of this case, I was consulted by another patient, 23 years of age, who had an enlargement of the upper end of the tibia, extending to some distance below the knee. He suffered a great deal of pain, the part was very tender, and there were all the symptoms of chronic periostitis. I made an incision over the part, dividing everything down to the

bone, and found the periosteum very much thickened. There was a new deposit of bone under the periosteum, softer than the bone of original formation. This operation, as in other cases of chronic periostitis, relieved the tension and the pain, and the patient was supposed to be cured. However, about a year afterwards, in August 1827, there was a recurrence of the pain; the enlargement of the tibia, which had in some degree subsided, returned, and it continued to increase. In the enlarged tibia there was one spot a little below the knee, where there was exceeding tenderness on pressure. I need not describe the symptoms more particularly; it is sufficient to say, that they bore a very close resemblance to those in the last case: the only difference being that, as the disease had been of shorter duration, the pain was less severe, and that the tibia was affected in the upper instead of the lower extremity. I concluded that there must be an abscess in the centre of the bone, and applied the trephine to the tender spot. I used the common trephine made for injuries of the head, which, having a projecting rim or shoulder, would penetrate only to a certain depth. However, it enabled me to remove a piece of bone of sufficient thickness to expose the cancellous structure. Then with a chisel I removed some more of the bone. Presently there was a flow of pus in such quantity as completely to fill the opening made by the trephine and the chisel. It seemed as if the bone had been, to a certain extent, kept on the stretch by the abscess, and that, as soon as an opening was made into it, it contracted and forced up the matter. The patient was well from that time; the wound healing very favourably, and he has never had any return of the disease.

Some time after this I was consulted by a gentleman who had an enlargement of the lower end of the tibia. He suffered constant pain, but every two or three weeks there was an exacerbation of it, and it was then very excruciating, almost intolerable. These attacks sometimes lasted two or three hours; sometimes one or two days. This patient when he came under my care was 34 years of age; he traced the disease back for eighteen years, and stated that it began in the following manner: on going to bed one evening, he felt a sudden pain in or just above the ankle-joint: the next day there was a swelling in this situation, he was laid up with inflammation, and two abscesses burst in succession, but afterwards healed. He continued well for some considerable time, and then he was again seized with pain in the ankle. This pain was not constant, but occurred at intervals. Sometimes there were several months during which he was quite well. (These points are worthy of notice with respect to the diagnosis, as I

shall show you presently). After some years, however, the pain was never absent, and he got into the state in which he was when he sought my advice. On examining the ankle I found the tibia considerably enlarged. The motion of the joint was perfect, but there was one tender spot on the inside of the bone that seemed to indicate the seat of an abscess. I applied a trephine here, and penetrated into a cavity large enough to receive the end of the finger. There gushed out a quantity of matter, perhaps a drachm, or more. The inner surface of the cavity was exceedingly tender, so that he could not bear the introduction of the finger, or even of a probe. On the following day there was a good deal of inflammation in the neighbourhood of the part in which the operation was performed; in the course of a few days an abscess formed, which burst externally just below the ankle, and then the inflammation subsided. The opening made by the trephine became filled up with granulations, and the wound healed favourably. This took place many years ago; I have seen the patient every now and then since, and he has continued perfectly well.

I have had two cases of this kind under my care in this hospital. One was a boy, who had a considerable enlargement of the lower end of the tibia, attended with a great deal of pain. I trephined the bone, and let out nearly half an ounce of matter. The other was a man, whose case I will give you a little more in detail. His name was Mowbray, and he was admitted in October 1838, being then 24 years of age. He had an enlargement of the upper end of the tibia, extending to the distance of $2\frac{1}{2}$ inches below the knee. The circumference of the leg at this part was about an inch more than that of the leg of the other side. The skin over the enlarged bone was tense, and there was a blush of dark redness on the inside. He said that six years ago there took place some enlargement of the head of the tibia, attended with a dull pain. Leeches were applied, and some other treatment was had recourse to; I know not what. The pain continued for about six months, it then subsided, and he became quite free from it, until about three months before he came to the hospital, when it returned, and the bone began to enlarge. The pain at the time of his admission was so severe that he could not sleep at night. It affected his health; he had lost flesh, and could take little or no food. I concluded that there was probably an abscess in the tibia, but as the disease had only been of short duration, I thought it might be better to treat it as if it were merely chronic inflammation in the first instance, having recourse to some other remedies before I performed the operation. I prescribed, therefore, calomel and opium, sarsaparilla,

and iodide of potassium, one after the other. At last, there being no amendment, I applied the trephine at that spot where the bone appeared more tender than elsewhere, and thus exposed an abscess, which contained two or three drachms of pus. The relief was immediate, and soon afterwards the patient left the hospital cured.

I will mention another case. In the year 1841, a young lady came to consult me on account of pain in the lower end of the tibia. It began in the spring of 1835, when she had an attack of what appeared to be inflammation in that bone. The pain was at first confined to the lower end of the tibia, but afterwards she had, in addition to it, other pains, apparently of a nervous character, extending up the limb to the hip. She was of an hysterical constitution, which might, perhaps, make the diagnosis of the disease a little more difficult, the hysterical pain being mixed up with the other. However, I found her having occasional attacks of most severe pain in the lower end of the tibia, the bone being enlarged and tender to the touch; and, after a most careful examination, I was satisfied that there must be an abscess in the bone. Accordingly, I recommended the application of the trephine. She could not then stay in town, and, either because her surgical attendant in the country did not accord with me in opinion, or because she would not submit to it, the operation was not performed. She dragged on a very uncomfortable existence for four years more. In the interval she was married, travelled abroad, had various opinions, tried different remedies both here and elsewhere, but nothing afforded her any relief. Last August she again came under my care: the tibia was then very much enlarged; at times she was quite free from pain, at other periods she had severe attacks of it, so that she could not sleep at night. I was still of opinion that there was a collection of matter within the tibia. Mr. Travers and Mr. Key saw the patient with me, and it was agreed that I should perforate the bone with the trephine. Accordingly I performed the operation. The bone was excessively vascular, so that there was a good deal of bleeding; and, towards the end of the operation, a quantity of what appeared to be sero-purulent fluid gushed out from beside the trephine, mixing with the blood. At the bottom of the bone removed by the instrument there was a cavity that would just receive the end of the finger, and from which the fluid had escaped. After this she had considerable pain for some time, but evidently of an hysterical character. She went into the country, and I have been just now informed that the wound has been for some time healed, and that she is free from all her former

symptoms. The piece of bone that was taken away is upon the table; it is more hard and compact than it ought to be just above the ankle, where, in the natural state, there is a mere cancellous structure. You will perceive on its under surface, one corner of the cavity in which the sero-purulent fluid was lodged.

Since I first published some observations on the subject, in the year 1832, I have the satisfaction of knowing that similar cases have been treated successfully in the same manner by other surgeons. Mr. Liston has given me an account of two such cases, which occurred in his practice, and I have in my possession the written statement of a third one, in the hospital at Lincoln.

Now what are the circumstances that would lead you to suspect the existence of abscess in the tibia? and supposing it to be probable that such an abscess exists, how are you to proceed to relieve it?

When the tibia is enlarged from a deposit of bone externally—when there is excessive pain, such as may be supposed to depend on extreme tension, the pain being aggravated at intervals, and these symptoms continue and become aggravated, not yielding to medicines or other treatment that may be had recourse to—then you may reasonably suspect the existence of abscess in the centre of the bone. You are not to suppose that there is no abscess because the pain is not constant; on the contrary, it very often comes on only at intervals, and in one of the cases which I have related there was, as I then mentioned, an actual intermission of seven or eight months. After the disease has existed a certain number of years, indeed, the pain never entirely subsides, but still it varies, and there are periods of abatement and of exacerbation. The combination of circumstances which I have described will fully justify you in making an opening into the bone with a trephine. But how will it be if you are mistaken? This will not often occur, but if it should, really the taking out a circle of bone can be of no consequence; no injury follows the operation—it is unattended with danger. The operation is a very simple one. You expose the surface of the bone, and make a circular opening with a trephine at that part where there seems to be some tenderness and some pain on pressure. One principal thing to be attended to is that you have a proper trephine. You do not want so large an one as for the cranium, and it must be somewhat differently constructed. Those which lie on the table are made for the purpose. One is of very small diameter, but generally it is quite sufficient. The common trephines are made with a rim or shoulder, and if there be much enlargement of the bone, they will not penetrate deep enough to reach

the abscess. It is true that you may break away the bone afterwards, by means of a chisel, but the operation may be more easily performed with a trephine having no shoulder; which will at once penetrate to the abscess, however deep it may be, and render the chisel unnecessary. The after-treatment is as simple as possible. There may be some pain for a day or two, and especially, as in the case I last mentioned, if the patient be an hysterical female, there may be hysterical pain afterwards; but all that is required is to maintain the general health, and lay on some simple dressing: the bone soon granulates, the space is filled up by a sort of fibrous substance, and the wound cicatrises.

But what would happen if you were not to perform the operation? The patient may continue in torture, as I have already told you, for eighteen years, losing all the best part of his life; or a worse event than that may take place. The preparation which I show you is one of the oldest in the Museum. I attended a patient who laboured under various diseases; there were tubercles in the lungs, and vomice; dead bone in the ribs, and some other local complaints which I forget. Besides all this, he had an enlargement of the lower end of the tibia, attended with excessive pain—pain, indeed, hardly to be borne, and which came on in paroxysms lasting for many hours, and then in some degree subsiding. By and by an abscess appeared externally, in the neighbourhood of the enlarged tibia, and then the pain ceased. Under this complication of disease the patient sank, and died; and on examining the body I found an abscess in the centre of the tibia. One effect of the abscess had been to cause absorption of the cartilage of the ankle-joint. It might have made its way into the joint, but it took another course; and if you examine the preparation, you will perceive on one side of the tibia a round aperture, by which the matter escaped, and by which the external and internal abscesses communicated with each other. It is plain from this, that such an abscess cannot exist for many years without the joint being endangered. In the year 1830, a young gentleman, about thirteen years of age, came under my care. He had just returned from Paris, where he had had an attack of inflammation of the bone and periosteum of the tibia, for which he had been under the care of the late Baron Dupuytren. The inflammation terminated in necrosis. I removed some portions of dead bone, others exfoliated without any operation, and for three or four years pieces of bone continued to come away, none of large size. Among the sinuses that were open, there was one a little below the knee-joint; I could not ascertain whether bone had

come from it or not, but it closed, and the patient appeared quite well. In the year 1835 or 1836, however, I was consulted by him again, on account of some pain in the upper end of the tibia. Whenever he walked, the knee-joint swelled, becoming full of fluid. I applied a splint, kept him quiet, and he seemed quite to recover. I then left off the splint, and allowed him to walk about as usual. The result was, that in the course of two or three days the knee was again filled with synovia. On a blister being applied, the fluid was again absorbed, then reappeared again on exercise. Taking these circumstances into account, and remembering that there had been pain for some time in the upper end of the tibia, and formerly a sinus leading to the centre of the bone, I thought it very probable that the knee-joint was only occasionally affected in consequence of some disease in the neighbouring portion of the tibia. Mr. Keate and Mr. Liston saw the patient with me, and agreed in the opinion that it would be prudent to perforate the head of the tibia with a trephine. Finding, as well as I could, the most tender spot, I performed the operation, and out gushed three or four drachms of matter. There was no pain afterwards; the wound gradually contracted and healed, and now, when the patient walked, there was no swelling of the knee. The operation was performed in 1837, and I have seen the patient occasionally ever since, and know that he has had no return of the complaint. But is it possible to doubt that, if the state of things I have described had gone on, the knee-joint must have been destroyed? What would have happened if recourse had not been had to the operation? A case occurred in this hospital, not exactly similar, but sufficiently so to enable me to answer this question. A man of the name of Hendrow was admitted, in February 1837, with the upper end of the tibia enlarged just below the knee-joint. There was an opening leading down to the centre of the bone, and a probe passed into it came in contact with a piece of bone that appeared to be dead and loose, so that it was plain that a piece of bone in the centre of the tibia had exfoliated and formed an abscess, which had afterwards made its way externally. But that which renders the case interesting as connected with the present inquiry is this, that whenever the patient took exercise there was an accumulation of fluid in the knee-joint, just as in the last case. The swelling disappeared on the joint being kept quiet; and the motion of the joint was perfect, or nearly so. It seemed plain that there was a piece of dead bone in the centre of the tibia, which was somehow or other doing mischief to the knee-joint. The course to be pursued was evident. I

applied a trephine so as to enlarge the opening through which the probe had passed; it penetrated into a cavity in which there lay a piece of dead bone, about the size of a horse-bean, which was at once removed. Unfortunately, the poor fellow, whose health had been in a bad state previously, had an attack of erysipelas, and died. I took particular care to examine the knee-joint, and I have the notes of the dissection before me. The whole upper part of the tibia was increased in size from a deposit of scabrous bone on the surface. The cavity from which the dead bone had been extracted was of the size of a large cherry, had a smooth internal surface, the bone around it being somewhat harder than natural. From this a sinus extended up to the knee-joint, and opened into it just at the anterior part of the spine of the tibia. There was no suppuration in the joint. The cartilage covering the head of the tibia in some places remained perfect, but only in narrow stripes; in other parts it had degenerated into a substance something like condensed membrane; in others the only vestige of it was a thin membranous substance—so thin that you could see the bone through it; and in others the bone of the tibia was completely exposed, but not carious. The bone of the tibia was harder and more compact than under ordinary circumstances. It was curious that the condyles of the femur had suffered also, though in a different manner. The bone, instead of being harder, was softer than natural, so that you might cut it with a knife. The cartilage adhered imperfectly to the bone; it could be peeled off, and in some places it had begun to ulcerate. The softening of the condyles of the tibia I have no doubt was the consequence, and not the cause, of the disease; for you will observe that all bones in a state of inaction lose a great part of their phosphate of lime. After compound fracture, when the patient has been long confined, the bone will actually become as soft as a scrofulous bone, so that you may cut them with a knife.

The three last cases show that it is not safe to leave an abscess in the lower end of the extremity of the tibia beyond a certain time; that the joint is always in danger, and that the perforation of the bone is the only remedy. Even if you were mistaken in your diagnosis no harm can arise from the operation. Nay, it is a question whether good may not arise under certain circumstances from taking away a piece of bone, where there is chronic inflammation in it, even though there be no abscess. The following very remarkable case will illustrate this last observation. A young gentleman, who lived at Brixton, was brought to me by Mr. Crowdy, a practitioner of that place, with violent pain in the middle of one arm, the bone

itself being enlarged in that part to which the pain was referred. Some remedies were tried, which I need not enumerate, without any benefit. The pain continued, and I began to suspect that there might be an abscess in the centre of the bone. Under this impression I proposed cutting down upon it, and making an opening with the trephine, so that I might remove the matter, if there were any there. The operation was performed; the trephine penetrated to the centre of the bone, but no matter escaped. I persevered, but still there was no matter, and at last the instrument penetrated completely from one side of the bone to the other. The bone was very hard and compact, and it was as much as the trephine would do to run it through. I thought that I had made a blunder, and that there being no abscess the operation would not be attended with any benefit. The next morning the patient had an attack of pain almost as severe as before the operation, but it did not last long, and he never had any pain afterwards. The wound healed, the relief was complete, and I heard of the patient not long ago as having continued quite well. I presume that this was a case of chronic inflammation of the humerus, and that taking out the piece of bone from the centre, probably partly by relieving the tension, and partly by a discharge of matter from the bone, unloading the vessels, accounted for the relief which the patient obtained from the operation.

CIRCUMSTANCES WHICH RENDER AMPUTATION OF THE NECK OF THE UTERUS UNJUSTIFIABLE.

1. WHENEVER the indurated or malignant deposit, or ulceration, extends beyond the neck into the body of the womb, the operation is indefensible.

2. Where the disease of the cervix is thus limited, if the pelvic glands or adjacent cellular membrane are enlarged by deposition, or have been long indurated, the whole of the disease cannot be removed, and therefore any attempt at excision would be blameable.

3. The immobility of the uterus is an insurmountable objection.

4. Vascular congestion of the womb and ovaries is at least a reason for delay. Excision, in such a condition, will probably be attended and followed by dangerous hæmorrhage.

5. Serious affection of the general health, confirmed "cancerous cachexia," phthisis, or organic disease of important viscera, are positive prohibitions.—*Dr. Ashwell on the Diseases of Women.*

CLINICAL LECTURES

Delivered at University College Hospital,

By DR. C. J. B. WILLIAMS, F.R.S. &c

[Taken in Short-Hand by our own Reporter, and revised by the Professor himself.]

LECTURE X.—July 10, 1845.

*Case of chronic dysentery, with perforation of the colon and intervisceral abscess.—**History; formation of a tumor over the liver, containing air: Diagnosis—Prognosis—Treatment—Death.—Post-mortem examination, with remarks:—On the pathology of the intervisceral abscess.—On the nature of chronic dysentery, and its relation to tuberculous diseases.—On the arrested tubercles in the lungs: their quiescence in warm climates.—Chronic dysentery the consumption of tropical climates.*

WE have another post-mortem examination to notice, a case which had several features of interest, and which in many respects was unusual. It is that of William Roberts, and being pretty instructive throughout, I shall read the most essential parts, as reported by Mr. Grundy.

"Aged 40, admitted Monday, June 23, of tall stature, sanguine temperament, but now of sallow complexion. He is married, and has one child. His habits and modes of life have been tolerably regular; he has, however, occasionally indulged in alcoholic drinks to intoxication, but at very long intervals of time, not oftener than once in five or six months. When on board a ship, he always had a pint of wine, beside ale, allowed him daily, but he states that he never took more than two or three glasses. He was formerly of a very cheerful disposition, but latterly, on account of disagreements with his wife, his spirits have been rather low. He is a native of Scotland, and lived in Glasgow twenty years, following the trade of a blacksmith, and latterly of an engineer. He then came to London, and was employed as an engineer in a manufactory in the Westminster Road. Was often during that time engaged in the engine-rooms of steam-packets on the Thames; afterwards he was engaged as engineer on board the Great Western, bound for America. He continued in this service five years; he then joined the Lord William Bentinck steam-ship, bound for Calcutta, and intended to ply between that place and Suez, on the Red Sea. He continued with this vessel until the beginning of April last, at which time he was obliged to relinquish his post on account of illness. He set out for England immediately, and, after calling at several places, arrived here

in the middle of last month, and has since been living in lodgings in Somers Town. His father is living at a good old age. His general state of health has been exceedingly good; he has been a strong, powerful man, and has always carried a tolerable amount of flesh. Weight 12 stone.

"Seventeen years ago, when in Glasgow, he had an attack of dysentery, but got well in a fortnight, and does not know that he suffered any inconvenience therefrom. He has been subject to slight pains in the limbs sometimes, which he attributes to rheumatism.

"The present attack commenced in the middle of March last, whilst in Madras, with severe pain in the bowels, attended with constant vomiting and purging, pains in the limbs, and great prostration of strength. The matter passed by stool was accompanied by slime and blood. He was attended by a medical man, who gave him some medicine which afforded some relief, but the purging has continued more or less until the present time. Soon after the violent symptoms abated, he had a great deal of pain in the right hypochondrium; leeches were applied with relief, and he took mercury, but it did not salivate him; the pain never entirely left him. The feces have been frequently streaked with blood, but he never saw any pus in them. He has been seen by various medical men on his way to England, at Cairo, Alexandria, Malta, and Gibraltar; and at Southampton, also, where he remained for some weeks, and was told at that time that he had an abscess of the liver. Here he had something to rub over the painful part on the right side, and soon after the rubbing, about three weeks before admission, this part began to swell, became red, and very tender." On his arrival in London, about a fortnight ago, I was requested to see him by Mr. Mountjoy, who was formerly a pupil of this College. The description of his state corresponded very much with that which has now been read, and the swelling which is there mentioned was a prominence below the front margin of the right ribs, and protruding forwards the two lower ribs: the size of the prominence might perhaps have exceeded that of a hen's egg.

Upon the first examination this swelling appeared solid, but there was no considerable dulness on percussion, either at it or around it, and, in fact, there was so little general enlargement of the liver, that I doubted much that there was an abscess of that organ. Below the situation of the swelling, there was a good deal of tympanitic resonance, not perhaps quite as much as might be expected if the intestines were completely in contact with the walls of the abdomen, but it was very fairly resonant. This deterred me at the time from deciding at once that it

was a case of abscess of the liver. He was not in a state to admit of active treatment; his pulse was very weak, he had profuse sweats, and other symptoms of a hectic state, and the purging was still very urgent and distressing. Poultices, therefore, only were applied to the tumor, and he was directed to take a pill of sulph. of copper and opium (of each a third of a grain), with a little extract of hop, three times a day. This had the effect of restraining the diarrhoea, and when I saw him ten days afterwards he was feeling more comfortable in himself, having been completely relieved of the dysenteric symptoms, and his appetite having distinctly improved. But the tumor was now more prominent, it also presented a blush of redness on the surface, and on touching it it was obvious that the character was quite changed. Instead of being hard and equally resisting, as at first, it was soft and yielding; it fluctuated, and contained some liquid. It was clear, whatever its source, that there was an abscess, tending to point. From its situation, immediately on the margin of the liver, I could not avoid the supposition that it might be an abscess of the liver, and as it would be necessary either to open it, or, if it opened spontaneously, to have it properly dressed, and as he was not in a situation in which he could be well attended to in his lodgings, I recommended him to come to the hospital. The account of his state on admission is thus recorded:—

“The skin is cool, dry, and not perspiring; of a sallow hue. There is great prostration of strength, and emaciation of body. There is no œdema of the legs, nor ascites; his limbs ache a good deal, chiefly on account of being obliged to lie in one position on his back. Intellect perfectly clear, but he sleeps badly; no pain or giddiness in the head; countenance is pale, and expressive of long-continued pain. The cheeks somewhat sunk, of a sallow colour; he feels weak about the loins. Pulse small and feeble; mouth dry and clammy; tongue slightly furred; appetite middling; rather thirsty; no nausea or vomiting. The abdomen is small and contracted. On and a little below the margin of the right ribs, in the region of the liver, are two elastic prominences,” or, rather, it may be said to be one prominence projecting at two spots. In the upper one there was a feeling of elastic softness, and the integuments were rather red and tense, like the pointing of an abscess. This projection had a puffy feel, like that of a sac containing air. It yielded more readily to the finger than if it had contained liquid. But we have other evidence that the contents of this sac were aeriform, and not liquid. It yielded a tympanitic sound on percussion; and by pressure on one of these tumors the

contents could be dispelled inwardly with a crackling or gurgling noise, distinctly showing the passage of bubbles of air from one part to another. The way in which I first detected it was this,—by pressure on the lower tumor the upper one became swollen, and at the same time a gurgling sound was produced. “The part is extremely tender, and occasionally painful, the pain coming on chiefly in the night. The integuments around this prominence are œdematous. The bowels are now in a comfortable state, there being only about one motion daily.”

When I saw him at his own lodgings, the tumor was obviously pointing to the surface, and the contents appeared to be chiefly liquid. I am not sure whether they were altogether liquid or not, but I detected no gurgling at that time. When he came to the hospital, and I made the examination from which the description is taken, it was quite clear that the chief contents of the sac were aeriform, and this made known to us more with regard to the nature of the disease. Here was a tumor, presenting at the upper part of the abdomen, and reaching through the walls quite to the integuments—for it was manifest that the integuments only separated it from the external surface—containing air; and it was certain that there was no communication between it and the lungs, because the stroke and the breath sounds were both healthy, and there was no indication of air being extravasated into the chest, or of a fistulous communication between the lungs and the tumor. The tumor, therefore, must have proceeded either from spontaneous decomposition (if such a thing ever takes place) in the cavity formed, or else from an unnatural opening between the intestinal canal and the cavity. I had no hesitation whatever in deciding that it was the latter; that whatever the tumor may have been originally, there was now a fistulous communication between some parts of the intestine and the cavity, and that through it air had freely passed. I mentioned at the time, and there is still, a doubt as to the manner in which this unnatural communication took place. I stated again and again to several of the pupils present, that the chronic dysentery, which we know is commonly accompanied by extensive ulceration of the colon, might have led to its perforation and the formation of an intervisceral abscess, and that adhesions had taken place around it to circumscribe it. That was one supposition. Another supposition was, that the affection was an abscess of the liver, which had opened into the colon and discharged a great part of its contents—that the air had passed backwards through the fistulous communication into the abscess—that the abscess had burrowed out of the liver, and had extended not only towards the colon,

but to the integuments of the body, pointing outwards. Either supposition would have accounted for the symptoms at that time.

I had not made up my mind as to which was the true view, but latterly I was inclined to the supposition that it was an abscess of the liver which had opened itself into the intestines, and had subsequently become filled with air, and formed the appearance which we have been examining. There was, however, this objection to such a view: in all the cases of abscess of the liver that I have seen, there has been at the same time a pretty extensive enlargement of the organ, and this was my great reason for hesitating to call this a case of abscess when I first saw, it. I did not find signs of any very extensive enlargement of the liver, and the parts below, although rather tender, and resistant to pressure, sounded hollow on percussion. But I knew that it has been stated by some writers, particularly those who have described abscess in the liver in warm climates, that circumscribed abscesses sometimes take place without enlargement of the bulk of the liver. It was in deference to their authority that I admitted that this might be abscess of the liver.

The previous history would warrant one supposition quite as much as the other; it would correspond quite as much with the idea of there being a fistulous opening formed by a perforation of the colon, as with the idea of there being an abscess of the liver terminating in the way supposed. It has been particularly pointed out by Dr. George Budd, that secondary abscess of the liver is apt to occur in chronic dysentery. In these cases pus, or some of the bad matter from the ulcerated surface of the intestine, passes through the intestinal veins into the substance of the liver, and there forms a focus of fresh inflammation and suppuration. It appears that these secondary abscesses of the liver do occur very frequently as a sequel to chronic dysentery; therefore we might be warranted in expecting such a disease in this case. So, likewise, the other alternative that I mentioned has been known to occur—that is, ulceration of the intestine, extending through all its coats, causing perforation and the extravasation of fecal matter on the surrounding viscera; or this being circumscribed by adhesion, the result may be an intervisceral abscess.

As to the prognosis, it would in either case be unfavourable. With such a reduced state of the constitution as he presented from the beginning, with so much disease as there obviously was, destruction of the structure, both in the intestine and in the region of the liver, there was no expectation of permanent recovery; but I hoped that if an opening were made, and it proved an abscess

of the liver, that there might be some relief from the free discharge of its contents.

I need not go through the details after his admission to the hospital, for they presented merely an aggravation of the local symptoms, and a more distinct development of the signs of gas contained within the unnatural sac, manifested, not only by the gurgling sound and the feel of the prominence, but also by metallic tinkling being present in a very distinct form. I applied the stethoscope on one side of the prominence, and, by making him cough, I could hear the air pass in and out, accompanied by the usual tinkling echo—such a sound as always accompanies the passage of air into large cavities contained in the body. I showed you, too, that this metallic tinkling might be produced by an extraneous sound, by gentle percussion on the opposite side of the sac. When I saw him out of the hospital, and found an apparently pointing abscess, I was anxious to get him into the hospital, with the view of having the sac opened, hoping that thereby the abscess might be healed, as is sometimes the case. But as soon as I found that there was air in the sac, not only was the prognosis modified, but the line of practice. The sac, if it were an abscess, had obviously discharged its contents; it did not, therefore, require this exit to be given to it, and it was a matter of question whether any considerable advantage would arise from opening a sac in this state. It might do good by giving exit to foetid sloughy matter contained in the sac, and preventing air from becoming pent up: but, on the other hand, there would result an offensive wound, and the continued discharge of foetid matter, contaminating the air which he breathed. If the sac had had no other opening, then we should have had no doubt of the propriety of giving it an outward opening, but inasmuch as there was an opening to the intestine at that part, there was no pressing need for making an external one. We entertain a reluctance to recommend operations in cases of this description, in which no lasting benefit is likely to result; but it was his own earnest wish that it should be opened; indeed he was so impatient, that it is stated in the report, "If the tumor is not opened, he expresses a decided intention of shortly doing it himself." On the 4th of July, after a distressing night, Mr. Quain made an opening into the anterior prominence, and the result of this was, that "the walls immediately collapsed from the escape of some very foetid gas, and a small quantity of dark-coloured matter, with pus, was also discharged. The part was ordered to be covered with a piece of oiled lint and a poultice."

On the treatment I need not dwell long. The sulphate of copper and opium restrained the diarrhoea, and soothed pain and irritation; and with a view of keeping up his strength, and increasing his appetite, I added some quinine. His diet was nourishing, and as his weakness increased we allowed him wine liberally. He sank gradually, and died on the 7th.

The body was examined twelve hours after death. It was extremely emaciated, and the abdomen was sunken and contracted. The opening was gaping, with its edges dark and sloughy. The integuments around were of a livid colour. The muscles of the chest were of a natural appearance, but the abdominal recti were livid in colour—almost black. This is from the action of the foetid gas on the colouring matter of the blood in the muscles; sulphuretted hydrogen blackens all these animal matters to a very intense degree.

On opening the abdomen, the liver was observed projecting two and a half inches below the ensiform cartilages, and two inches below the margin of the right ribs. This, I may observe, corresponded with a part of that resistant feel which was communicated in the neighbourhood of the tumor, and corresponded very exactly with my opinion that there was some liver behind the tumor.

On raising the sternum, and dividing the right internal mammary vein, a quantity of muddy red fluid escaped, looking like blood mixed with pus, presenting, in fact, much of the strawberry-cream appearance which arises from a mixture of opaque whitish matter with blood. This, under the microscope, was found to contain numerous pus globules, beside irregular blood corpuscles.

The omentum was found closely adherent to the right lobe of the liver and abdominal peritoneum of the right side. On cutting through this, an irregular cavity was exposed, containing a quantity of dark, grumous, and excessively foetid matter. The anterior superior surface of the right lobe of the liver formed the back of the cavity above; in front, the cavity passed beyond the margin of, and between, the two lower ribs, and projected under the skin of the walls of the abdomen. The ribs had been completely denuded by the abscess, which had made its way in front of them; and here its sac, containing air, with some liquid, extended in front of them as well as being behind. This cavity was bounded posteriorly and inferiorly by the omentum, and quite at the lower part by the colon, in which there were two openings situated at the junction of the ascending with the transverse arch, and through which the contents of the gut could freely escape. One of these openings was a

quarter of an inch in diameter, the other a little smaller. The upper surface of the right lobe of the liver, which formed part of the wall of the abscess, was of a dark livid colour, partly covered with a layer of soft grey lymph; in it, also, were two excavations into the substance of the liver, about three quarters of an inch in length, admitting the end of a finger, containing pus, and lined with tough irregular membrane. A branch of the hepatic vein terminated abruptly in one of the excavations, and contained purulent lymph. The liver itself was pale, and its texture rather coarser than usual, but not otherwise diseased. Between the gall-bladder and the under surface of the liver was a cyst containing inspissated bright yellow bile. The gall-bladder itself contained healthy bile, of the consistence of treacle. The weight of the liver was 3 lbs. 1 oz.

The coats of the ascending and transverse colon were very much thickened and puckered from former inflammations and the remains of numerous ulcers. The coats of the colon were of a grey stone colour, and in some parts of a dark livid hue. There was no appearance of redness. The mucous membrane of the descending colon was pale, but was thickened, and also studded with small ulcers. Peyer's glands were raised from yellow tuberculous deposit in their interior, and some of them were in an ulcerated condition. The mesenteric glands were enlarged, and firmer than usual.

The spleen was pale in colour, and contained a little osseous matter in the course of some of its vessels. Both the kidneys were pale in colour, their capsules slightly adherent. The left weighed four ounces, the right five ounces. In the left there was one of the common cysts, containing muddy-brown fluid.

There were very extensive old adhesions of the pleura on the left side, many of which were firm and tough; on the right side there were some adhesions at the apex, and the base of the lung on this side was partly adherent to the diaphragm; no recent lymph. The upper portion of the left lung was consolidated, and its surface irregular; within the consolidated portion was a cavity capable of containing a large filbert, the walls of which were formed by dark grey condensed pulmonary tissue, with bands stretching across containing fibrous matter in their interior. The cavity itself contained a little dark opaque grumous matter. There was one cluster of softer and lighter coloured tubercle at the lower part of the upper lobe, another at the root of the lobe. The apex of the right lung was firm, dense, puckered, and nodulated on its surface. The tissue was quite solid and very dark, with the remains of yellow tuberculous matter in its

terior. Near the middle of the lower lobe there were two very recent tuberculous formations. (By recent I mean that they were of a lighter paler colour and softer consistency. There was not that quantity of black matter, nor the toughness, which characterises old tuberculous formations.) The heart was small but healthy, weighed $7\frac{1}{2}$ ounces.

The case is explained by the post-mortem examination; it leaves no difficulty in the pathology, and it most distinctly shews that the view which I had first taken, and which I was inclined latterly to abandon, was the correct one. That the disease was chronic dysentery connected with an ulcerated condition of the large intestine; that this ulceration had gone on to a perforation of the colon; the perforation had caused an extravasation of feculent matter in the abdomen; that a partial peritonitis had been formed around it so as to circumscribe the further diffusion of matter, and the contents of the intestine being poured out from time to time in a circumscribed cavity, a sort of fistulous abscess was formed, first probably containing more liquid than air, but ultimately as the communication became more free containing more air; the progress of the abscess depending on the irritating quality of the matter, both that effused from the intestine, and the foul matter secreted by the serous surface with which it came in contact. All the results receive a very ready explanation. The liver was found partaking of the disease; in fact, there literally was abscess of the liver: but this was not the original disease. That it was not originally an abscess of the liver, communicating with and emptying itself into the colon, was quite clear from several circumstances. One of these was, the small size of the abscess. There were two small abscesses, one of the size of a walnut, the other not so large, not reaching far into the substance of the organ. Another proof was, that there was so little disease in the other part of the liver; indeed the other part was comparatively free from disease, though it was coarser in texture than usual. A third reason, and a chief one, was, that this small hepatic abscess bore all the marks of having been produced by irritation from without carried inwardly, and not of irritation carried from within outwardly. The outer part of the abscess was largest, in fact exhibited more of the appearance of what might be called ulceration of the external surface than an abscess formed by suppuration in the interior. The last argument, if it is necessary to bring argument in such matters, but the inspection was enough to carry conviction to any one accustomed to make post-mortem examinations—is this, there were two abscesses obviously not connected with each other, but both in communication with the

large sloughy sac on the surface of the intestines.

It is clear from these considerations, and others that might be added, that the mischief in the liver was consecutive; but the fact that the liver suffered at all, and that an abscess had been made upon the anterior surface of the liver, will explain in some degree the doubt in which this case was involved during part of the time. The abscess was actually in the liver as well as upon it; but there was not enlargement enough of the liver to indicate that its abscess was the primary disease. If another such case should present itself—but that is not likely, for they are rare—I should adhere to my original opinion, and look upon the case as more essentially connected with intestinal than hepatic disease.

Now a word on the subject of the nature of the disease. Dysentery is the common destructive disease of warm climates; comparing it with the destructive diseases of this climate it stands in the same relation in warm climates as pulmonary consumption does in cold climates.

Another point asserted by some, although not so thoroughly made out as is desired by statistical returns, is, that the same class of subjects who fall victims to phthisical diseases in these climates are apt to become the subjects of chronic dysentery and some analogous affections of the liver in warm climates. I take the case before us to be an example. But was there any proof of a tuberculous diathesis in this man's case? If we look back to his past history, we shall find an utter want of anything like it. There were no chest symptoms, no cough, no shortness of breath, no emaciation previously to his attack of dysentery. The amount of disease which was found in his lungs would have been detected had we thought it necessary to examine the chest, but so much disease had he of another kind, and so entirely was he free from all chest symptoms, that I did not think it necessary to examine it. If I had it would have made no alteration either in the treatment or the prognosis. It would not have been influenced by any treatment that could be employed; it was latent disease—disease not in active progress, but its presence shows that the man was disposed to tuberculous disease; and this will serve to illustrate part of the history of chronic dysentery. You have heard me say with regard to chronic bronchitis that this inflammation has no natural tendency to become chronic. The natural tendency is to run a certain course, to end by a certain effusion, and to terminate more or less by this effusion. When inflammation becomes chronic it is because it is not of a healthy kind, but is modified by some caco-plastic condition in the part or in the

system. It is modified by its products being scarcely if at all organisable. When these inorganisable matters are thrown out, instead of being easily converted into the proper material of tissues, they accumulate, and lead to further irritation, obstruction and destruction of the textures, and there result thickening, induration, ulceration, and the various complicated lesions which we meet with in chronic inflammation. That is just the state of things that we find in chronic inflammation of the colon, and chronic dysentery is in fact literally to the intestinal canal precisely the same thing as phthisis pulmonalis to the lungs; there is no essential distinction between them, and if you wanted further proof of this I would refer you to something found in the dead room—that is, the positive presence of yellow tuberculous matter in Peyer's glands. There might be some question as to whether the grey thickening about the ulcers of the intestines was the same kind of matter as that which affects the lungs of the phthisical subjects; but there is no question as to yellow tuberculous matter wherever it occurs, and here it was found in the intestines. I maintain that it is nothing more than the same disease occurring in different structures, modified in appearance by the character of those structures, and in its effects, by the functions they perform. We know that even extensively ulcerated intestines may be healed—may be cicatrised; and if patients can survive the irritation, exhaustion, and discharge, they may recover from an extraordinary amount of disorganising lesions. In the lungs, the caco-plastic deposit, and the ulcers to which it tends, are, as it were, surrounded by textures, and are got rid of with far greater difficulty than from the intestines; and moreover, being seated in textures of high vascularity, they tend to injure not only the respiratory organs but the system, by injuring the blood which in full volume passes through these organs.

After this we can understand why the disease should be more fatal if it attacks one organ than if it is seated in another. But I need not say much with respect to the difference of the fatality of the disease. They are both very destructive maladies, and the present case exemplifies this; yet even here we can see traces of the curability of both diseases when they occur to a moderate extent; many ulcers in the intestines were cicatrized, and death was obviously induced by the perforation resulting from the great extent and depth of the ulceration at one part. The tuberculous lesions in the lungs, too, presented all the appearance of being limited and quiescent. Observe how this case exemplifies the comparatively harmless character of pulmonary tubercles in a warm climate. Here was a man, before the attack

of dysentery, in apparent health, performing active duties, yet even at that time in all probability the tubercles were present at the apex of both lungs, entirely destroying the proper parenchyma of that portion of the lung.

One point more out of several which this case illustrates. I pointed out in the dead-room the remarkable contrast between the lower parts of the lung and the apex; this so much diseased; those so free. We meet with no such a contrast in recent cases of phthisis, nor where phthisis has supervened on other diseases. Generally where there is much tubercle at the apex, there is some also in the lobes; the only exceptions are cases of partial inflammation which may develop them at one part and not at another. But pneumonia of the apex is not a common disease; and pneumonia affecting both apices is extremely rare; and no symptoms in the history would countenance the notion that such a cause of partial tuberculous deposit had existed here.

My own view of the case is this. That there was disposition to tuberculous or caco-plastic disease in this man is proved by the sequel. During his voyages in the Great Western he was exposed to transitions of temperature and occasional cold, under the influence of which tubercles were developed in the lungs; perhaps with no more symptoms than a common cold, and therefore without attracting particular attention; but most probably there were as usual tubercles in other parts of the lungs, as well as at the apices. Before there was time for these tubercles to advance to further destruction of the lung, the man went his voyage to the East Indies, and under the influence of warm climate the pulmonary disease was arrested; the scanty and scattered tubercles were altogether absorbed; whilst those larger at the apex of the lung had passed into a quiescent state, and were undergoing changes leading to their removal. But had the caco-plastic diathesis ceased? By no means. By change of climate, and exposure to a new class of exciting causes, its influence was transferred to a new seat. Dysenteric inflammation attacked the bowels, and chronic dysentery—that consumption of hot climates—that phthisis of the intestines, became established; and although the derivation which it caused may have added to the relief and quiescence of the pulmonary disease, yet the constitution suffered in proportion to the disorganisation of the bowel, until the perforation, inter-visceral abscess, and other disasters which we have recorded, gave the finishing stroke in the work of destruction. This history suggests many other interesting considerations; but our time has expired.

Original Communications.

CASES OF PELVIC INFLAMMATION
ENDING IN ABSCESS.

By JOSEPH BELL,

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THE names bestowed on the disease which I have the honour of introducing to the notice of the members of this society to-night,* I find have been various at different periods in the history of medicine. At one time it was designated inflammation of the womb; subsequently it was called milk deposits, taking place in the pelvic cavity by metastasis; and recently has been described under different new appellations.

We find Galen and others speaking of abscess of the womb following inflammation of that organ. Guillemeau, in his work entitled "*De la Grossesse et Accouchement des femmes*," published in 1643, has devoted a chapter to the consideration of inflammation of the womb or some part of it: he says, "Il advient quelquefois, par un mauvais accouchement, que la matrice s'enflamme et s'orgueillit (comme disent les femmes), ce qui se fait ou en toute sa substance ou en son corps ou en son col, ou en quelque partie. Telle inflammation en quelque endroit de la matrice qu'elle soit est sans matière ou avec matière."

In the year 1746, says Morgagni, "the genital organs of a woman who died of slow fever about the thirtieth day after parturition were brought to me. On dissection, the right ovary and tube were agglutinated to each other and to the neighbouring colon, and were partially destroyed by an abscess which I suppose had been the principal cause of the fever, and of the fatal termination." Mauriceau has also described the disease: he considered that it was caused by insufficient lochial discharge: he was the first I believe that noticed particularly abscess of the ligaments. La Motte held an opinion respecting

the cause of these abscesses nearly akin to that of Mauriceau: he has recorded many cases. Puzos describes the affection under the name of "*Depots laiteuse*." He considered these deposits to be owing to metastasis of the mammary secretion: besides several others, Levret, Raulin, Deleurge, Delaroche, Doublet, and Gastelier, have described these collections under similar terms and entertained the same views as to their nature: the last author contends that, "*Les metastases laiteuses sont incontestables; je les ai vues comme je vois le soleil nous éclairer; et je ne doute pas plus de leur existence que de la clarté du jour en plein midi*." This doctrine of metastasis was contradicted by Petit, and we find MM. Dance and Husson, in 1827, relating some cases of the disease under the terms "*engorgemens inflammatoires qui se développent dans la fosse iliaque droite*."

Passing over several other writers on the subject, we come to the memoir of Paillard, on "*des abcès développés dans la fosse iliaque à la suite des couches*," (*Journ. Hebdom.* 1830).

In 1835, M. Martin, jun. published his work on "*des depots des annexes de la matrice qui surviennent à la suite des couches*."

In 1837, M. Lebatard wrote a thesis on the same disease, which he designates "*tumeurs phlegmoneuses de la fossa iliaque interne*." In the same year, M. Piotay likewise selected the same subject for his thesis, which he entitles "*Essai sur les tumeurs phlegmoneuses de la fossa iliaque développées dans les annexes de l'utérus*."

Among other continental writers who have since published cases of the disease, I may mention M. Grisolle, who, in 1839, wrote a most excellent account of the affection, illustrated with several important and interesting cases: his paper appeared in the *Archives Générales de Médecine*, tome iv. 3d series.

In 1841, M. Bourdon published an admirable paper in the *Revue Médicale*, tom. iii. pp. 5, 61, and 321, entitled *Tumeurs Fluctuantes du petit Bassin*. Since these papers appeared, numerous cases and observations on the disease have been published in continental periodicals, and systematic works on Midwifery. Very recently,

* Read at the October Meeting of the Glasgow Medico-Chirurgical Society.

M. Marchal, in his excellent treatise on "*Absces Phlegmoneuse intra pelviens*," has devoted a large portion of that work to the consideration of abscesses of the pelvis occurring after parturition.

In our own country, though little notice (if any) has been taken of these abscesses by systematic authors on midwifery, yet the attention of the profession has been directed to them recently, by several writers, under different titles. In the 25th volume of the *MEDICAL GAZETTE*, we find a brief notice of a paper read at a meeting of the Liverpool Association, by Mr. Wainwright, on "abscesses forming within the pelvis after labour." Dr. Dogherty, in the 22d volume of the *Dublin Journal of Medical Science*, has given an excellent description of the disease under the name of "chronic inflammation of the uterine appendages occurring after delivery." Dr. Churchill, in the 24th volume of the same journal, has published a number of cases under the name of "inflammation and abscess of the uterine appendages." Dr. Kennedy designates the disease "secondary inflammation." Dr. Lever, in *Guy's Hospital Reports* for April 1841, has narrated several cases with very judicious comments under the title of "pelvic inflammation, with abscess, occurring after delivery."

Even at the risk of being considered tedious, I have given some of the following cases in detail. This plan I am certain will be more satisfactory to those who may feel interested in the subject. I recollect very well, at the time when some of these cases were under my care, of the dissatisfaction which I felt on reading the brief summaries of the majority of the cases then published. In fact, they were utterly useless, either as tending to facilitate a study of the phenomena of the disease, or to aid in its treatment.

There are a few points in which the cases that I am about to relate differ from those recorded by others, but these differences will be pointed out in the sequel.

CASE I., May 10th, 1838.—Mrs. Anderson, æt. 26, of a dark complexion—is much emaciated; face flushed; about six weeks since was delivered of her first child after a tedious labour,

during which she was attended by a midwife. On the seventh day after delivery she was able to get up, but shortly afterwards she states she had a "weed," accompanied and succeeded by severe pain of abdomen. In a few days her sufferings abated a little, but again returned, and have continued since with temporary remissions; her strength has become gradually diminished, and she has now become subject to hysterical fits; she now complains of sickness, and vomits frequently; pulse 112, is feeble; tongue furred. In the right iliac fossa she feels very considerable pain, which is increased on pressure; a circumscribed tumor exists in this place, or rather between it and hypogastrium: this tumor, when slight pressure is made over it, does not cause much uneasiness, but when it is firmly pressed down in the direction of the pelvis she experiences great pain, which is particularly felt about the sacrum; surface of body covered with perspiration, of which she complains much; bowels are constipated, and she experiences great pain after having a motion from them: no vaginal discharge on making a vaginal examination. A swelling of considerable size exists in the upper part of the vagina; it is posterior and inferior at its lower part to the os uteri, with which it has no connexion, but in running the finger up along the cervix uteri the swelling seems as if it were a bulging out on the body of the uterus; it extends up towards the fundus, and backwards in direction of the rectum, to which it appears connected. The os uteri is tilted forwards and rather to the left side of the pelvis: on pushing the uterus upwards she feels much pained, and motion is communicated to the tumor in the hypogastrium. A No. 4 gum elastic bougie was introduced easily into the cavity of the uterus; it was withdrawn and a No. 6 put in: the ends of bougies were distinctly felt striking against the top of the abdominal tumor: nothing came away when the instruments were withdrawn. The finger was now introduced into the rectum: this caused much pain: the tumor was felt firmly pressing on the bowel, and in endeavouring to ascertain the extent of the disease the walls of the intestine were penetrated: this was followed

by a gush of thin greenish-yellow matter having a most offensive smell.

This woman soon recovered her health, and has had at least two children since. At first, I considered her case to be one of those denominated by Sir Charles Clarke, and others, "Inflammation of the mucons membrane of the uterus, terminating in the secretion of pus," attended with contraction of the cervix. Under this impression the bougies were introduced as that eminent physician recommends. No matter coming away, and the point of the instrument being found so distinctly at the fundus of the uterus, it was evident that whatever the character of the case might be the interior of the organ was not implicated, and that I had formed a wrong diagnosis. The examination per rectum was then instituted, when its coats were accidentally ruptured, and the true nature of the case ascertained. I have no doubt but that in a very few days the abscess would have been evacuated spontaneously by the same channel.

I have reason to believe that on former occasions I have committed the same error in diagnosis as I did on this. A careful perusal of the cases narrated by Sir C. Clarke and others under the above mentioned name, convinces me that many of these instances were similar to that which I have now related. For example, the distinguished writer to which I have referred mentions a case in which the matter was evacuated per rectum.

In the year 1819, a lady aged about 40, who had been married to a second husband about six weeks, was attacked with symptoms of inflammation of the uterus: the disease was treated in the usual way. The powers of the constitution were gradually diminished by the great degree of symptomatic fever, and the patient became daily more and more debilitated without any mitigation of pain, except that which was produced by the exhibition of large doses of opium; inability of making water, and of voiding the feces, next presented itself. An examination per vaginam being again made, the pelvis was found completely filled with an enlarged uterus, which was also perceptible above the pelvis Sedative injections, repeated doses of opium, and the warm bath, constituted

the chief part of the treatment. After some time, whilst in the act of voiding a stool, a sudden discharge of pus took place through the rectum of a most offensive kind.

Now had this been a case of purulent collection within the cavity of the uterus, it is difficult to conceive the nature of any temporary obstruction or contraction of the cervix, through which it would have been more difficult for pus to make its way, than through the walls of the uterus, the tissues lying between it and the rectum, and finally, the walls of the bowel.

Sir Charles, indeed, alludes to this himself; he observes, that something more than mere contraction of the cervix uteri must have taken place, or it is probable that the pus would have made its way through the natural opening, instead of in the circuitous mode by adhesion and ulceration.

There can be little doubt but that this was a case similar to Mrs. Anderson's.

CASE II., May 2d, 1840.—Mrs. M'Kay, æt. 35, of dark complexion, and of nervous temperament. On the 11th ult. she was delivered of her first child by the forceps; on the 13th, she had a rigor, followed by some febrile action, which was ascribed to the tense and painful condition of the mammae. On the 14th, she complained of slight pain about the lower part of the abdomen and over the iliac bones, and also of considerable soreness about the vulva. On the 15th, 16th, and 17th, her complaints subsided. On the 18th, she had a return of pain to the lower part of the abdomen, but it was very slight, and only lasted a few hours. On the next day she had no complaint, and continued to improve daily, so much so that my attendance was discontinued on the 23d, since which I have not seen her till to-day. She states that she was able to attend several days to her household duties, and that on the 31st she had gone bare-footed, and had washed her feet and legs in cold water before going to bed, in which she had several fits of shivering during the night; since then she has become gradually worse; has had frequent returns of shivering, followed by profuse perspiration, and has had severe pain over the whole of the abdomen, particularly at the lower

part. Her face is flushed; eyes animated; she complains much of pain in the right knee-joint, and also in the elbow; the pain darts into the former suddenly, remains for a few minutes, and then ceases; pulse 100; thirst considerable; tongue slightly furred; surface of body hot and moist; pressure over right iliac fossa causes considerable pain; bowels tardy, and still has some vaginal discharge.

Habt. Enem. Domest. q. s. et Habt. Extr.
Hyoscam. ʒj.; Pulv. Doveri, ℥iiss.
M. ft. mass et divid. in pil. xxiv. Capt.
ij. 4ta q. q. h. Fov. Hypogast.

3d.—Has not taken any of her pills; enema operated freely, but caused pain; had a restless night, being much disturbed by pain of the right knee; the pain was so acute as to cause her to scream out; it is now easier; tongue cleaner; she still feels chilly, and has perspired profusely; pulse 106; headache; is easily startled, and weeps without any evident cause.

Cont. Pil.

4th.—Rested well during the night; pains gone; pulse 96; feels much better.

6th.—Yesterday was still improved, and was able to be out of bed this morning; but about one o'clock p. m. she was seized with a most severe pain in the right iliac region; the slightest pressure on motion aggravates it very much; pulse 108; surface of body rather cold; she has had several slight rigors. An injection was administered as soon as I saw her, and a sinapism applied to the iliac fossa; the enema operated freely, but produced great uneasiness. Whilst the mustard was on the abdomen the pain extended up the whole of the right side to the mamma, and down along the left side to the umbilicus; the slightest touch caused the muscles of the abdomen to contract, which rendered the pain agonising; when, however, the pressure was made firmly, it relieved the pain, except over the part on which the mustard was applied.

Habt. B. Sol. Min. Morph. ʒj. et repet.
si dolor perstet post spat. hor. quatuor. Fov. abdom. assidue.

7th.—Has had several hysterical paroxysms during last night; globus; pulse 120; pain of the abdomen almost gone over the upper and middle regions, but continues at the right

iliac fossa, over which pressure causes great uneasiness; has vomited frequently during the night; tongue furred in the centre; pulse 114; has had four dark dejections attended with pain.

Admov. Hirud. xvij. reg. iliac dext.
postea catap. emoll. et admov. Sinapism. epigast.

Eodie vespere.—Pain greatly relieved after application of leeches, which bled well, but about six o'clock p. m. she was seized with a most acute pain immediately below the right mamma, causing her to scream; the pain continued fixed in the above spot during an hour, at the end of which it ceased, but immediately commenced in the right lumbar region and extended across the umbilicus. The slightest pressure causes extreme suffering, but firm pressure made gradually gives relief; when the hand is suddenly withdrawn the pain is also much aggravated; pinching the integuments of the abdomen has the same effect. Firm pressure made over the right iliac fossa does not relieve but increases pain, which is also augmented when she moves in bed. Bowels have been troublesome; since morning she has had four loose dejections; on these occasions the pain is so severe that she screams out.

Repet. Hirud. xij. et Hab. Sol. Mur.
Morph. ʒj.

8th.—Leeches bled well; pain greatly better, and is now confined to the right iliac and lumbar regions; pulse 112; skin cool and moist; face flushed; no vomiting; has had two loose dejections, when pain was much aggravated.

Repet. Sol. Mur. Morph. et Fov. Lot.
abdom.

Eodie vespere.—About noon some blood came away from the vagina; since this occurred she has felt easier; pulse 102; face still flushed; has no constant pain, but occasionally one of a cutting character darts from the sacrum to above the pubis; feels very sick, and starts during sleep, when she perspires profusely; globus.

Cont.

9th.—Had several hysterical paroxysms during the night; has only occasional pains shooting through from the back to the pubis; sickness continues; pulse 114; abdomen swol-

len and tympanitic; pain has returned to the right knee-joint, but is not severe; no dejection, and discharge scanty.

Habt. Enema Ext. Gum Assafoet. ʒj.; Aq. tepid lbj. Habt. Pil. Mass. Hydr. ʒss.; Ext. Hyosciam, gr. xij; Sulph. Quin. ʒj. M. ft. mass et divid. in pilul. xij.; capt. j. 4ta. q. q. h. To have some beef-tea.

10th.—The enema brought away a large quantity of flatus; abdominal swelling gone; was very restless during the night, and said to be incoherent; vomits frequently, and sickness is much complained of; tongue covered in centre with greyish fur; face flushed; countenance anxious; profuse perspiration; pulse 100; no pain felt in the abdomen except when pressure is made in the right iliac region; she has had three loose dejections accompanied with tenesmus, and pain and difficulty experienced on voiding urine.

Habt. Enema Amyli c. Tinct. Opii, ʒj. Cont.

11th.—Has had several sleeps during the night; pains of the abdomen occasional, but very transient, and do not always occur in the same spot; pulse 108; sickness abated and vomiting less; the mercurial fætor on breath; gums are tender and swollen; no dejection; urine passed with less pain and difficulty.

Intermit. Pil. et Habt. Infus. Calumbæ, Oj.; Tinct. Calumb. ʒij.; Capt. ʒij. t. d.

12th.—Felt very easy during the whole of yesterday till near midnight, when she became very feverish, and the pain returned to the lower part of the abdomen; pulse 96; some thirst; tongue more furred; had one scanty dejection, preceded and followed by severe pain; catamenial discharge ceased yesterday.

A vaginal examination (which was previously requested but refused), was now permitted. The os uteri felt soft and slightly tender, and pushing the organ upwards she experienced a good deal of pain through the whole pelvis; on passing the finger round the cervix at the posterior side, an immense enlargement (as it were a bulging out of the body of the organ) was felt; it filled the greater part of the pelvis, and pressed firmly on the rectum, to the walls of which it seemed to be

connected to some extent, as the finger could not be passed between them. When the finger was introduced into the rectum (a proceeding attended with much suffering to the patient), the tumor was easily felt, and yielded a sense of indistinct fluctuation; this was also felt at the lowest part of the tumor in the vagina. She would not consent to have a puncture made into it.

Habt. Pulv. Doveri, gr. xv. h. s.; for abdomen. To have tepid water injected frequently into the vagina, and to have a tea-spoonful of tincture of opium and a table-spoonful of starch per anum after each dejection.

13th.—Rested tolerably well last night; feels chilly, and has perspired most profusely; pulse 100; tongue improved; one dejection, accompanied with the usual pain, which, however, she thinks was mitigated by the enema.

Contr.

14th.—Some pains shooting through the bowels, from which she has had one passage followed by severe tenesmus, and pain in the pelvis.

Contr.

15th.—Feels much better; pulse 96.

Contr.

19th.—Since 15th, no change of any importance took place till this morning about 2 o'clock, when a gush of yellowish matter of the consistence of cream came away from the vagina; several folds of cloths, sheets, &c. were completely soaked; she has vomited twice since; pulse 76; tongue clean; feels easy; has had one dejection.

Contr. To have some port wine, arrow root, and animal jelly.

May 3d.—Has continued to improve rapidly since the last report; pulse 76; is able to go about the room; is gaining flesh; is troubled with globus; has had scarcely any pain since abscess burst; there is still considerable discharge from vagina.

Contr. et Habt. Pil. Galban. Comp. j. t. d. To wash out vagina with an astringent injection; (Sulph. Zinc. Acet. Plumbi, aa. gr. x.; Aq. Puræ, ʒiv.)

10th.—Has been doing remarkably well since the 3d until last night, when she was attacked with severe pain between the umbilicus and pubis; it is described to be of a twisting or wringing character; pulse 80; tongue

clean and moist; heat of skin natural; bowels regular.

Hab. Sol. Mur. Morph. ʒj. stat. et fov. abdom.

11th.—All complaints gone. From this period her recovery was uninterrupted; a few weeks' residence at the coast during the month of June completely restored her to good health, which she enjoys at present; she menstruates regularly, but has had no family.

The point to which I wish to draw your attention in this case is the absence of any tumor or hardness either in the hypogastric or iliac regions. A most careful examination of these parts was instituted daily, and if any such thing had existed I could not have failed in detecting its presence.

With regard to the combination of quinine and mercury which I ordered, I may mention that I have found such a combination exceedingly useful when I wish to bring the system speedily under the influence of mercury. The practice is by no means original; I have either seen or heard it recommended somewhere, but I cannot tell by whom.

CASE III., Feb. 4th, 1841.—Mrs. Cooper, a very delicate female, of dark complexion, æt. 24 years. At two o'clock on the afternoon of the 1st inst. gave birth to her third child; the labour was easy and natural. Was doing well till last night about six o'clock, when she was seized with a severe fit of shivering succeeded by a profuse perspiration, and severe pain in the lower part of the abdomen; pulse 120, easily compressed; considerable tenderness at the hypogastrium, and some tumefaction; slight headache; thirst; surface of body hot; no defection since yesterday; lochial discharge moderate.

Hab. Pulv. Opii, gr. ij.; Calomel, gr. vi.; M. et Ol. Ricini, ʒj. H. s., s. o. s.

5th.—Feels weak; pain better; bowels freely opened by oil; pulse 116; voids urine freely, but it is scanty and high coloured.

Admov. Ol. Terebinth. Calid. to the abdomen.

6th.—Complains of severe pain over the whole abdomen to-day, increased on pressure over the hypogastrium, but relieved by it over the rest of the

bowels; pulse 120; tongue clean and moist; headache.

Admov. Hirud. xij. Vulv. postea Catap. Emoll. Repet. Calomel et Opii ut antea.

7th.—Pain much relieved; pulse 96; tongue clean; leeches bled profusely.

26th.—A few days after the last report her pain returned, and has continued with intervals of remission; considerable febrile excitement has also continued; she now complains of great prostration; has exacerbations of fever in the evenings, and suffers severely after having a passage from the bowels; the pain shoots through the whole abdomen; she also complains of a feeling of weight and pressure about the lower part of the pelvis. On making a vaginal examination, the vagina felt hot and tender at its posterior wall, where a very considerable tumor or swelling existed; it also occupied some part of the right side of the pelvis; the uterus was not much enlarged, and had no unusual tenderness when touched: an examination by the rectum caused much pain; the tumefaction or swelling was readily felt through its walls; it felt soft and fluctuating. I proposed to open it per vaginam, but the patient would not consent.

In three days afterwards, when at stool, a large quantity of purulent matter was evacuated per anum. She recovered very well, but about six months afterwards she had a recurrence of the disease in consequence of being much fatigued and exposed to cold.

CASE IV., July 7th, 1842.—Mrs. Baxter, a stout active female, on 2d inst. was delivered of her second child; had no complaint till about ten o'clock this morning, when she was seized with a most severe pain in the lower part of the back shooting round to the hypogastrium; the pain was so acute that she could scarcely breathe; it is now somewhat abated, and is confined to the hypogastrium and right iliac region; it is much increased by pressure and motion; pulse 118, wiry; face flushed; skin hot; thirst; headache; mammary secretion scanty, and vaginal discharge almost gone. Yesterday afternoon she had sat up several hours, and had several slight shiverings; bowels easy.

E.V.S. ft. Sang. 3xvi.; Habt. Calomel, gr. iv.; Pulv. Opii, gr. ij. 8va. q. q. h.

8th. — Blood flowed freely, and caused faintishness; the first cup was much buffed and cupped, the others were not so; pulse 90; pain much better; tongue clean; milk returned, but lochial discharge less; no defecation.

Habt. Ol. Ricin. 3j; Tr. Hyosciam. 5ij.; Aq. Cinnamom. 5iss. M.

9th. — Continues to improve; pulse 90; bowels opened twice.

10th. — Was called suddenly to see her at 9 p. m.: complains of pain of the lower part of the abdomen, greatly increased on pressure; was seized about half an hour since; pulse 120, hard; face flushed; considerable agitation; surface hot, but moist; tongue dry and furred in the centre.

E. V.S. ft. Sang. 3xij.; Admov. Hirud. xij. Hypogast. Habt. Enema Commun. et repet. Calomel et Opii ut antea.

11th, 3 o'clock, A. M. — Was sent for in consequence of no abatement of pain, which had now extended over the whole abdomen, but at the upper part, whilst slight pressure aggravates its intensity, firm and continued pressure gives relief; this was not the case, however, at the hypogastrium, where pressure increased the suffering very much; the pain extended round to the back, and down to the sacrum and to the inside of the thighs; pulse 108, soft and compressible. The blood taken yesterday was slightly buffed and the leeches had bled well; enema also operated freely. There has been some little vaginal discharge of an offensive character.

Contr. Pulv. et Admov. Ol. Terebinth. Calid. Abdom. et Habt. Sol. Mur. Morph. 5j. st.

13th. — Has gradually improved since last note; pulse 86; very little pain complained of; gums slightly affected by mercury; feels very weak.

Inter. Medicament.

August 8th. — A few days after the last report I was again called to visit her in consequence of the return of pains, particularly of the right leg and the iliac fossa; leeches were applied to the latter several times, but with very temporary relief; she soon became hectic and emaciated, and the pain and

stiffness of the limb increased, and was accompanied with inability to move or extend it. She had also much pain on the evacuation of either bladder or bowels, particularly the latter; she had also her sufferings occasionally increased by attacks of abdominal neuralgia. About the 30th ult. the inside of the right thigh began to swell, and at the same time a tumor was felt in the iliac fossa of this side. On a vaginal examination this tumor was found to extend down into the pelvis, which it partially filled at its posterior and right sides; at its posterior side it became confounded with the body of the uterus. The swelling of the thigh continued to increase, and two days since there was observed a circumscribed tumor at the crural ring, in front of the femoral vessels. This now is about the size of a hen's egg, and fluctuates; a puncture was made into it with a curved and grooved needle, on withdrawing which a quantity of thin purulent matter escaped; this continued to come away during six weeks, the tumor of the iliac fossa and vagina gradually disappearing. The patient gradually recovered, and at the end of three or four months was in apparent good health.

CASE V., 4th Feb. 1843. — Mrs. C. of small stature, fair complexion; at 11 o'clock on the 1st inst. gave birth to her fifth child after an easy labour; was doing well till to-day: she complains of chilliness and pains about the knee-joints, and uneasiness about the lower part of the abdomen, which is increased on pressure; pulse 108; skin hot; tongue moist and clean; lochial discharge scanty.

Habt. Pulv. Doveri, 3j.

Eodie vespere. — Feels no better; about an hour since had two severe paroxysms of pain shooting down from the pelvis to the foot of the right leg; pain of the right iliac fossa much worse; has also pain of the abdominal parietes, but it is relieved by pressure; skin hot and moist; pulse 126; headache; tongue dry; she is very restless and uneasy; lochia very scanty.

Admov. Hirud. xij.; fos. iliac dext. postea. Catap. Emolliens. Habt. Calomel, gr. x.; Pulv. Opii, gr. iss. M. st.

5th. — Leeches bled well; pains relieved; pulse 167; skin cooler; tongue

moist; face slightly flushed; bowels freely opened; dejections of a dark colour.

Habt. Pulv. Doveri, ʒj.; Calomel, gr. xij.; Ext. Hyosiam. ʒj.; M. ft. mass. et divid. in pil. xii. Capt. i. 6ta. q. q. h.

6th.—Abdominal pain remains easy, but occasionally complained of fixed and continual pain in the right iliac fossa, particularly severe when pressure is made by the hand: pulse 90, soft; skin cool and moist; tongue clean, but rather dry; lochial discharge increased.

7th.—Yesterday afternoon was seized with severe abdominal pain, followed by two loose dejections; pain still persists, but is neuralgic; pulse 100; mercurial fætor on breath; feels sick, and inclined to vomit.

Habt. Pulv. Dover. ʒj.

12th.—Since the last note she has improved considerably; has only slight uneasiness and some stiffness in the right leg; and very little pain is caused by firm pressure over the right iliac region; pulse 78; feels weak.

27th.—On the 13th had a return of pain in the abdomen, this was relieved by an anodyne; the next day the pain extended to the whole of the right leg, and was very severe about the knee-joint, where it is still felt; she lies with the leg semiflexed, and severe pain is caused in the right iliac fossa and about the groin when she attempts to extend it; she has suffered much more pain on evacuating the bowels, which can only be emptied by the use of purgative medicine, as the pain is so great on giving an injection that this means of procuring motions has been suspended. About the 21st, a hardness of a circumscribed nature was detected in the right iliac fossa; this has continued to increase; it has no connection with the abdominal parietes, which can be freely moved over it. On a vaginal examination being instituted to-day, it was found that the tumor was connected with the posterior part of the pelvic walls, extending up the right side and forwards to the pubis; the uterus felt tender when touched, it was low down in the pelvis and pushed forward; the pulse is now 120; she is much emaciated and hectic. The treatment since the 13th has been slightly antiphlogistic;

topical bleeding; blisters and anodynes internally.

She was ordered now a nutritious diet with a little wine.

March 7th.—Nothing of importance occurred since the 27th till the 2d, when some tumefaction made its appearance immediately behind hip-joints. This gradually increased in size, and on the 5th distinct fluctuation was perceived. An opening was made into it to-day with a curved and grooved needle, when a few drops of pus and blood came away from the puncture. A common breast-pump was applied, which took away a large quantity of offensive purulent matter, which flowed more freely when the tumor in iliac fossa was pressed. From this the patient had a very slow and gradual recovery. Though tonics were freely given, and every care bestowed as to diet and regimen, yet it was nearly six months before she was able to leave her bed. She suffered much from diarrhœa and perspirations. She eventually recovered her health. I accidentally met her a few days since. She states that if she walks much, she still feels right leg sore and weak. She has had one child since attack, and had a good recovery.

I do not hesitate to admit that the two last cases were at first treated for uterine peritonitis. I was confirmed in this view from the amendment which followed for some days the antiphlogistic treatment. The recurrence and continuance of the patient's sufferings, along with the appearance of other symptoms, undeceived me. A vaginal examination at once determined the nature of the affection. Though I had been aware of this at the beginning of the attacks, yet I am not certain if I would have made any important change in the treatment, as it was equally suitable to both diseases.

Perhaps some persons may be inclined to consider these two cases to be instances of common psoas abscess, and that the disease had been going on insidiously previous to delivery. This notion I cannot entertain, as the patients had not the slightest pain or uneasiness, or any other symptom indicative of disease in pelvis or its neighbourhood, previous to their confinement.

CASE VI., Sept. 1843.—Mrs. M—,

æt. 24 years, has all the symptoms of hectic fever, and in abdomen there is a large tumor, occupying the hypogastrie and iliac regions; it reaches up to umbilicus and extends from side to side. Immediately below umbilicus it is connected to the integuments, which are inflamed; fluctuation is felt at this part, though not distinctly. An examination per vaginam did not elicit anything of importance. A portion of the tumor filled the greater part of the pelvic cavity posteriorly, and the uterus was pushed low down and to left side. It could not be satisfactorily ascertained whether or not it was connected with the swelling. The patient's principal complaints are now difficulty to void the contents either of bladder or bowels, and when she does obtain an evacuation from either it is with the greatest suffering. Pulse 120. About fourteen months since gave birth to her first child, which was still-born. A few days after she states she was seized with inflammation, from which she never fairly recovered; and that in a few days, she thinks a fortnight, severe attack of pain in right side occurred, and that the swelling was then detected in side, about the size of an egg. She has had a great variety of treatment, but it did not seem to have any check on the increase of tumor, which has gradually continued to enlarge, and to take a central position. Her feet and legs, about three months since, commenced to swell, and are still very œdematous. She has, during her illness, passed very little urine, and she affirms that on some occasions she made none for upwards of twenty-four hours. She has also been much troubled with alternate attacks of diarrhoea and constipation, her dejections being attended with severe tenesmus. Has also been subject to "weak fits," and a sensation of choking at the throat.

Two days after my first visit I made a puncture a little below umbilicus, where the feeling of fluctuation was most distinct; a considerable quantity of thin purulent matter came away. A compress and bandage was applied with some firmness.

About ten days after this puncture was made, it was found that very little matter came away from wound unless pressure was made, and as the patient's health was so much reduced a counter-puncture was made per vaginam,

through which the matter evacuated itself with great freedom.

From this time, though her recovery was gradual, yet it was exceedingly slow. The treatment which she got whilst under my care was stimulating, tonic, and nutritious. About six months elapsed before she was able to leave her house. Shortly afterwards she left the village of Barrhead, and I have not heard of her since.

This is the most chronic case I have met with; and though I have reason to believe that the disease had been treated as ovarian before I saw the patient, yet I am convinced more appropriate means could not have been employed. Antiphlogistics, succeeded by tonics and unstimulating diet, seemed to have been most judiciously selected and applied; still, however, in spite of these endeavours, the disease proceeded to the extent described.

[To be continued.]

NATIVE PHOSPHATE OF LIME AT LOGROSAN, IN SPAIN.

THE vein or rather deposit of phosphate of lime lies about half a mile from the village of Logrosan, and occurs in clay and slate, except the centre, where it is intermixed with quartz. It has been traced for about two miles, sometimes emerging above the loamy soil and at other times below it. In some places the bed of phosphate is ten feet deep, and in general is from six to seven feet wide. It may easily be traced by its general light straw colour, but the finer parts have a purple and white laminated and reniform structure, like some deposits of carbonate of lime. It is extremely phosphorescent when pulverized and thrown on ignited charcoal. As it contains no ingredient of organic life, it is presumed to be of primitive formation: it was first noticed by Mr. Bowles, in his account of his tour to Almaden. His statements were exaggerated by Spanish and French authors, who descanted very learnedly thereon, until Monsieur Proust reported, that whole hills were composed of it. Unfortunately, from his never having visited the spot, his remarks were clever but inaccurate. It has been ascertained, however, that the phosphate of lime does not exist in sufficient quantities to be available for agriculture, in case of any failure of bone-dust. It contains about 14 per cent. of fluoride of calcium: thus nature has here provided amply for that material which enters into the bones of animals."—*Murray's Spain.*

A CASE OF
 ULCERATION OF THE DUODENUM,
 UNSUSPECTED DURING LIFE,

IN WHICH THE GALL BLADDER WAS FILLED
 WITH A LIMPID COLOURLESS FLUID, AND
 CONTAINED 101 GALL-STONES.*

By C. J. ROBERTS, M.D.

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 Society, Physician to the Welsh Charity, and
 to the Adult Deaf and Dumb Institution.

EVERY candid practitioner will acknowledge, that it is by no means an uncommon circumstance to have patients seeking relief from symptoms apparently trivial, and indicative of but little serious mischief, but which in fact prove to be fore-runners of fatal disease. It is only after death we become acquainted with the cause of this fatal result; with the melancholy satisfaction of knowing, we had done every thing that our art tells us could be accomplished to afford relief.

The case I am about to relate was of this character; the only prominent symptoms being irresistible and constant vomiting, continuing unmitigated from the commencement of the attack until its fatal termination.

On Thursday morning, the 7th of March, of the present year, I was called up by my friend Mr. Doubleday, to visit a patient who had been suffering under violent vomiting ever since the previous Tuesday evening, and which had continued unrestrained, notwithstanding all his efforts to subdue it. The patient had been similarly attacked the previous Christmas; but the symptoms readily yielded to the employment of hydrocyanic acid and alkalis, and after a few days he returned to his employment, that of an Upholsterer's clerk, in his usual health. At this time, however, the remedy had ceased to be serviceable. A blister had been applied to the scrobiculus cordis equally unavailingly. Enemata had been employed usefully in relieving the bowels, but the last one thrown up had been rejected by the mouth, and was very evident from the castor oil which had been contained in the enema being distinctly seen in the matter voided. When I saw him he was in a state of collapse, and evi-

dently sinking, and my attention was principally directed to the rallying of his failing strength; and with this intent full and frequent doses of ammonia, and smaller quantities of brandy and water, were administered; but all was inefficient, and he sank and died at 2 o'clock, P. M. of the same day.

We were allowed to examine the body about 48 hours after death.

The body was much attenuated. On lifting the sternum, some slight adhesions of the left lung to the posterior portion of the pleura were found, but none were discoverable on the right; neither were there any tubercles. The heart was large and flat, and there was a considerable deposition of adipose matter on the pericardium. There was also a slightly increased quantity of the liq. pericardii; the internal structure of the heart was healthy; the stomach, enormously inflated, was lying very prominently forward; the convolutions of the intestines were glued together by lymph, but the connecting matter was neither in sufficient quantity nor consistence, nor firmness of structure, to warrant being called adhesions. The jejunum throughout its whole extent was much distended, while the calibre of the ilium was proportionately diminished; and at its lower third was so constricted as scarcely to permit of the passing of a swan quill; these intestines bore the marks of slow inflammatory action. At the constricted portion of the ilium a small cul-de-sac, about half the length of the appendix cæci, and similarly constricted, was found, having a valvular aperture into the intestine very much resembling those of the ureters into the bladder; it was empty. The colon was smaller than usual, and from the descending portion downwards had become so narrowed as to have lost all resemblance to its original character, and assuming that of the small intestines. On slitting up the stomach it was more covered with ecchymotic spots than is usual, which were of a very deep colour, and were continued through the pylorus into the duodenum. The coats of this bowel were ulcerated throughout its whole extent, and a distinct line of demarcation was visible where one intestine left off and the other began. The small intestines were much attenuated, and of so frail a texture as scarcely to bear

* Communicated by the author.

handling; and this was the more marked at the strictured part.

The liver was healthy, although somewhat smaller than natural. The gall-bladder was tensely full of fluid, and extruded some distance beyond the margin of the liver:—at its apex it presented the peculiar appearance of a small translucent vesicle, apparently formed by a rupture of the external and a protrusion of the internal coats through the fissure. On cutting into it, to our great surprise, rather more than four ounces of a perfectly limpid transparent colourless fluid escaped, resembling water, and we were so taken unawares that we permitted it to flow away without attempting to reserve any for chemical examination. The coats of the gall-bladder were as blanched as if they had been long immersed in water. There were found 101 gall-stones in the gall-bladder, and one was impacted in the gall-duct, just at the curve, or doubling on its exit from the vesica. This had evidently tended materially to the production of the vomiting. These gall-stones were of the size of large peas, and much bleached, as if from constant washing. The kidneys and bladder were healthy.

Instances of a number of gall-stones being found in the gall-bladder after death, without their having produced any irritation, or their presence being at all suspected during life, are by no means unfrequent; but their being accompanied by a total absence of the biliary secretion is very rare. Some of the older writers upon medicine allude to it, but they mention it as happening very seldom, and consider its occurrence very unusual. Fernelius, in his work, *De Universâ Medecinâ*, Lib. vi. Chap. ix. *De humoris differentiiis*, speaking of bile, "*præter naturam*," says,* "*Una est vitellina, Græcis λεκιθοειδης appellata, quam flava a naturæ modo deficiens profert, dum caloris non naturalis acrimonia torretur, ut ex fulvo igneum calorem et extenui substantia crassiorem dissipatione consequatur, quæ et colore et crassitudine omnino vitellorum crudorum ovorum speciem offerat quibus nomen sibi ascivit.*"

Haller records the case of a woman who was dropsical, and had a scirrhus

liver, but whose gall-bladder was filled with a similarly colourless fluid instead of bile.* This case and Haller's differs in this particular; he found bile in the ductus communis choledochus, while we could not detect any, in any part of the liver, or its ducts.

† Dr. Graves and Stokes detail a case in the Dublin Hospital Reports, as having occurred in their practice in the Meath County Hospital, in which the gall-bladder was filled with a perfectly transparent viscid fluid.

‡ Andral mentions this altered condition of the biliary secretion, and says it is commonly connected with fatty liver; but it frequently presents itself without there being any visible alteration in the liver itself, and in these cases the fluid principally consists of albumen and water.

In a practical treatise on the Diseases of the Liver,§ by Dr. Thomson, there is an allusion to this changed appearance in the colour of the bile. "It is described," he says, "as rather more tenacious than serum, sometimes as a watery or albuminous fluid, sometimes ropy, and in its physical qualities exactly resembling the white of an egg;" and he adds, that it is an accumulation of the secretion from the parietes of the gall-bladder. He, however, contents himself with this mere allusion, and does not give us any symptoms by which we may be enabled to detect its presence during life, nor any circumstances under which it is secreted.

The subject of this case was a thin, spare man, 59 years of age, and who had never been attacked by any severe illness during his life. He never apparently suffered from hepatic derangement, nor was ever jaundiced; he could lie equally well on either side, and had never complained of pain in the region of the gall-bladder, notwithstanding a calculus was firmly impacted in the duct, which was the main cause of the gastric irritation. He had occasional attacks of indigestion, which lasted a few days, and then passed away; and these were by no means frequent, and had but recently happened.

* *Opuscula Pathologica, Historica*, No. 14, page 80.

† *Dublin Hospital Reports*, vol. 5, p. 108.

‡ *2de Partie, Deuxième Volume, Anatomie Pathologique*, p. 612.

§ Page 19.

The only circumstance which renders this case worth recording, is that the change which had taken place in the biliary secretion is of rare occurrence, and seldom mentioned by authors.

HEALTH OF WOMEN AT THE PERIOD OF THE "CHANGE OF LIFE."

MURET, in his work on the *Population of the Pays de Vand*, did not find that from forty to fifty was more dangerous to females than from the tenth to the twentieth year of age; and M. Benoiston de Chatcauneuf, who has also made very elaborate researches on the same subject, read an interesting memoir at the Academy of Sciences, in 1818. which contains results as follows:—"From the fortieth to the sixtieth degree of latitude, on a line extending through Vevay, Paris, Berlin, and Stockholm, we can discover at no period of the life of the female, from the thirtieth to her seventieth year, any other increase in the ratio of mortality than that necessarily determined by the progressive advance of age. At every epoch of the life of the male, from the thirtieth year to the seventieth, the mortality exceeds that of the other sex, but especially from forty to fifty years of age. It follows, then, that the age from forty to fifty is more dangerous for men than for women, and that too without reference to the kind of life they live, whether in town or country, in the camp or the cloister. But, as it cannot be denied that women do die between the fortieth and fiftieth year of the consequences of their great physiological change under consideration, and as in spite of this cause of mortality, not to be found in the other sex, their decrease, instead of being greater, is actually less than that of the male, what power and duration of life would be theirs, were it not for this condition which nature has appended to their sexual character.—*Meigs' Translation of M. Colombat on the Diseases of Females.*

HYDRO-PNEUMO-PERICARDIUM.

AN example of this form of disease is given by M. Bricheteau (*Archives Gén. de Méd.* March 1844) in which fluctuation of liquid in the pericardium, coinciding with each beat of the heart, was perceptible by the ear during life, and resembled the flap of a paddle against the water. The pericardium was found after death greatly distended, and being punctured, gave exit, with audible sound, to a quantity of very foetid seropurulent fluid. (Bricheteau has referred to authorities, and finds his case almost unique, the only complete case of the kind.)—*Dr. Bennett's Report: British and Foreign Med. Review.*

CLIMATE OF MADRID.

MADRID is as a residence disagreeable and unhealthy, alternating between the extremes of heat and cold: although, says an accurate writer, Madrid is 10° South of London, the mean annual winter temperature is 43°7, or only 4° higher than that of our capital*; but during every winter a degree of cold is experienced which is very rare in London: in 1830 the thermometer sank to 9°5 Fabr., and a great quantity of snow fell, and every year, for several nights, the thermometer descends several degrees below 32°, and the rivers are covered with ice, although it generally disappears in the day. The mean temperature of the three summer months is 76°2, or 15° higher than London; but during the *Solano*, the south-east wind, it frequently rises to 90° or even 100°, in the shade, while in the sun the heat and glare are African; to this, as if in mockery of climate, are added the blasts of Siberia, for being placed on a denuded plateau, it is exposed to the keen blasts which sweep down, impregnated with death, from the Eolus cave of the snowy Guadarrama, the nursery of consumption. The capital, even if there were no local doctors, would soon cease to be a living city, were it not replenished by the thousands who flock to it from the provinces; for it is the destructive spider which attracts into the web all those who hope to make their fortunes. Yet the natives are loud in its praise; just as weak-minded persons are the proudest of those very errors of which they ought to be ashamed. The summer is the most dangerous period, when the pores are open, for often, during a N.E. wind, the difference of temperature on one side of a street to the other often reaches 20°, and the incautious stranger turning out of a street which is roasted by the sun, is caught at a corner by Eolus, and incontinently forwarded to the *cemetario*! The subtle air which will not extinguish a candle puts out a man's life. Dry, searching, and cutting, this assassin breath of death pierces through flesh and bone to the marrow; hence the careful way in which the natives cover their mouths, the women with handkerchiefs, the men by muffling themselves up in their cloaks. By these unmechanical respirators, the lungs are protected, for '*el horno se escalfa por la boca*;' the oven is heated at the mouth. The average of deaths at Madrid is as 1 in 28, while in London it is as 1 in 42: no wonder, according to Salas, that even the healthy live on physis. The climate is particularly fatal to young children."—*Ford's Spain.*

* The mean annual temperature of London is 50.4; according to some, 50.08.—*Ed. Gaz.*

TABLE OF THIRTY-FOUR CASES OF PLACENTAL PRESENTATION, WITH REMARKS,

By J. C. W. LEVER, M.D.

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Number.	Age of Patient.	No. of Confinement.	Supposed period of Pregnancy.	Nature of Presentation.	Mode of Delivery.	Sex of Child.			Result to Mother.	REMARKS.
						Alive.	Dead.			
						B. G.	B. G.	G.		
1	40	1	8½ mo.	Complete	Turning		1		Recovery	Outlet contracted in its lateral diameter.
2	43	16	9 mo.	Complete	Turning		1		Recovery	
3	39	9	8½ mo.	Complete	Turning		1		Death	Transfusion performed. Died in 7 hours after delivery.
4	35	7	7½ mo.	Partial	Turning			1	Recovery	Two-thirds of anterior portion of disc covered.
5	23	2	8 mo.	Partial	Turning		1		Recovery	Rather more than two-thirds of anterior portion.
6	31	4	8½ mo.	Complete	Turning			1	Recovery	
7	40	8	8½ mo.	Partial	Turning	1			Recovery	Membranes ruptured and subsequent version.
8	27	2	7 mo.	Partial	Turning	1			Recovery	Rather more than two-thirds of posterior portion of disc covered. Child died 5 days after delivery.
9	32	5	9 mo.	Partial	Membranes ruptured	1			Recovery	Labour completed by natural efforts.
10	not stated	11	9 mo.	Complete	Turning	1			Recovery	
11	28	2	9 mo.	Complete	Turning and Perforation		1		Recovery	Perforation performed in her previous labour.
12	42	16	8½ mo.	Complete	Turning			1	Death	Died half an hour after delivery.
13	38	4	8 mo.	Complete	Turning	1			Recovery	Child born still, but resuscitated.
14	38	7	8 mo.	Complete	Turning	1			Recovery	
15	23	3	8 mo.	Partial	Membranes ruptured			1	Recovery	Convulsions three days after delivery.

16	39	5	8½ mo.	Partial	Turning	1	Recovery	Two-thirds of anterior portion of disc covered.		
17	27	2	8 mo.	Partial	Turning	1	Recovery	Rather more than half of anterior portion of disc covered.		
18	38	3	8 mo.	Complete	Turning	1	Death	On 4th day, from pericarditis, brought on by exposure.		
19	37	8	8 mo.	Partial	Turning	1	Death	Within one hour of delivery had lost a very large quantity of blood.		
20	25	5	8½ mo.	Complete	Turning	1	Recovery			
21	33	1	7 mo.	Partial	Turning	1	Recovery	Rather more than half of anterior portion of disc covered. Child died in a few hours.		
22	28	3	8 mo.	Complete	Turning	1	Recovery			
23	29	2	8 mo.	Partial	Turning	1	Recovery	Anterior portion of os uteri covered.		
24	40	11	8½ mo.	Partial	Turning	1	Death	In one hour after delivery.		
25	40	9	8 mo.	Partial	Turning	1	Recovery	Three-fourths of disc covered.		
26	29	4	8½ mo.	Complete	Turning	1	Recovery	Protracted convalescence.		
27	41	9	8 mo.	Partial	Turning	1	Recovery	Three-fourths of disc covered.		
28	39	7	9 mo.	Complete	Turning	1	Recovery			
29	28	5	8½ mo.	Partial	Turning	1	Recovery	Two-thirds of anterior portion of disc covered. Patient for some days in a doubtful state from pleuro-peripneumony.		
30	31	4	8 mo.	Partial	Turning	1	Death	Rather more than three-fourths of os uteri covered. Died on the fifth day with peritonitis.		
31	not known	5	7 mo.	Almost complete	Turning	1	Recovery	Child died three hours after delivery.		
32	42	10	8½ mo.	Nearly complete	Turning	1	Death	From phlebitis on ninth day.		
33	38	8	8½ mo.	Complete	Placenta removed		Death	Child undelivered.		
34	35	7	8 mo.	Not known	Perforation	1	Recovery	Placenta removed by a midwife.		
Total . .					9	9	12	3	18	15

REMARKS. — By referring to the above table it will be seen that only two of the thirty-four women were primiparæ.

In 5 women it was the 2d confinement.

3	"	3d	"
4	"	4th	"
5	"	5th	"
4	"	7th	"
3	"	8th	"
3	"	9th	"
1	"	10th	"
2	"	11th	"
2	"	16th	"

Two women are stated to have arrived at the full period of utero-gestation, twelve to have been delivered between the eighth and ninth months of pregnancy, and seventeen at the eighth month and under.

In fifteen cases the presentation of the placenta is marked "complete;" in eighteen it is stated to have been situated "partially" over the os uteri; in the case marked "not known," I believe it to have been complete, but the placenta was removed piecemeal by the midwife before I was called to the case.

Mode of delivery.—In two cases of partial presentation, the membranes were ruptured, and delivery completed by the natural efforts. In thirty, the operation of version was performed; in one of them, the head of the child could not be extracted until its size had been lessened by the perforator: a similar operation had been practised in her previous confinement (the first). In but one case was the placental mass perforated by the hand of the operator.

In one case (34) the patient had lost a considerable quantity of blood, being attended by a midwife who had removed the placenta "piecemeal;" the divided funis protruded through the external parts. After administering stimulants, and waiting for some time until the patient had rallied, I delivered her by means of the crotchet.

To Case 33 I was called, and found the patient sinking, with no pulse at the wrist, and the heart's action scarcely to be felt. At 3 in the morning of the day I visited her, she had had her eighth attack of bleeding; these losses having occurred in the course of five weeks. The presentation had not been discovered, and blood was still trickling from the vagina. Brandy and ammonia were given by mouth, and

brandy in gruel injected "per anum." The hand was readily admitted into the vagina, which was very relaxed, and a considerable portion of the placenta was found detached and protruding through the os uteri; its remaining attachment was separated, and the mass removed; there was no pulsation of the funis. The bleeding immediately ceased, and did not recur until her death, which shortly took place. This was a case in which the efficacy of transfusion might have been tried, but not knowing the nature of the case when I left home, I was unprovided with the necessary instruments.

One of the cases was delivered by Dr. Ashwell, two by my late colleague Mr. Tweedie, three by pupils attached to the Lying-in Institution of Guy's Hospital, three by surgeons in practice, and the remainder by myself.

Thirty-three children were delivered; eighteen born alive, and fifteen dead. Of the eighteen born alive, nine were males, and nine females. Of the fifteen still-born children, twelve were males and three females; so that twenty-one children were males, and twelve females.

Eight deaths occurred; of these, three deserve especial notice. In one, (Case 18), the woman died with pericarditis, having, in the absence of her nurse, risen from her bed a few days after her delivery, and walked down stairs to open the street door. In Case 30, peritonitis took place on the third day, and proved fatal on the fifth day. In Case 32, the patient died on the ninth day, of phlebitis, having been exposed to contagion. These causes of death might have prevailed if the labours had been perfectly natural. Case 33 died with the child in utero, a short time after the removal of the placenta. In four cases death took place soon after the performance of the operation of version; Case 3 in seven hours, transfusion having been unsuccessfully performed; Case 12, immediately after delivery: this woman had had previously two copious losses of blood, without sending for assistance: Case 19, in one hour after delivery: her powers were previously reduced by gin-drinking, and a want of food; and Case 24, a weakly woman, who had born ten children, and was most destitute.

I have seen three other fatal cases of placental presentation, in which version

was performed, but I am unable to obtain the necessary particulars. In one, the woman died while the operator's arm was in the uterus; in the second, the patient expired in three quarters of an hour after delivery, hæmorrhage continuing after the extraction of the child and secundines, with the uterus well contracted. Although no post-mortem examination took place, I am inclined to believe the os uteri was lacerated by the hand of the operator, and in the third case the patient died immediately after the delivery of the child, before the expulsion of the placenta.

The first fourteen cases have been recorded in the Septennial Report of the Guy's Hospital Lying-in Charity, published in the 6th volume of the Reports, but at page 66, line 19, there is an error, which I will take this opportunity of correcting. The paragraph runs, "in all, delivery was accomplished by the operation of turning," it should be, "in all, *with the exception of one*, delivery was accomplished by the operation of turning."

12, Wellington Street, Southwark,
November, 1845.

NECROSIS OF THE TENTH AND ELEVENTH RIBS ON THE LEFT SIDE, AND ALSO OF THE CORRESPONDING VERTEBRÆ; LUMBAR ABSCESS ON THE SAME SIDE; MILIARY TUBERCLES IN THE LUNGS, WITH PNEUMONIA IN THE FIRST STAGE; ENTERITIS: DEATH. BY DR. JOULMOUCHE.

CASE.—Girault, 30 years of age, was the subject of a large ulcer, with irregular overhanging edges, the consequence of an abscess, which had opened in the lumbar region near the vertebral column; he gradually sank, exhausted by his long-continued sufferings and profuse suppuration.

Necropsy.—There was an irregular oval ulcer, from eight to fourteen centimeters in diameter, situated in the middle of the left lumbar region along the spine; the edges were deeply indented and undermined, and the base was of a dark red hue. On incision, a cavity filled with sero-sanguinolent pus was exposed, terminating above in a fistulous canal passing between the muscles of the back to the articulations of the two last ribs, the heads, external surfaces, and upper margins of which were necrotic and surrounded by pus. The corresponding portions of the dorsal vertebræ were similarly diseased. The ulcer was bounded by a dense infiltrated lardaceous cellular tissue. The ribs of this side were more oblique than is usual; indeed, they appeared nearly ver-

tical. There was no communication with the pleural cavity; but the lung, opposite to the diseased ribs, adhered so closely to the pleura, that in the attempt to detach it, it was lacerated. The inflammation appeared to have been propagated by contiguity to the inferior lobe of the lung. The whole pleura was covered with innumerable miliary tubercles, as was also the lower lobe, which was in the first stage of pneumonia. Tubercles were also presented in the right lung, uncomplicated with pneumonia. There were signs of enteritis in the jejunum, but the other intestines were healthy. The liver was in a state of commencing cirrhosis.

It is difficult to decide, in this case, whether the disease commenced in the costal articulations of the vertebræ, or was primarily developed in the posterior extremities of the ribs. The absence of all history of the different stages of the disease precludes the possibility of arriving at an exact opinion; yet the first view of the question carries with it the greater probability. The development of tubercles takes place in the spongy substance of the vertebræ, which in consequence become softened, abscesses are formed around them, and they, together with the adjacent portions of the ribs, are affected with necrosis. Such appear to be the usual string of changes; and therefore it may be inferred that the disease in this instance followed its usual course.

In this case may likewise be noticed the means taken by nature to exclude the pus formed around the ribs from the cavity of the pleura.—*Gazette Médicale*, 1845.

TUBERCLES IN THE BONES.

M. PARISE (*Archives Gén. de Médecine*, 1843) describes the appearances presented in a patient in whom tubercles were found in the lungs, spleen, cellular tissue, and the spinal canal, in the substance of the vertebræ and sacrum. In the latter situations were seen—1st, an isolated tubercle surrounded by a vascular membrane, and enclosed in an osseous cell, the surrounding cells being healthy; 2d, grey semitransparent matter infiltrated in the bony tissue; 3d, purulent infiltration and necrosis. The author concludes that necrosis is the result or distension of the osseous cells from the infiltration of the yellow tubercular matter.—*Dr. Bennett's Report of the Progress of Pathology*, &c., *Brit. and For. Med. Rev.* July 1845.

MORBID ANATOMY OF COLICA PICTONUM.

A FATAL case of this disease is detailed by Mr. Welford, of Ottery St. Mary (*Prov. Med. and Surg. Journ.*) The patient died on the sixth day. The colon was found irregularly contracted, and presented several ecchymosed spots. The appendix cæci was in a state of gangrene.—*Brit. and For. Med. Rev.* July 1845.

ON THE

THERAPEUTIC EFFECTS OF NITROGEN IN TYPHUS FEVER.

BY JOHN GRANTHAM, Esq.

Fellow of the Royal College of Surgeons, &c.

UNDER certain influences a morbid poison is generated by the vegetable kingdom, which is capable in two ways of becoming a cause of disease to man, namely, by entering his respiratory organs with the air which he breathes, and being thus absorbed into the system, and secondly by its admission into the alimentary system, in combination with his food, and thus involved in the function of assimilation. A third mode may be recognised when the vegetable poison has communicated disease to animals forming the food of man. Malaria is the product of a putrefactive action amongst vegetables, and this agent admitted into the tissues of man gives rise to a similar putrefactive action in his blood; the abnormal matters resulting from such putrefactive action requiring the aid of the alimentary canal, the kidneys, and the skin, for their separation and removal from the system. Dr. Heule, in pursuing a pathological investigation of fevers, endeavoured to establish as a fact that the material of contagion is composed of organic matter. He says, "contagion is, as it were, miasma in the second generation; a miasma which has passed through the first epoch of development within the living body;" on the other hand, Dr. Cullen remarks that the foundation of a fever is laid in a debility of the whole system, and particularly in the atony of the extreme vessels. After a detail of many facts in proof of his reasonings, he concludes,—“Upon the whole, our doctrine of fever is explicitly this:—the remote causes are certain sedative powers applied to the nervous system, which, diminishing the energy of the brain, thereby produce a debility of the whole functions, and particularly in the actions of the extreme vessels. Such, however, is at the same time the nature of the animal economy, that this debility proves an indirect stimulus to the sanguiferous system; whence, by the intervention of the cold stage, and spasm connected

with it, the action of the heart and larger arteries is increased, and continues so till it has had the effect of restoring the energy of the brain, of extending the energy to the extreme vessels, of restoring their action, and thereby especially overcoming the spasm affecting them; upon the removing of which, the excretion of sweat, and other marks of relaxation of excretories, take place.* Dr. Holland, in his Medical Notes and Reflections, ascribed the cause of cholera to animate contagion, which he supported by a number of lucid arguments and fair deductions from analogies. I subscribe most cordially to the doctrine laid down by Dr. Holland, and I would call especial attention to the instance which he adduces of cholera, in consequence of the great similarity of that disease and typhus abdominalis. The latter disease I observed with unusual severity in Lincolnshire and Nottinghamshire, about the year 1818, when it raged with such violence that I have seen the stage of collapse with distension of the abdomen within twenty-four hours from the attack of fever, which always commenced with diarrhœa, and death almost inevitable, despite of the most active treatment. It must be evident to all medical observers, how varied the practice of treating patients in typhus fever has been, and it is no less perplexing to read the many theories which have from time to time filled the pages of medical literature, all, however, demanding attention, and not to be lightly regarded. It is therefore with diffidence I offer my mite of experience in reference to the theory and practice of typhus fever.

The extraordinary effects of nitrogen in suspending the comatose effects of typhus fever, was so powerfully impressed on my mind during the last year, that I feel it to be a duty to promulgate the doctrine of diluting the system of fever patients with nitrogenized matter as one of vast importance. In treating this subject, I shall, in the first place, take notice of the blood in typhus fever, the vital action of the capillaries, the constituent elements of the excretions; and, lastly, consider the treatment indicated in this disease.

* First Lines, paragraph 40.

Every part where bloodvessels are to be found, every part where nervous influence is perceptible, every tissue in the whole body, in fact, wastes away, and passes eventually from the system as useless. Where no means are at hand for repairing these daily and hourly losses, the individual must perish; the various constituents of the body giving way successively in the following order:—first, the fat; secondly, the muscles; and lastly, the substance of the brain, followed by derangement of the intellects and death. Food which is suited to arrest so fearful a state as this must contain those substances which are capable of being employed in the renewal and repair of the body, which have the same chemical composition as the body itself, or, in other words, which possesses the same constituents as the blood. There are but three proximate organic principles which are known to come within these terms, namely, albumen, fibrin, and casein. I now proceed to state what are the constituent elements of blood in fever. According to Jennings (as reported in Mr. Ancell's Lectures on Physiology), "the blood in the first stage of typhus fever (depression) is generally thick and dark; it coagulates rapidly, and forms a soft large dark coloured clot. In the second stage (excitement) it flows readily, is of a scarlet colour, does not coagulate so quickly as, and forms a more solid clot than, the former; it is occasionally covered with a slight buffy coat. In the third stage (collapse) it flows very readily, is thin, watery, and of a dark colour; the clot is loose and flocculent, and occasionally appears more as a sediment of colouring matter than as a clot." In thoroughly developed typhus, Dr. Armstrong found the blood of the temporal artery as dark as that of the vein. Dr. Clanny also states that the watery portion of the blood increases with the intensity of the disease, and that not merely the solid constituents generally, but also the salts and carbonic acid, are diminished. The water begins to decrease, and the solid constituents to increase, in favourable cases, after twelve or eighteen days. According to Stevens, the salts of the blood (especially the chloride of sodium) are diminished in typhus fever. Dr. R. Clanny also states that the quantity of salts is materially dimi-

nished in typhoid blood. The fibrin is found decreased in the blood of typhus fever, and the decrease is in proportion to the advancement of the disease, while in inflammatory fever it is just the reverse. In intermittent fever the blood corpuscles are below the normal standard, so that, as the fever degenerates into the typhoid form, the blood corpuscles and solid constituents evidently decrease. The blood, according to Simon, in typhus petechialis putridus "is watery, very poor in fibrin, and of a dark colour. If any clot be formed it is diffuent and very soft, the serum is frequently of a deep yellow, or brown red colour, partly from the colouring matter of the bile, and partly from dissolved hæmatoglobulin. It possesses a very peculiar smell, which probably differs in each disease." It is by no means improbable that this smell may be produced by a volatile salt of ammonia.

Hence the blood in typhus fever is very deficient in fibrin and blood corpuscles; in intermittent fever, also, the blood corpuscles are below the normal standard. In typhus fever the albumen is diminished, and a salt of ammonia is sometimes found in the blood. These are all so many evidences of an imperfect action in the laws of assimilation in fever. While in health, in men of strong constitutions the blood corpuscles are more numerous than in feeble and lymphatic temperaments. Now the red particles of the blood should in health contain 99 parts of ammonia (animal matter?) and one of ashes, and if we refer to Dr. Prout's statement in reference to the composition of the staminal principles of the body, we find them to be composed of ultimate elements, in the following proportions:—

	Carbon.	Hydrog.	Nitrog.	Oxyg.
Albumen	50	7	15	20
Gelatin	47	7	16	27
Fibrin	53	7	19	19

These considerations show the importance of regulating the supply of such elements as will neutralize the destructive action of oxygen in the blood of patients suffering under typhus fever. The necessity for the consumption and reproduction of the blood corpuscles has never yet been disputed, but various theories have been propounded by different physiologists re-

garding the seat of their formation, and their mode of organic development or metamorphosis. Schultz, for example, considers the blood corpuscles are formed in the lymphatic glands and conveyed by the thoracic duct into the blood. He states that the chyle which is found in the vessels issuing from the glands contains clear round oily vesicles and granular lymph corpuscles. Although the lymphatic glands may be regarded as in some degree the seat of formation of the blood corpuscles, it must by no means be supposed that the latter issue from those glands in a perfectly developed state; their ultimate maturity is obtained in the bloodvessels, and is without doubt effected by the organs of respiration, and this opinion is supported by Schultz. The great quantity of matters abounding in nitrogen and carbon, and urea, uric acid, bile, mucus, and fat, which are constantly being secreted in the urine, fæces, and mucous discharges, together with the considerable amount of carbon which is given off as carbonic acid in the process of respiration, must all be refunded to the system by the blood.

The seat of fever I consider to be the capillary structure; it is in this structure that all the phenomena of secretion and nutrition are performed, and by the superior force of the chemical law over the vital principle. The capillaries are the seat of waste and diminution of structure and power in the body. The latter, as is well known, is an effect universal in fever. If there be one symptom more characteristic than another in fever, it is the wasting of the structures of the body; the wasting always taking place in the order in which oxygen is said to act on the body when not diluted by a due supply of hydrogen or nitrogen. Simon, in his chapter on the metamorphosis of the blood, makes the following general remarks: "all our conceptions of organic life are associated with the idea of continuous change of substance," therefore the blood is not the only portion of the body that undergoes this change, every organ and tissue is subject to the same, which is presented to us under the general phenomena of nutrition and consumption (or waste), and which is dependent on, and effected by, the blood alone. But since the various tissues present a different chemical composition, and since the different organs

separate different matters from the blood, it is obvious that they cannot all modify the circulating fluid in the same manner; but that the metamorphosis must vary in some degree with the influence of the nervous system; consequently, circulation and respiration, so as to bring the blood in contact with oxygen, are necessary for this metamorphosis, and the more completely these functions are performed, the more perfectly will the due changes of the blood be effected. The perspiration in health is an albuminous fluid excreted from the skin, containing carbon, azote, and hydrogen. The quantity perspired from a well-grown adult is estimated at two pounds in twenty-four hours. There can be no doubt but that the skin produces similar changes to the lungs; and that it is also an organ of absorption. Berzelius considers the cutaneous secretion to be composed of an acid; probably the acetic or lactic acid (he says they are nearly identical), a muriate of potash, soda, acetate of soda, and, perhaps, albumen. That which evaporates is mere water. This important excretion also demands our attention. In typhus fever it is generally, indeed I might say invariably, suppressed in the commencement of that disease, and, as a consequence, the blood is still further impeded in its assimilative action, presupposing the capillaries and lymphatic glands to be the seat of typhus fever. The skin in health throws off lactic and butyric acid, which when suppressed, are most likely carried away by the kidneys, in the form of urea, or urate of ammonia, or uric acid. Moreover, it is a fact which I may mention in support of this opinion, that all patients who suffer from gout have a dry skin, a fact which sufficiently establishes the theory, that any obstruction or cessation of action of the organs of perspiration is rectified by the exertion of some abnormal power in the kidneys. When fever has not degenerated into typhus, the perspiration is highly acid, whether this be acetous or lactic I cannot determine. In typhus fever the odour from the skin is sufficiently cognizable to warrant the assertion of its being the effects of ammoniacal decomposition.

The saliva is the next nitrogenized element which is suppressed in typhus fever, and, in consequence, the animal

heat with the means of deoxygenation in the stomach is impeded. In the *Gazette Médicale* of February 8th, 1845, is a communication from Mr. Turck on the chlorides occurring in albuminous fluids, he remarks, "all the albuminous liquids he has yet examined, viz., the saliva, serum of the blood, and white of eggs, are continually disengaging ammonia." He conceives this gas is due to the simultaneous presence of muriate of ammonia and caustic soda in these fluids. The soda becomes converted into a muriate, and ammonia is then slowly liberated; therefore, he concludes that the evolution of ammonia from albuminous liquids performs an important part in the animal economy. Enderlin "concludes that the saliva, like the blood, contains no lactate, carbonate, or acetate, but that its alkaline reaction is due to tribasic phosphate of soda, which serves also as the solvent of the mucus and proteine compounds." Contemplating this secretion in health, it must be observed how great the loss is to life when it is suppressed or suspended; it is not only necessary for the first admixture with the food, but it is constantly poured out for some important duty into the stomach, when chymification is not going on.

The next secretion is the urine. The kidneys perform a high office in the animal economy, in the elimination of abnormal elements from the blood in disease. The natural properties of the urine are too well known to need restating. Authors have differed much in reference to the alkalescence of urine in fever,—without doubt, the escape of the phosphates in urine, with the carbonate of ammonia and urea during the progress of typhus fever, is very general. In conclusion, I assert that ammonia, or nitrogen, is deficient in every structure as a staminal element in typhus fever, that carbon is found in larger quantities than in health in all the excretions. In typhus fever, oxygen acts by accelerating the heart's action, and depressing the nervous influence or vital power. Ammonia acts by stimulating the capillaries of the intestines, is absorbed by the lymphatic glands, and assists in the elimination of carbon from the body, and finally passes off in the compounds of the urine. The kidneys compensate for the defective function

of the skin and salivary glands, by discharging matter combined with nitrogen. In typhus fever, I consider it is impossible to alter the duration of the disease. Venous congestion, wherever it may be found, should always be relieved by depletion, either generally or locally, despite of a feeble pulse. After giving a full dose of castor oil, the carbonate of ammonia, with tincture of opium, should be persisted in, namely, ten grains of the former with ten drops of the latter every six hours for an adult, until the return of cerebral action or cessation of stupor with delirium, and no longer, as at that time, aperients with quinine appear to be indicated. Friction to the skin with hot lard after ablution with warm water (96 degrees Fah.) is of the greatest benefit; as oil is absorbed by endosmosis through the veins without immediately reaching the blood; when imbibed it combines with the albumen of the plastic constituents to form cells, which pass into the veins and serve for the nutrition of the body, and also to regulate the animal temperature. Dr. Willis read a paper before the Royal Society, "on the special functions of the skin," wherein he showed the influence which the dissipation of a certain amount of simple water by the sudoriparous glands exerted upon the current of blood returning from all the peripheral parts of the body to the heart, and insisted upon this as the means by which venous endosmose or absorption was chiefly secured, showing the power of absorption and exudation in that structure.

In reference to diet, I consider water as the first and most important requirement of the blood, in consequence of the great evolution or production of carbonic acid; secondly, good beef tea, highly seasoned with spices, and salt with barley water or gum water: this diet to be given during the exhibition of the ammonia and opium; when quinine is indicated, then I would recommend port wine in addition to the above diet, and gradually return to a solid diet. On a general review of the foregoing observations, the most prominent symptom in typhus fever appears to be waste of the structures of the body, not simply attributable to the superiority of chemical over the vital action, but to more remote causes, viz., the quality of the air respired, and the quality and quantity of the food di-

gested (as abstemiousness in animal food is considered beneficial by those whose experience has been great, especially in tropical climes: they observe, that the less the inhabitants partake of an animal diet, the more exempt are they from fever); and the question arises, are these causes acute or chronic? I should say, decidedly chronic. It appears impossible to conceive typhus fever occurring suddenly when the blood is in a healthy state and the brain active. Experience fully attests the languor and debility of the system during the premonitory symptoms of typhus fever. In the year 1827, when an epidemic fever of a typhoid character made its inroad along the banks of the Thames, especially in the parish of Plumstead, Kent, when the drainage was very bad,* and the disease was very fatal, the premonitory symptoms were attended with great prostration of strength, with mental depression, a livid appearance of the lips, and also of the nose, dulness of the eyes, and torpor of the excretions. I had learned that moderate measures failed in arresting the attack, therefore I ordered hydr. sub. murialis gr. x. pulv. jalapæ zi. to be taken every three hours until a copious faecal evacuation was produced, after which action the sensorium became relieved, and an intermittent form of fever ensued about the second day after the action of the aperient, proving the necessity of early attention to congestion of the liver and intestines during the premonitory stage of typhus fever.

Crayford, Kent,
Oct, 1845.

THE clergy were the only practitioners of physic till the end of the 12th century. Richard Nigel, Bishop of London, who died in 1198, was apothecary to Henry II.!

It has been asserted in Parliament that during the seven years' war, which ended in 1762, not less than 130,000 seamen died of disease, two-thirds of them from scurvy.

* I would here remark, since the marshes have been better drained, no part of England, in the same altitude with the bed of the sea, is more healthy than the Kentish coast along the river Thames; as those medical men who are ignorant of the extensive improved method of draining and passing fresh running water along the levels have asserted that the country villages along the banks of the Thames are unhealthy, and the inhabitants very subject to ague, I would now contradict it, as such reports are calculated to do no good to a vicinity.

MEDICAL GAZETTE.

FRIDAY, DEC. 12, 1845.

THE Lunacy Act, passed in the last session of Parliament, 8 and 9 Victoria, cap. 100, may be regarded as the first attempt at permanent legislation for regulating the care and treatment of the insane in this country. A temporary Act was passed in the early part of the reign of William IVth, and this had been occasionally renewed, as the time allotted for its operation expired. We have, however, at length a statute, consisting of one hundred and eighteen clauses, some of which have a very important bearing on the duties of professional men, and others effect extensive alterations in the management of lunatic asylums.

The 45th section is that which more immediately concerns medical practitioners. According to this, no person not a pauper can be received into, or detained in, any licensed house or hospital without an order under the hand of some person, according to a certain form, nor without the medical certificates of *two physicians, surgeons, or apothecaries* not in partnership, and each of whom shall, *separately from the other*, have personally examined the person to whom it relates, not more than seven clear days previously to the reception of such person in such house or hospital, and shall have signed and dated the same, on the day on which such person shall have been so examined*. It is further provided that

* We here subjoin the form of a medical certificate in the case of private patients, according to Schedule C of Clause 45 of the Act.

I, _____, being a physician, or surgeon, or apothecary, duly authorized to practise as such, hereby certify that I have examined A B, the person named in the accompanying statement and order, and that the said A B is a lunatic (or an insane person, or an idiot, or a person of unsound mind), and a proper person to be confined, and that I have formed this opinion from the following fact, or facts, viz.,

Signed,	Name	Place of abode
Dated this	day of	One thousand,
eight hundred, and		

every person who shall receive or detain any such person as aforesaid in any such house or hospital without such order and medical certificates; and any physician, surgeon, or apothecary, who shall knowingly sign any such medical certificate as aforesaid, which shall untruly state any of the particulars required by this Act, shall be guilty of a misdemeanour.

The 46th clause places on medical practitioners a greater share of responsibility than has hitherto existed. Under the old law they were permitted to sign the certificate without assigning any reasons; but now it is ordered that every physician, surgeon, or apothecary signing such certificate *shall specify therein any fact or facts* (whether arising from his own observation, or from the information of any other person) *upon which he has formed his opinion*, that the person to whom such certificate relates, is a lunatic or an insane person, &c.*

The 47th clause provides, that in cases of emergency, a person (not a pauper) may, under special circumstances (these being stated in the order), be received into a house or hospital upon a certificate signed by one physician, surgeon, or apothecary alone, provided that such order state the special circumstances which have prevented the person from being examined by two medical practitioners; and that within three days another such certificate shall be signed by some other physician, surgeon, or apothecary upon a like examination. The detaining of a person upon *one*

medical certificate beyond three days without such further certificate, is a misdemeanour in the proprietor of such house or hospital.

Under the 48th clause, the certificate of one physician, surgeon, or apothecary only, signed according to the above form, will suffice for the admission of a pauper lunatic, provided the party has been previously examined by a justice, clergyman, or overseer, and has received an order setting forth the particulars of the case.

Clause 49th provides, that no medical practitioner who is interested in, or attends a licensed house or hospital, or whose father, brother, son, or partner, is wholly or partly the proprietor of, or a regular professional attendant in such house or hospital, shall sign any certificate for the reception of a patient into it; and any physician, surgeon, or apothecary, who shall sign any certificate contrary to any of the provisions hereinbefore contained, or *without having complied with all the provisions* hereby required in the case of the patient to whom the same shall relate, or who shall in such certificate *describe his medical qualification untruly*, or shall untruly state anything therein, shall be guilty of a misdemeanour.

These are the provisions which chiefly affect medical practitioners who sign certificates of insanity. It will be seen that they are, on the whole, more stringent than those under the old law; and we have here, as if in anticipation of the statutory division of the grades of the profession, an announcement that a wilful misdescription of qualification, will be regarded as a misdemeanour. In our view, the wording of the old law (2 and 3 William IV. c. 107, s. 28) was preferable, because it was free from ambiguity. This is more than can be said of the language of the 45th section of the new act; and un-

* We have reason to believe that this provision of the Act, notwithstanding the very clear and explicit terms in which it is set forth, has been very extensively neglected. A large number of lunatics are now probably confined under illegal certificates, the keeper of the asylum, owing to the neglect of the medical men, being thereby exposed to an indictment for a misdemeanour. Since the above remarks on the Lunacy Act were written, we have received an important letter on this subject from Dr. Willis, of Stamford, which is elsewhere inserted. See p. 1434.

less in any disputed case, our judges should put a much more liberal interpretation upon the penal clauses of statutes than they are wont to do, the proprietors of asylums may find themselves placed in an awkward predicament. The statute of William IV. required the certificate to be signed by two medical practitioners, each being a physician, surgeon, or apothecary. The statute of Victoria requires the medical certificates of *two physicians, surgeons, or apothecaries*. The strict interpretation of this appears to be, that the certificates must be signed by *two* of the same grade in the profession, or it will be invalid, and the confinement of any person under it, would be illegal. Let us suppose that one certificate is signed by a physician, and another by an apothecary: can this be regarded as a compliance with the terms of an act, which demands medical certificates of two physicians, or two apothecaries? We shall not pretend to say how the matter would be decided by our judges; but we believe there are many cases in our law books where the proceedings have been set aside under penal statutes, because the singular number had been, through negligence, substituted for the plural, and *vice versa*. Indeed many acts of Parliament contain an interpretation clause to guard against the inconvenience that might arise from such technical defects.

An interpretation clause, it is true, is attached to the act before us; and possibly there may be here a method of escaping from the dilemma above suggested. It provides that words importing the singular number shall include the plural; and words importing the plural number, shall include the singular. Admitting that this provision will make *two* physicians, surgeons, or apothecaries, identical with *one* physician, surgeon, or apothecary,

it is rather doubtful whether, in face of the 49th clause, where a misstatement of qualification is for the first time, we believe, in an Act of Parliament, made a misdemeanour, it can make a physician of a surgeon, or a surgeon of an apothecary!

The intention of the framers of the clause is obvious, and the use of the words must have arisen from some mistake; for it cannot have been intended that a matter so clearly expressed in the repealed statute, should be left to be made out in a new statute by reference to an interpretation clause which is intended rather to cover technical omissions than to correct downright blunders. Vexatious suits have been before now brought against the proprietors of lunatic asylums; and it is not a comfortable reflection to have, even in a technical point of view, the remotest doubt of the legal validity of a certificate of insanity. There are other acts of Parliament relating to medical subjects, in which it would be easy to point out many serious errors. The great evil is, that these statutes are framed by persons who are but little acquainted with medical subjects, and who are therefore unable to perceive the various ways in which the members of another profession may be affected by them.

Reviews.

A Practical Treatise on Healthy Skin: with the Medical and Domestic Treatment of Cutaneous Diseases. By ERASMUS WILSON, F.R.S. Illustrated with six steel engravings by Bagg. 8vo. pp. 356. Churchill. London: 1845.

We must confess that when we began to cut the leaves of this important looking octavo, understanding that its author was Mr. Wilson, the experi-

enced anatomist, we expected to find a very different work from that which an inspection of its pages proved it to be.

The first chapter embodies a correct account of the structures of the skin, and contains here and there an interesting remark, or novel view. The remainder presents a strange confusion of popular discourses upon the sanatory, cosmetic, and therapeutic powers of soap and water; recipes for the preparation, and directions for the application, of the unguentum sulphuris; rapturous descriptions of the beauties of form and organization which the microscope reveals in those acari scabiei which the said diabolical unguent is treacherously designed to annihilate; touching, but not very original, anecdotes concerning Marie Antoinette and the Prisoner of Chillon; and an entire chapter in honour of Priessnitz, and in laudation of hydropathy. We do not, however, wish to dwell very strongly upon the demerits of the first literary failure of one who has previously shown himself to be an able illustrator of important subjects. We are certain that so good an anatomist as Mr. Erasmus Wilson unquestionably is, may discover far more useful and becoming pursuits than that of advocating the failing cause of hydropathy (with which, by the by, it is perfectly evident that he has scarcely any practical acquaintance), and in endeavouring to rival the fame of good old John de Gaddesden, which chiefly rests upon the fact that "he invented diverse modes of keeping people clean."

Facts and Observations in Medicine and Surgery: the Gleanings of ten years of active general practice, and having particular reference to Fractures and Dislocations, Gun-shot wound, Calculus, Insanity, Epilepsy, Hydrocephalus, the Therapeutic Application of Galvanism, and Fibrinous Diarrhæa. By J. GRANTHAM, F.R.C.S.E. 8vo. pp. 216. Churchill. London, 1845.

THE ample title of Mr. Grantham's work gives a fair idea of the scope and variety of its contents, which are very nearly equally made up of surgical and medical cases, and memoirs. Most of the cases and several of the essays possess considerable practical value

and interest,—among the latter, we would specify that upon the "Mechanical Apparatus for the Treatment of Fractures," which contains many suggestions that have been for some years received in practice. The remarks on the benefit derivable from the use of hot applications in the treatment of simple fracture and severe sprains—a plan which we first saw adopted several years ago in cases of the latter kind, with almost uniform advantage; and the remarks upon the importance of attending to the premonitory symptoms of Insanity, in which the author dwells with much judgment upon the benefit which will result from an early apprehension and removal of those causes of physical and mental irritation which the careful physician may frequently recognise as heralding the approach of confirmed mania. Upon the whole, we feel inclined to attach more value to Mr. Grantham's surgical papers than to his medical observations: several of his papers have evidently been written with considerable care, others are greatly overloaded with unnecessary details, while the remainder are mere sketches of opinions which it would probably have been well that the author should have allowed to remain unpublished until further observation and reflection had enabled him to confirm and mature the views which he seeks to establish.

EXPECTORATION OF PORTIONS OF HEALTHY LUNG.

PROFESSOR ROMIG, of Gran, relates (Allg. Med. Central Zeitung, Oct. 29, 1842), a curious case in which portions of healthy lung were expectorated. The patient, æt. 34, had for some years been subject to moist cough, unattended by pain. In the course of an anomalous illness, characterized chiefly by abundant hæmorrhage from the bowels, cough and dyspnœa came on, and during a violent fit of coughing he brought up a portion of apparently healthy pulmonary substance, one inch and a quarter long, and half an inch broad and thick, of the colour and appearance of healthy lung, and which swam in water. On the following day another similar but smaller portion was expectorated. Reference is made to a similar case recorded in the second number of the Central Zeitung, by Dr. Joel, of Berlin.—*Dr. Bennett's Report, Brit. and For. Med. Rev.* July 1845.

Correspondence.

ON MEDICAL CERTIFICATES OF INSANITY.

To the Medical Profession.

GENTLEMEN,—The Secretary of the Commissioners in Lunacy has addressed a letter to me, implying an irregularity in my conduct in having received a patient into my establishment, when the “medical men certifying had omitted altogether to subjoin any fact from which they formed their opinion as to the gentleman referred to being of unsound mind.”

It is my opinion that very many of you may be wholly unacquainted with the recent Act of Parliament passed in August last, relative to the insane, which most seriously concerns every member of the medical profession.

The Commissioners have expressed themselves satisfied that I will cooperate with them in their determination to carry out, *bonâ fide*, and strictly, the intentions of the legislature. I therefore cannot do a greater service to you, or cooperate more effectually with them, than by publishing the letter addressed to me on the subject, because, while it must direct your attention to the Act, the provisions of which the Commissioners are aiming to enforce, it must awaken you to a knowledge of your position with them, in the case of your non-compliance.

As regards the case which has induced the Commissioners to caution me against receiving patients upon irregular certificates, which cannot be received by them as legal documents, I may observe, they knew his father had placed him under my care; they had received an opinion from myself, as well as from two other medical gentlemen, that he was deranged, but they had not any fact stated from which those gentlemen formed their opinion, and therefore they deemed the certificates irregular, and my conduct reprehensible.

I mention these circumstances, in order to impress on every member of the medical profession, the implicit attention expected from you, and you will not fail to take notice that, from a dereliction of your duty in not attending strictly to the provisions of the Act, you may not only bring yourselves into trouble with the solicitors of the Commissioners, but place the proprietors of lunatic asylums in a most painful dilemma.

The insane are often not brought to us until they cannot be managed.

On the one hand we are liable through your inadvertence to incur the censure of the Commissioners, for affording them the aid of our experience. On the other hand, we may be thought by the relatives, who are

unacquainted with these preparatory measures, to be wanting in the common feelings of humanity.

The following is the letter to which I allude.

I am, gentlemen, yours very faithfully,
FRANCIS WILLIS, M.D.

Shillingthorpe House, Stamford,
Nov. 29th, 1843.

Commissioners in Lunacy Office,
12, Abingdon Street, 21st Nov. 1845.

SIR,—The attention of the Commissioners in Lunacy has been drawn to the medical certificates for the admission of * * * a private patient, into your asylum, in which the medical men certifying have omitted altogether to subjoin any fact, from which they formed their opinion as to the gentleman referred to being of unsound mind, and a proper person to be confined; thus acting in direct violation of the statute, the non-compliance with whose provisions in this respect is constituted by the 49th section a misdemeanour.

Under these circumstances, the Commissioners have felt it their duty to take the course which they have adopted in similar cases, and to refer the certificates in question to their Solicitor, with instructions to communicate with the medical gentlemen whose names are attached thereto, and to take such proceedings as he may deem advisable towards enforcing a compliance with the Act.

I am further desirous to caution you against receiving patients upon such irregular certificates, which cannot be received by the Commissioners as legal documents.

In thus drawing your attention to the subject, the Commissioners are satisfied that you will cooperate with them in their determination to carry out, *bonâ fide* and strictly, the intentions of the legislature as respects the insane.

I am, sir, your very obedient servant,
R. W. LUTWIDGE, Sec.

F. Willis, M.D.

Shillingthorpe House, near Stamford.

PRESUMED INFLUENCE OF THE MOON ON THE INSANE.

IN enumerating the causes of chronic delirium, M. Pinel alludes to the supposed influence of the moon in inducing paroxysms. “Daily experience at the Salpêtrière and at Bicêtre exhibits, in a collection of upwards of 3000 patients, the absolute nullity of the alleged influence of the moon. It may, however, be said, that, during certain nights, lunatics may be more than usually agitated in consequence of the unusual light entering their rooms, and the figures produced on the walls and windows.”—*M. S. Pinel, on Cerebral Pathology; Brit. and Foreign Med. Review.*

Proceedings of Societies.

WESTMINSTER MEDICAL SOCIETY.

Saturday, Nov. 8, 1845.

MR. FISHER, PRESIDENT.

MR. DUNN related two cases of fatal apoplexy. In the first, the patient was a Chancery solicitor, forty-nine years of age. He had attended him, some months previously to his death, for an attack of rheumatic gout, affecting the feet and knees. He was a man of considerable mental endowments, and had, at one time, been in extensive Chancery practice; but he was a *bon vivant*, a free-liver, the victim of gout, and had met with great reverses of fortune. When Mr. Dunn was called to attend him, he filled the office of managing Chancery clerk to a house in the Temple. The attack of rheumatic gout supervening upon a shattered and broken constitution, was rather a severe one, though it gradually yielded to ordinary treatment, but every subsequent debauch was sure to be followed by premonitory symptoms. About four months before his death he was threatened with apoplexy. He was seized suddenly with giddiness of the head, confusion of thought, difficulty and thick-ness of speech, with partial loss of power on the right side of the body. Mr. Dunn was sent for. By prompt remedial measures, the observance of perfect quiet, and total abstinence from business, the symptoms disappeared, but left a sense of weakness on the right side, and rather a dragging of the leg and foot; the mind, however, appeared to have received a shock, from which it never recovered. He had not the same aptitude for business as formerly, was more lethargic, and gave indications of a loss of mental as well as of physical power, and impressed Mr. Dunn's mind with the conviction of the existence of ramollissement of the cerebral substance. On the morning of the fatal attack, he was found out of bed, on the floor, in a state of coma, with stertorous breathing,—the right side, arm, and leg paralyzed, with an extremely feeble pulse and cold extremities. He was not altogether insensible, as he could be roused for a minute or two, by speaking loudly, when he seemed to recognize those about him, but he was unable to speak, or to move the arm or leg. The excito-motory phenomena were still persistent. Cataplasms of linseed-meal and mustard were applied to the nape of the neck and soles of the feet, and ammonia and camphor-mixture administered. After a time, slight re-action came on, when a turpentine injection was thrown up, a grain of calomel was given every four hours,

and a blister applied to the nape of the neck. He did not recover his speech, nor the use or feeling of his hand or arm. He had occasional convulsive shudderings, and died during the second night of the attack.

Post-mortem inspection.—The vessels on the superficies of the brain were tinged with black blood; at the basis, the vessels themselves were in an unhealthy condition, presenting spots of yellow deposit on their coats. The convolutions of the brain were very marked, and there was a greater abundance of grey substance than is generally observed; the white matter had a dingy look. On opening the lateral ventricles, the right presented nothing abnormal; but in the left, the top or upper surface of the corpus striatum was greatly distended, and partially ruptured by a clot of blood passing upwards. The ventricle was filled with black blood, which extended into the cerebral substance beyond it, in the direction of the fissura Sylvii. About one-third of the thalamus opticus was softened down, and mixed with the bloody degeneration of its substance.

Mr. Dunn considered that the most characteristic point about the case was the condition of the left lateral ventricle, the state of the corpus striatum, and the thalamus opticus, when viewed in connection with the hemiplegia of the right side. Feeling, and the power of moving the arm and leg, were lost, and both the thalamus and corpus striatum were seriously implicated. So far as Mr. Dunn's own observation had extended, and so far as he had had opportunities of pursuing this interesting inquiry by post-mortem investigations, they led him to support the opinion, that in the great nervous centre, the brain, the corpora striata were the seat or source of voluntary motion, and the thalami optici, of common sensation or feeling.

THE FOLD OF THE GROIN.

M. PETREQUIN calls particular attention to the disposition of the *fold of the groin*. Its depth augments when the thigh is flexed and rotated inwards, and diminishes when the limb is extended; but it is never obliterated, and is very deep and well defined, in ascites; (it would have been more to the purpose to have mentioned that it is persistent in extreme cases of anasarca). This permanence of the fold of the groin M. Petrequin attributes to the integuments being directly and firmly attached to the symphysis pubis by a radiate expansion of fibro-cellular tissue, which he names the *cutaneous ligament* or *suspensory ligament of the fold of the groin*. The skin is also similarly but not so firmly attached to the spine and crest of the ilium. —*British and Foreign Med. Review.*

Medical Intelligence.

UNIVERSITY OF LONDON.

EXAMINATION FOR THE DEGREE OF M.D.

M.D. PASS EXAMINATION.—1845.

Monday, November 24.—Afternoon, 3 to 6.

Case in Surgery.

Examiners, Mr. Bacot and Sir Stephen Hammick.

"Mr. W. W., a gentleman farmer of a corpulent habit of body, in the 46th year of his age, now living in the parish of Udimore, within three miles of Rye in Sussex, was attacked about eight years ago with severe complaints in his loins, accompanied with an incapacity of voiding his urine without the assistance of proper medicines: which were administered to him by a neighbouring apothecary for that purpose.

"These medicines had the desired effect. They promoted a secretion and an evacuation of urine; the urine was loaded with a considerable quantity of gravelly particles mixed with mucus of a whitish colour. In the space of three weeks he had perfectly recovered from this attack, and continued well for near five years afterwards, without any return of his complaint, except when he rode hard on horseback, or drank more freely of strong liquors than usual. At the expiration of five years he was seized with an acute fever, of which he recovered in a few weeks. Very soon after his recovery from this illness, he began to complain of excessive pain in voiding his urine, or in going to stool: these symptoms were so greatly increased for many months before he submitted to the operation, as to disable him from riding, from walking, or from using any kind of exercise, without aggravating his complaints: his urine was of late continually and involuntarily flowing from him in small quantities. He complained of great pain and soreness in his fundament, attended with a tenesmus. This account he delivered to me on the second day after the operation; and at the same time very feelingly told me that he had enjoyed but few and very short intervals of ease for the last three years till since the operation. Having first prepared him for the operation in the manner I usually do upon the like occasions; that is, by keeping the patient upon an abstemious diet, a week or ten days before the operation, by bleeding; if the patient be plethoric, by giving two or three purges of oil and manna at two or three days' distance from each other, and an oily purging clyster the night preceding the operation, or very early on the same morning of the operation. On the 30th of January, 1758, I cut him at his

house in Sussex, and extracted from his bladder the four rough stones which I have now the honour of exhibiting to the Royal Society, and which, at your request, I have caused to be engraved, that this memoir might be made more complete and useful than it otherwise would have been. The surfaces of these four several stones appear to be rough, and have not the least marks of having rubbed against each other during their confinement in the bladder: but yet I conjecture this must frequently have been the case, as there was no difficulty in embracing these calculi with the forceps; for had they been contained in different cells or pouches, as has sometimes been observed from dissections, this circumstance must have rendered it impracticable for me so immediately to have got at them, if at all.

"The forceps was introduced three times only into the bladder for effecting the extraction of the first three stones, and twice only for the extraction of the fourth stone: besides the four stones which I have presented to the Society for their inspection, I thought it not improper to produce, at the same time, some other human calculi for their further satisfaction: each of which was found single in the urinary bladders of different subjects: the surfaces of these stones may be observed to be much smoother than the surface of either of the four stones that were extracted from Mr. W.'s bladder in the operation I have just now recited; and, therefore, it was more reasonable to expect to find each of these stones accompanied with one or more stones in the same bladder (according to the generally received opinion), than it was to find more stones than one in the case of Mr. W., which has given rise to this observation; but as the fact before us does sufficiently shew the impropriety and danger of absolutely determining from the surfaces of such extraneous bodies, I think it needless to enlarge upon this subject, to strengthen those precautions so reasonable to be attended to in this operation: however, as I have already taken notice of the smooth and polished appearances of the surfaces of such stones as are probably never found single in the bladder, I have produced two stones of this kind that were extracted from one and the same bladder, to shew that these stones do no more resemble those stones of Mr. W. than a piece of polished marble can be said to resemble a rough block of the same species.

"Mr. W.'s wound was healed in seven weeks after the operation; ever since that time he has continued perfectly well."—*Warner's Cases in Surgery*, Case XLVI.

In commenting on this Case, state the various methods of performing the operation of Lithotomy that have been recommended and practised; mention the objections to, and the advantages of, each, and state to which

you would give the preference, and your reasons for such preference. Detail the after treatment of the patient, and enumerate the principal dangers attending or following the operation, and the most usual cause of death when the case has a fatal termination.

Commentary on a Case in Medicine.
Celsus de re Medica.

Examiners, Dr. Billing and Dr. Tweedie.
Case in Medicine.

W. H., æt. 38, of intemperate habits, applied for advice in the beginning of October, chiefly on account of headache and defective vision, which after appropriate treatment in a great measure disappeared in the course of fourteen days. Towards the end of the month he had hæmoptysis accompanied by difficulty of breathing and some degree of fever, which were removed by mild antiphlogistic measures, the hæmoptysis however recurring occasionally. In the beginning of November constant sickness and frequent vomiting came on, which after being for a short time arrested returned with some violence. About this period attention was drawn to the condition of the urine: it averaged in quantity about twenty-four ounces daily, was of a very pale colour, of the density of 1010, and slightly congluable. Soon afterwards a constant tendency to watery diarrhoea manifested itself. In the middle of December he became somewhat drowsy, and in a fortnight afterwards anasarca made its appearance, and there were signs of hepatization of the lower lobe of each lung, with crepitation on the upper half of the right. These symptoms were somewhat relieved, with the exception of the protracted fits of vomiting, by the treatment employed. In the beginning of February the diarrhoea increased, accompanied with occasional attacks of more severe vomiting, his pulse became feeble and rapid, his countenance leucophlegmatic, and he complained of great exhaustion; but there was no difficulty of breathing, no anasarca, and the discharge of urine was copious, and of higher specific gravity. The diarrhoea, however, continued to resist every remedy: the urine rapidly diminished in quantity, he became more and more exhausted, and died on the 9th of February.

What do you consider to have been the nature of this disease? What morbid appearances would you expect to find on examination of the body? How would you have treated the case?

Celsus.

Provisis omnibus quæ pertinent ad universa genera morborum, ad singulorum curationes veniam. Hos autem in duas species Græci diviserunt, aliosque ex his acutos,

alios longos esse dixerunt: ideòque, quoniam non semper eodem modo respondebant, eosdem alii inter acutos, alii inter longos retulerunt: ex quo plura eorum genera esse manifestum est. Quidam enim breves acutique sunt, qui citò vel tollunt hominem, vel ipsi citò finiuntur: quidam longi, sub quibus neque sanitas in propinquo, neque exitium est: tertiumque genus eorum est qui modò acuti, modò longi sunt; idque non in febribus tantummodò, in quibus frequentissimum est, sed in aliis quoque fit. Atque etiam præter hos quartum est, quod neque acutum dici potest, quia non perimit; neque utique longum, quia, si occurritur, facillè sanatur. Ego, quùm de singulis dicam, cujus quisque generis sit, indicabo. Dividam autem omnes in eos qui in totis corporibus consistere videntur, et eos qui oriuntur in partibus. Incipiam à prioribus, pauca de omnibus præfat. In nullo quidem morbo minùs fortuna sibi vindicare quàm ars, potest: utpote quum, repugnante natura, nihil, medicina proficiat. Magis tamen ignoscendum medico est parùm proficienti in acutis morbis, quàm in longis: hìc enim breve spatium est, intra quod, si auxilium non profuit, æger extinguitur: ibi et deliberationi et mutationi remediorum tempus patet; adeò ut rarò, si inter initia medicus accessit, obsequens æger sine illius vitio pereat. Longus tamen morbus quùm penitus insedit, quod ad difficultatem pertinet, ætuo par est. Et acutus quidem, quò vetustior est; longus autem, quò recentior, eò faciliùs curatur. Alterum illud ignorari non oportet; quod non omnibus ægris eadem auxilia conveniunt. Ex quo incidit, ut alia atque alia summi auctores, quasi sola, vindicaverint, prout cuique cessarent. Oportet itaque, ubi aliquid non respondet, non tanti putare auctorem quanti ægrum, et experiri aliud atque aliud: sic tamen ut in acutis morbis citò mutetur quod nihil prodest: in longis, quos tempus ut facit sic etiam solvit, non statim condemneter, si quid non statim profuit; minùs verò removeatur, si quid paulùm saltem juvat, quia profectus tempore expletur.—*Lib. iii., Cap. i.*

PROLAPSUS UTERI CURED BY PREGNANCY.

I LOOK upon it that many women recover from very troublesome prolapsus (uteri) by a succeeding pregnancy. I have seen women perfectly restored to health after a pregnancy and lying-in, who had been much distressed by prolapsus for some years before.—*Dr. Meigs.*

SYRIAN THERAPEUTICS.

A SYRIAN physician being asked in what way he supposed tartar emetic to affect the system, declared that he thought it acted by its *specific gravity*!

Selections from Journals.

ANIMAL CHEMISTRY.

ON THE PROPORTION OF NITROGEN CONTAINED IN ALIMENTARY SUBSTANCES TAKEN FROM BOTH THE ORGANIC KINGDOMS, AS A COMPARATIVE MEASURE OF THEIR NUTRITIVE POWER. BY DR. J. SCHLOSSBERGER AND ALEXANDER KEMP, ASSISTANT CHEMICAL TEACHERS IN THE UNIVERSITY OF EDINBURGH.*

THE distinction between the elements of the reproductive and those of the respiratory functions, is probably one of the most fertile ideas for which physiology is indebted to modern chemistry; even if we do not admit that division in its full extent, nevertheless we must allow it to be a beautifully conceived idea, and one founded on a great amount of observation. It may be assumed with safety that no other classification of the substances comprised under the vague designation of alimentary bodies has in an equal degree represented the essential differences in their chemical composition and their physiological effects, or has presented to the eye of the mind the important part which these substances perform, as the above-mentioned distinction, which is also identical with that of *azotised* and *non-azotised* bodies.

In order to give some indication of the state of confusion which existed, even in this most elementary proposition of dietetics, previous to that distinction being made, it may not be more than necessary to mention the idea of that classical author, Dr. Prout†, that the nutritive power is in direct proportion to the quantity of carbon. At the present day not a single fact is known which can support the idea of the animal body being able to form azotised from non-azotised substances,—possibly, under the influence of ammonia or of nitrogen from the atmosphere; on the contrary, all experiments, as well as daily observation, seem to prove the absolute necessity of azotised food for the preservation of the individual. Chemistry has likewise demonstrated the presence of a more or less high, but constant proportion of nitrogen in all the tissues and fluids of the animal body, while in all those substances which, according to our modern ideas, are the most nutritive, namely, the *proteine* compounds, the carbon is present in medium quantity. Those substances esteemed by Prout the most nourishing, because richest in carbon, as the fats

and oils, must be altogether excluded from the list of reproductive bodies, except in so far as fatty matter is necessary to the formation of animal cells. The chemical physiologist could make use of the theory of Prout, in measuring the fitness of the bodies necessary to respiration, if along with the carbon could be taken into account the quantity of combustible or unoxidized hydrogen contained in them; but for those substances, which in the strict sense of the word are capable of being transformed into blood and animal tissue, according to our present knowledge, the capability for these purposes may be estimated relatively by the amount of nitrogen. This has been already done to a certain extent by the researches of several chemists and physiologists, but, so far as we are aware, it has been confined to vegetables; and it therefore appeared to us not to be without interest to make use of the same principle in extending the investigation to the various alimentary substances taken from the animal kingdom, and so to give to the physiologist a basis founded on facts in a department which has hitherto been so defective in the mysterious doctrine of nutrition.

Already Boussingault and Liebig have demonstrated, that in general the amount of proteine compound, and therefore that of nitrogen, is in a direct ratio to the phosphates; this proposition has as yet been extended only to vegetable matters, but will most probably preserve its value when applied likewise to those derived from animals. In so far as the nitrogen may be taken as an indication of the quantity of these salts, we could not find any observations as to how far it might be also applied to the gelatinous compounds; and we have alluded to this as a very interesting field for future research, particularly with regard to the phosphate of lime, which seems so universal and so necessary to the whole animal economy.

It seems to be at present a proper time to overcome an objection, which, if not alluded to, might have been made against our attempt to determine the nutritive power of animal aliments; it is with regard to the delicate question of the use of animal gelatine, which seemed to Mulder, and likewise to us, as not at all decided by the experiments lately made at Paris. It is a fact sufficiently proved by the experiments of Magendie, Tiedemann, and Gmelin, that any substance, even the most nourishing, if very simple and used without admixture, cannot sustain animal life for any length of time; and if it was proved at Paris that dogs fed exclusively on gelatine perish, it is far from being just to conclude that the substance is not nutritive, as we should be compelled to apply the same rule to albumen and fibrine, by the exclusive use of which an

* Lond. and Edinb. Phil. Mag., Nov. 1845.

† See Mayo's Outlines of Human Physiology, p. 266, second edition, London, 1839.

animal would no less speedily perish. At all events gelatine has a high value as nutriment, if even that value arises alone from its being useful in the formation of gelatigenous tissues; in addition, the gelatigenous tissues, as well as those containing proteine, in regard to their formation and chemical constitution, seem to lie in close relation, although that relation is at present not perfectly understood.* The experience of our best physicians at the bedside of the patient tends to prove that during convalescence a well-prepared gelatinous diet, but not exclusively gelatinous, is highly nutritious.

All organic alimentary substances, as presented to us by nature, are mixtures, but seem to be pretty constant in their compo-

sition, although variously modified by our different modes of cooking them. Of such natural mixtures, the greater part taken from vegetable bodies have already had the proportion of nitrogen contained in them determined by previous observers; and we believe we shall best introduce the subject by a concise representation of that which has been done in regard to the vegetable part of our aliments, which will likewise afford the best means of comparing the results of our experiments on animal substances.

The following table shows the amount of nitrogen contained in 100 parts of the dry vegetable bodies named in it:—

Rice	1.3
Potatoes	1.5
Turnips	1.7
Rye	1.7
Oats	2.2
Wheat	2.0 to 2.3
Carrots	2.4
Barley	2.0
Maize	2.0
Peas	3.8
Lentils	4.4
Haricots	4.5
Beans	5.1

White bread	2.27
Brown bread	2.63
Glasgow unfermented bread	2.14
Essex flour	2.17
Canada flour	2.21
Lothian flour	1.96
United States flour	1.82

Agaricus deliciosus	4.6
... russula	4.2
... cantharellus	3.2

Boussingault, *Economie Rurale*.
Paris, 1844, tome 2, p. 438.

R. D. Thomson, in the London
and Edinburgh Philosophical
Magazine for November, 1843.

Schlossberger and Dœpping, Lie-
big's *Annalen* for October, 1844;
Chemical Gazette, July 15, 1845.

Boussingault has calculated from the results of his experiments, that which he calls the equivalent nutritive powers of these substances for the domestic herbivorous animals, and Thompson has also given one for those bodies which he examined. We omit these tables, as we have the intention of constructing a table of our own for all the substances which are used as food by man, and which have been hitherto examined in this respect.

We may now proceed to the relation of our experiments. All the substances made the subject of observation were first carefully dried at 212°F., and then analyzed according to the method of Varrentrapp and Will, slightly modified to overcome some practical difficulties.

Intermediate between animal and vegetable aliment, as daily observation teaches and chemical analysis confirms, is to be

found the most general food of the young of the class Mammalia, namely, *milk*.

The proportion of nitrogen in purified muscular fibre seems to be identical, from whatever part of the animal kingdom it may be obtained; and the differences given by the results of analysis may be fully explained by the difficulty, or even impossibility, of analysing it in an equally pure or impure condition, as obtained from different animals, in which it is always mixed with cellular tissue, minute vessels and nerves. Moreover, it is extremely difficult to get rid of traces of fat and hematine.

That the chemical properties of muscular fibre in the whole animal kingdom are identical, one of us endeavoured to prove in a former research (Schlossberger, *Vergleichende Untersuchungen über das Fleisch verschiedener Thiere*. Stuttgart, 1840.) In contradiction to a very generally received opinion, it appears to us that the muscles of fish are as rich in nitrogen as those of higher

* See Mulder's Chemistry of Animal and Vegetable Physiology, translated by Fromberg, 319 and following pages.

animals; at first sight, however, owing to the presence of a greater quantity of water, and in some fishes, as the eel, to a difficultly separable fat, its amount appears very much lower. Further, as the proximate principles are essentially the same in both classes of animals, it seems to us that they should be equally nutritive, although this proposition is also directly opposed to another very general prejudice. According to our scale, the oyster does not seem nearly so nourishing as it is generally reputed to be by common opinion, although it is possible that the proteine compounds in the lower classes of animals may be found to be much richer in phosphorus, in sulphur, and in phosphates, than in the higher. Should this prove to be the case, we can see, that although the proportion of nitrogen may not be so great, nevertheless that they might act more powerfully as *stimulants*, which, as regards the oyster, is believed by some of our best physicians. We intend in a future series of experiments to direct our attention to this part of the subject.

In order that our views on this subject should not be misunderstood, it is necessary for us to state, that we do not consider the proportion of nitrogen, taken alone, to be an absolute measure of the nutritive power of our aliments; but as there is a total want of any positive data in regard to this subject, and as so many different and contradictory opinions are given in the works on dietetics*, it must be granted that any attempt to fix a standard for comparison is not without interest.

With respect to the capability for nutrition, we are far from denying that the physical condition, the state of admixture, the peculiar kind of proteine compound, the amount of water and other inorganic matters, of fat, and lastly, the effects of cookery, must necessarily have a very great influence on the physiological effects of our aliments.

There is one consideration in particular which requires to be noticed, namely the distinction between the absolute amount of nutritive matter and that portion of it which is in such a state as to be easily digested and assimilated by the system, in the same way as a soil produced from minerals abounding in alkaline salts is not always the most fertile as regards plants with a predominance of alkaline bases, but the fertility of which depends on the amount of these bodies contained in a state in which they can be taken up and made use of by the plant. *Thus an aliment abounding in nutritive matter may be inferior to one with a much smaller quantity as regards the nourishing*

*effects produced by it; if in the first of these cases only a part, in the second the whole, may be easily absorbed and assimilated.** Here we must rely upon the experiments of the physiologist as to the degree of digestibility of different substances; and there already exists an excellent basis in the researches of Beaumont and of Blondlot. This is one of the questions, in which, by the co-operation alone of the physiologist and chemist, any progress can be expected to be made in the elucidation of this point. If the work were once fairly begun by the physiologist, chemistry would not be long in rendering that assistance which would then be found necessary; for example, in the various experiments which might be made in artificial digestion, from the results of which as one element in the calculation taken along with the proportion of nitrogen as the other, it would at once be possible to determine scientifically the real nutritive value of the different kinds of aliment; the importance to our dietetics of this method of determination, which at present exists only in idea, would then not only be felt by the patient, but by the whole human race.

Table of the comparative proportion of nutriment in our organic aliments.† If we assume the amount of nitrogen in human milk, perfectly dried at 212° F., to be represented by 100, we can then express the degree of nutritive power of the other alimentary substances by the following numbers:—

<i>Vegetable.</i>	
Rice	81
Potatoes	84
Turnips	106
Rye	106
Maize	100 to 125
Barley	125
Unfermented bread of Glasgow	134
Oats	138
White bread	142
Wheat	119 to 144
Carrots	150
Brown bread	166
Agaricus cantharellus	201
Peas	239
Agaricus russula	264
Lentils	276
Haricot beans	283
Agaricus deliciosus	289
Beans	320
<i>Animal.</i>	
Human milk‡	100
Cow's milk	237

* This is a most important fact, which is, however, almost entirely overlooked in the iatro-chemical theories of the day.—*Ed. Gaz.*

† We here omit the details of the experiments, and give only a summary of the results.

‡ Human milk is, according to most analyses, one of the poorest in caseine, and in this respect is very far inferior to that of the cow, but in

* See all works from Rienk's *Bromatologia* to the latest, as Paris's *Treatise on Diet*, as well as our standard works on *Materia Medica*, and we think it will be allowed that we have not asserted too much.

Oyster	305
Yolk of egg	305
Cheese	331 to 447
Eeel, raw	434
" boiled	428
Liver of crabfish	471
Mussel, raw	528
" boiled	660
Ox-liver, raw	570
Pork-ham, raw	539
" boiled	807
Salmon, raw	776
" boiled	610
Liver of pigeon	742
Portable soup	764
White of egg	845
Crabfish, boiled	859
Skate, raw	859
" boiled	956
Herring, raw	910
" boiled	808
" milt of	924
Haddock, raw	920
" boiled	816
Flounder, raw	898
" boiled	954
Pigeon, raw	756
" boiled	827
Lamb, raw	833
Mutton, raw	773
" boiled	852
Veal, raw	873
" boiled	911
Beef, raw	880
" boiled	942
Ox-lung	931

Purified muscular fibre from various animals.

Fibre of eel	908
" salmon	982
" herring	914
" haddock	988
" flounder	988
" pigeon	775
" lamb	916
" sheep	928
" calf	993
" ox	935
" sow, ...	893

Proximate principles of animals, calculated from the quantity of nitrogen as determined by Mulder.

Pure proteine	1006
" albumen	996
" fibrine	999
" caseine	1003
" gelatine	1128
" chondrine	910

consequence of this may probably be more easily digested. The amount of nitrogen in milk, which corresponds to that of caseine, comes much nearer to the proportion contained in vegetables than any other kind of aliment from the animal kingdom.

PATHOLOGY.

OBSERVATIONS ON A PECULIAR FORM OF DISEASE OF THE HEART, ATTENDED WITH ENLARGEMENT OF THE THYROID GLAND AND EYEBALLS. BY DR. R. L. MAC DONNELL.

THE author relates two cases of heart disease attended with symptoms of a remarkable character: these singularities he believes have not been attended to by any other writers upon the subject, with the exception of Drs. Graves and Stokes. The former of these gentlemen first directed attention to what the author considers to be the incipient stage of this form of disease, in one of his Clinical Lectures published in the MEDICAL GAZETTE. "I have lately seen (he says), three cases of violent and long-continued palpitations in females, in each of which the same peculiarity presented itself, viz. enlargement of the thyroid gland. The size of this gland, at all times considerably greater than natural, was subject to remarkable variations in every one of these patients. When the palpitations were violent, the gland used notably to swell and become distended, having all the appearance of being increased in size, in consequence of an interstitial and sudden effusion of fluid into its substance. The swelling immediately began to subside as the violence of the paroxysm of palpitation decreased, and during the intervals the size of the gland remained stationary.

The first case related by the author is that of a man, ætat. 55, formerly a weaver, of temperate habits, but accustomed to hard work. In the year 1838, he began to suffer from palpitations, unaccompanied by pain, and with inability to lie on his left side. Shortly before the palpitations became so very distressing, he noticed a small tumor in the region of the thyroid gland, which gradually increased to its present size, without causing any pain or other inconvenience, excepting a feeling of constriction or tightness at the part, which interfered somewhat with the voice. He was also tormented with excruciating headaches, and a throbbing in the head; his sleep was always bad, being disturbed by frightful dreams, and by the pulsation in his head, which for some years rendered anything like refreshing sleep a complete stranger to him. When he first came under treatment, five years ago, he complained chiefly of violent palpitations and of great debility, so great as to be unable to walk across the ward; pulse 100 and weak; enormous action of the heart, particularly of the right ventricle (this was inferred from the pulsation being more evident near the sternum than any where else): no increase of dulness; nor was there any abnormal bruit accompanying the sounds of the heart, which were natural, except for their great sharpness and loudness. The respira-

tion was quite good in both lungs. The two lower thirds of the neck were occupied by a soft flabby tumor, corresponding to the lobes of the thyroid body, the left portion of the tumor being much larger than the other. The whole tumor measured sixteen inches and a half around its most prominent part to the sixth cervical vertebra. On the hand being placed over it, a remarkable thrill was communicated, particularly on the left side, quite similar to that which is felt in aneurismal varix. This thrill was evidently independent of any motion communicated to the tumor from the carotid arteries, and was manifestly generated in the growth itself. On placing the stethoscope over the tumor, an intense musical bruit was heard; and this was also heard over the carotids, though in these situations it was less musical. He had no stridor or difficulty of swallowing.

He then left the hospital somewhat improved, and went to the country, where his strength increased, though the violent palpitations continued. For the next four or five years his state remained pretty much the same as above, but, during this period, the eyeballs were observed to become much increased in size, and to have assumed a peculiarly wild and staring appearance. This alteration was unattended by any pain, dimness of vision, or other inconvenience. The eyes continued gradually increasing till about two years ago, when they ceased to enlarge, and remained stationary for a year or so. During the time they were increasing, the thyroid gland retained its former size and characters, and the heart's action continued as distressing as before; but when the eyeballs ceased to enlarge the consistence of the tumor in the neck became much firmer, and now, for the first time, the heart became more tranquil, and he began to experience some relief from his long sufferings. For the last year his improvement has progressed uninterruptedly. His strength has been daily increasing; the eyeballs have also much diminished, though they still retain some of the peculiar staring; the enlarged thyroid has become more solid, but still presents the peculiar thrill of aneurism by anastomosis; the heart's action is now tranquil and unaccompanied by any abnormal sound; the pulse is full, regular, soft, and only 80.

The second case is one of a woman, æt. 22, who, a few months before she came under Dr. Mac Donnell's care, having suffered from some uterine irregularity, began to experience violent headaches; palpitations also now set in, and she suffered from great lightness of the head, amounting almost to fainting, and she began to notice enlargement of the eyeballs, and a peculiar staring appearance they assumed, which attracted the attention of all her friends, and on more

than one occasion induced them to think that she was maniacal. At the first report, the pulse was 120, weak but regular; respirations 24. The action of the heart was excessively strong; the impulse was visible all over the cardiac region, (it is mentioned, in another report, that the dulness, in this situation, was not increased) but much more perceptibly over the right of this space, along the edge of the sternum, where there was a distinct fremitus. There was no bruit de soufflet, except towards the origin of the aorta, whence it extended up along the course of the vessel for a few inches, accompanying the first sound. About a year has elapsed since this report was made, and although her general health is somewhat improved, the heart symptoms do not appear to be altered, and the eyes are much protruded. The author also refers to two other cases of patients suffering from heart affections in whom he noticed this protrusion of the eyeballs; in the first of these the eyeballs became so much enlarged and protruded as to render it impossible to close the eyelids.—*Dublin Journal of Medical Science.*

[In the above instances, the real state of the heart must remain, in a great measure, doubtful; but it probably varied in the different cases: we apprehend, however, that it is not difficult to account for the protrusion of the eyeballs, and the temporary increase in the size of the thyroid tumor, (which has happened to exist independently the heart affection) upon common principles. In most cases where there is great obstruction to the return of the venous blood from the head, upon whatever cause depending, the eyes have a prominent staring appearance; this is, in all probability, owing to congestion of the veins at the back of the orbit. The details of the first case render it very apparent that the patient had disease of the thyroid gland (probably that which was termed "aneurismatic bronchocele" by Prof. Langenbeck), previously to becoming affected with some cause, either of cardiac or pulmonary obstruction, which, while it prevented the free transit of the blood through the right cavities of the heart, caused venous delay in the enlarged vessels of the diseased gland; this, under the obstructed state of the circulation, becoming a sort of reservoir for the retarded blood. When the heart's action became tranquil the tumor became much firmer, and the eyeballs ceased to enlarge. In the different cases referred to the cause of delay may have varied both in kind and situation, but we should attribute the enlargement both of the eyeballs and of the thyroid tumors entirely to the effects of venous engorgement.—*Ed. Gaz.*]

Lectures.

CLINICAL LECTURE ON DROPSY WITH ALBUMINOUS URINE;

Delivered at King's College Hospital,

Nov. 29, 1845.

By Dr. Todd.

Reported by Mr. J. S. Lavies.

GENTLEMEN,—The subject I have chosen for my lecture to-day is "Dropsy with Albuminous Urine." I make use of this expression in preference to the word "Albuminuria," which is so commonly employed now, because it expresses the prominent features of the disease, and does not, as the high-sounding title, *albuminuria*, fix the attention exclusively on that which is only a *single symptom*, and not the disease itself.

We may have dropsy without albuminous urine. In many cases of cirrhosis of the liver ascites is present, but no albumen can be detected in the urine. So, again, in cardiac disease, dropsy, without albumen in the urine, often exists. A case was in the hospital in the early part of October last, where there was considerable dilatation of the right side of the heart, and excessive dropsy, but no albumen was discoverable in the urine. Dropsy being a symptom of great urgency, and taking a very prominent position in the following cases in which the urine was albuminous, I think I may fairly class them together under the general head—"Dropsy with Albuminous Urine."

I shall ask your attention to four cases, two of which are now in the hospital, and the other two have lately been in it.

CASE I.—The first case is that of a boy, five years old, who has had scarlet fever, which seems to have run its usual course. About three weeks after the abatement of the fever he became universally dropsical. His urine was found to be scanty in quantity, smoky in colour, presenting a dark appearance, as if mixed with carbonaceous matter. On the application of heat, or of nitric acid, it yielded an abundant precipitate of albumen. Under the microscope other constituents of the blood were plainly seen, namely, blood discs and fibrinous casts of the uriniferous lobes. There was also a large quantity of lithic acid. The skin was dry, not freely secreting, and some fever was present. In order to promote the

action of the skin I employed the warm-bath and sudorifics, Liq. Ammon. Acet., with Nitre, and as the presence of blood in the urine indicated congestion of the kidney, a few leeches were applied to the loins. Not three days have passed, and the dropsy is almost cured. The urine is more copious, less albuminous, and less smoky.

CASE II.—The second case is that of a woman, 25 years of age, in the sixth month of pregnancy at the time of her admission. She had always enjoyed good health till about a month ago, when she caught cold, and became troubled with cough and hoarseness. A fortnight after this she observed a swelling of the labia pudendi and of the legs; her urine became scanty, and in it she noticed a red sediment. When she came into the hospital there was considerable oedema of the labia, and of the lower extremities, accompanied with some fluctuation of the abdomen. The urine was scanty, smoky, and highly acid; it was turbid, and abundantly albuminous; it contained lithate of ammonia, and had a sp. gravity of 1.027. The microscope was not used; but the presence of blood was sufficiently evinced by the smoky and albuminous character of the urine. The skin was dry. In this case I endeavoured to promote the healthy action of the skin by the use of warm baths, and by the administration of Dover's Powder and Antimony. Under this treatment the albumen soon disappeared from the urine, and the dropsy from the legs, and in twelve days all the symptoms that had previously been present had vanished.

I may here remark, that such cases as those now quoted have long attracted the notice of physicians, and that cases like the former were first described by Dr. Wells; and those, like the latter, by Dr. Blackall. These latter cases, as spoken of by Dr. Blackall, have generally received the title of "Inflammatory Dropsy."

CASE III.—A woman, between 40 and 50 years of age, laboured under disease of the mitral valves, which favoured the regurgitation of the blood from ventricle to auricle, so causing obstruction to the circulation through the heart, and hence to the venous circulation generally. This patient had an enlarged liver; she was universally dropsical; her urine was smoky, and highly albuminous. She died; and on a post-mortem examination the kidneys were found to be very much congested in common with the liver and other internal organs. *There was no sign of disease in the elementary structures of the kidney.* The albumen which appeared in the urine depended on the congestion of the vascular apparatus of the kidney.

CASE IV.—Thomas Ould, aged 43, now

in the house. He is a silversmith, and once lived very freely, but has been quite temperate for the last four years. His trade is one which exposes him to frequent alternations of heat and cold. Long ago he noticed, that at every fresh exposure to cold the quantity of his urine sensibly diminished. During the November of last year he was seized with gont in the ankle, and in the February following œdema commenced in his foot, gradually extending upwards until he became universally dropsical. About sixteen weeks ago he was admitted into St. Bartholomew's Hospital, where he greatly improved under the treatment to which he was submitted. After he left, however, the disease returned, and he soon found himself worse than ever. Six weeks before he came into King's College Hospital he experienced pain in the chest, and has had dyspnoea ever since. There is probably some thickening of the mitral valves—perhaps, of others; a rough sound, heard at the apex, attends the systole of the heart. He has now dropsy in every part of the body; he presents a white and waxy look; his liver is large; his skin does not act; his urine is sufficient in quantity; its sp. gravity comes within the range allowed for healthy urine—1.020. It is not smoky; it contains an abundance of lithates, and is highly albuminous. *This case differs from the others in exhibiting a deposit in the urine of epithelial particles, which are found, under the microscope, to be loaded with fat.* The object I have had in view in the treatment of this case has been to carry off fluid, and with it such morbid materials as have been retained in the blood in consequence of the imperfect action of the skin and kidneys. The patient has had the Pulv. Jalap. Comp. and Calomel; hot-air baths have also been used. He has been put upon a diet from which non-azotized matters have been excluded. Under this treatment the dropsy has somewhat improved, but the same deposits continue to be found in the urine.

In all these cases we have evidence of congestion of the kidney.

1st.—*From the smoky urine.* (In three cases out of the four quoted.) This appearance presented by the urine is due to the presence of blood corpuscles, the colouring matter of which is blackened by the acids of the urine. The presence of the red particles in the urine is in my mind a certain indication of rupture of some minute vessels, inasmuch as a red particle is far too large to escape through the pores of capillary vessels.

2dly.—*From the existence of albumen in the urine.*—This depends on the escape of the serum of the blood, consequent upon congestion, from the vessels into the unife-

rous tubes; and it may take place either with or without rupture.

3rdly.—*From the presence of fibrinous moulds.* The fibrine of the blood having escaped into the tubes, adapts itself, when it coagulates, to their form; and when at last it is brought away, it represents an exact cast of the tube it occupied, carrying with it sometimes an epithelial cell; healthy, or unhealthy.

Now this congestion, of which I have been speaking, as evidenced by these three conditions of urine, may be either partial or general; but if partial, then some of the congestion must have existed in a Malpighian plexus; for, from the position of the portal plexus external to the tubes, a hæmorrhage into the tubes is not likely to result from a congestion limited to that plexus. Even when the whole quantity of blood in the gland is small, these phenomena may occur, provided some of that little be unduly accumulated in one or more Malpighian plexus.

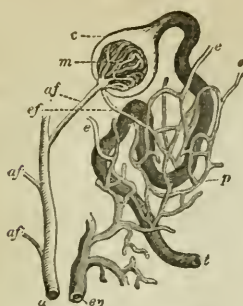
You will understand these points better if I briefly call your attention to the anatomy of the gland. An accurate knowledge of the relations of the secreting and vascular parts of the kidney is of the highest importance to both the physiology and pathology of the organ; so important, indeed, that I hesitate not to say, that no one who is ignorant of them is competent to offer an opinion respecting diseased states of this gland.

1st.—*Of the secreting apparatus of the kidney.* This consists of lightly convoluted tubes, each one at its origin, that is, at its connection with the vascular system, presenting a cyst-like dilatation, which surrounds a peculiar portion of the vascular apparatus, called the Malpighian plexus. The mass of the kidney is composed of such tubes. Their structure is basement membrane, lined with cells of epithelium. Dr. Johnson has ascertained, that in many of these cells a small quantity of fat exists. It must be remembered that the condition of this epithelium affords a most important indication of the state of nutrition of the gland. If its nutrition be perfect, then its secreting functions will be well performed, and the epithelium will be healthy; but if, on the other hand, its nutrition be impaired, one of the results will be unhealthy secretion of epithelium.

2dly.—*The vascular apparatus.* (Fig. 1.)

The renal artery breaks up in the substance of the kidneys dividing and subdividing, till at last several small arteries are formed (*the Malpighian*), each of which passes toward an uriniferous tube, pierces its wall, and terminates in a minute tuft (*the Malpighian plexus or tuft*), within the dilated origin of the tube. Out of the tuft a small vein arises, which makes its exit by piercing

FIG. 1.

*Plan of Structure of the Kidney. (Bowman.)*

a. artery; *af.* afferent vessel; *m.* Malpighian tuft; *c.* Malpighian capsule; *t.* tube; *ef.* efferent vessel; *ee.* efferent vessels from other Malpighian bodies; *p.* portal plexus, surrounding the tube; *ev.* emulgent vein.

the wall of the dilated extremity of the tube; this vein breaks up into a venous plexus, called the "portal," from the obvious analogy which it bears to the portal system of the liver. From the portal plexus larger and less numerous veins arise, which, by their junction, form the renal or emulgent vein.

The course of the circulation in the kidney, then, may be described as follows. Before the blood can get to the renal vein it must pass through the Malpighian and portal plexuses; the former within the dilated origin of the uriniferous tube, the latter external to and surrounding the walls of the tubes; and this difference is very important. If an accumulation were to take place within the tubes, what would be the result? The portal plexus would be pressed, and the circulation in it retarded; the blood would consequently be thrown back on the Malpighian tuft, and congestion there would result. It is worthy of notice, that the vessels which compose the Malpighian plexus are very delicate in their texture, and peculiarly favourable to admit of the filtration of fluid; and if the congestion goes so far as to cause rupture, the red particles and fibrine escape into the tubes. Whenever you meet with serum of the blood in urine, you may at once conclude that there is congestion of the kidney—in one Malpighian plexus, at least; and whenever red globules are present you may be sure that rupture has taken place. The tubes have in such cases been found injected with blood.

What is the cause of congestion in the several cases that I have mentioned? Let me take them "*seriatim.*"

I. How does it happen that dropsy, with

albuminous urine, occurs after scarlet fever? The scarlatina poison affects the whole body; wherever blood is, there is also poison; and, therefore, all the parts to which the blood travels are liable to become infected with the poison. No organ is more liable to be infected in this way than the kidney; its nutrition is interfered with; the healthy attraction between the blood and the elements of the gland is disturbed; a state of *irritation* is induced, and the result is an afflux of blood giving rise to active congestion. This irritation may go so far as to excite inflammation; but certainly not to any great extent, for the products of inflammation are very seldom found. I have never met with supuration of the kidney after scarlet fever; nor do I know that any one has noticed such a result. Active congestion of the kidneys, then, is induced in these cases by the irritation of the poison. It is important for you to remark, that albuminous urine frequently is noticed during the course of the fever. A case was in the hospital under my care last summer, where it shewed itself on the fifth day from the commencement of the attack. The patient died; and Dr. Johnson, who minutely examined the kidneys, found no other morbid change in them than that which might arise from simple irritation, namely, congestion, with an undue quantity of epithelium; just as from irritation of the skin an unusual amount of epidermis is secreted. In these cases of dropsy after scarlet fever the kidney is not the only organ affected. Dr. Graves mentions some examples of enlargement and irritation of the liver relieved by antiphlogistic means; and Dr. Scott Alison has lately called attention to cases of endocarditis and pericarditis occurring in connexion with scarlet fever. When these matters come to be more minutely investigated, I believe that we shall find that the liver and other organs are affected in scarlet fever more frequently than is now supposed.

II. In the second case the symptoms appeared after cold, and the phenomena observed were, to a great extent, similar to those just mentioned. In consequence of suppressed secretion by the skin noxious material was retained in the blood, which occasioned irritation of the kidney, and subsequent congestion.

Now, in both these classes of cases, the aim of the treatment must be to restore the healthy action of the skin, to relieve congestion, to purify the blood of noxious ingredients by promoting the various excretions. How far the treatment to be pursued may be antiphlogistic, or more or less stimulant and tonic, must depend in a great degree on the peculiar circumstances of each particular case.

III. In the third case the symptoms depended on disease of the heart, and it must be obvious that no remedy could possibly be of paramount benefit that was not directed to the removal of the obstacle to the circulation in that organ.

IV. In the fourth case the phenomena are connected with a peculiar state of the kidney itself, and a remarkable train of symptoms is manifested which are naturally divided into three stages.

The first stage is remarkable for the absence of any symptom distinctly referable to the kidney. That organ, indeed, can hardly be said to be diseased, although a morbid change is commencing in it. The general health of the patient is disturbed; his assimilation, both primary and secondary, is defective; the blood suffers in some of its staminal principles, but especially in its colouring matter. There are frequent dyspeptic attacks. If the urine be examined in this stage it will be found to contain fat, and particles of epithelium loaded with fat.

The symptoms in this stage are such as not to attract the particular notice of the patient or his friends; and even if he did take medical advice, there is no sign which would certainly indicate the incipient stage of the disease, unless the urine be examined and found to contain fatty epithelium.

The serious nature of the malady is, therefore, constantly overlooked in this stage both by patient and physician; nor does the real state of the patient shew itself until in the second stage the urine becomes albuminous.

On this account the second stage is that which is ordinarily described as the *first*.

The attention of the patient is drawn to his condition, and medical aid is sought in consequence of all or some of the following symptoms presenting themselves. Pain in the loins; nausea or vomiting; disturbed digestion; pallid or pasty countenance; some œdema of the legs or face, or both. Sometimes hepatic symptoms are present; sometimes cardiac. Micturition, especially at night, is very frequent; (this is a remarkably common symptom.) The urine is albuminous; either simply so, or other elements of the blood are found in it; fibrinous casts of the uriniferous tubes, or red particles of blood. It may contain a large quantity of lithates; and, as has been ascertained by F. Simon, fat; or, as Dr. Johnson finds, fatty epithelial cells.

From this stage the patient generally dates his illness. Thus it appears, from the history of one of our patients, Ould, that the first thing that attracted his attention was the œdema in his lower extremities.

Patients, in whom the disease has advanced to this stage, are, when exposed to cold, rendered much worse, and the progress

of the malady is hastened by the suppressed perspiration, and the consequent increase of renal congestion. Indeed, the disease may have been silently creeping on without any marked symptoms, until a check to the perspiration, giving rise to congestion, as it would do in a healthy kidney, causes so rapid a development of the dropsy and other symptoms, as to give to the disease an acute character, and to lead to its being attributed to inflammation.

In the third stage the dropsy becomes general. There is always anasarca, and sometimes ascites; the latter usually depending on a more or less obstructed state of liver. The urinary secretion is defective; more or less albumen is to be found. The urea, instead of being removed from the system, is retained in the blood, and the result of this is epilepsy and fatal coma.

Now, what is the condition of the kidneys in these cases?

1. *Both* kidneys are found in a diseased state. It seldom or never happens that the disease is limited to one kidney.

2. We meet with irregular vascular congestion; the vessels are full at some parts of the organ, and empty at others, and this gives rise to a mottled appearance on the surface of the kidney.

3. A deposit of a new matter is found either in or between the tubes of the kidney; this deposit has hitherto been called *granular*.

4. As the disease advances, the kidneys, which at first were enlarged, shrink, their cortical or external portion becoming wasted here and there, leaving depressions on the surface of the organ corresponding to the wasted portions; and thus a tuberculated aspect is given to the kidney. The blood-vessels are obliterated in many situations, and it is impossible to inject such kidneys.

Such, then, is the coarse anatomy of this disease, as has been clearly made out by the numerous observers who have directed their attention to it. The following questions, however, naturally suggest themselves, and must be definitively answered before we shall be in a condition to determine the pathology of the disease.

What is the nature of the deposit? How is it produced? Where deposited; in or between the tubes? Is it a product of inflammation? Is it a new element, or only an increase of a natural one?

I have already remarked that Dr. Johnson has found that the healthy epithelium of the kidney contains fat—in small quantities it is true, but yet sufficient, and so generally existing as to warrant the assertion that its presence in the cells, in small quantity, may be regarded as a normal character of them. It had been previously known that this is the case with the cells of the liver; but

in these, fat exists in much larger quantity than in the renal epithelium.

In this disease, however, according to Dr. Johnson's most important discovery, fat accumulates in the epithelial cells of the kidney in large quantity; and it is the existence of these gorged cells which gives the appearance of a granular deposit.

Mr. Bowman had discovered that fatty liver essentially consisted in an overloading of the epithelial cells with fat. So similar are the cells of the kidney, in this disease, to those of the fatty liver, that if placed side by side you could not distinguish a renal from an hepatic cell. Both are filled with distinct oil globules, the appearance of which is so peculiar that no microscopic observer of ordinary experience could fail to distinguish them.

In these cases, the cells of the liver are often found unduly gorged with oil, exactly as in the kidney. Fatty matter, along with other materials, is also found in the arteries, and on the valves of the heart. Phthisis, too, is frequently co-existent, and tubercles, it may be observed, contain fat as well as other elements,

With regard to the question, "Is the deposit situate *in* or between the tubes?" I must remark that it is very unlikely it should select the latter situation. The tubes are placed very close together; between them there is a very small quantity of a clear homogeneous hyaline substance, in which the vessels are lodged. Again, the changes of nutrition are known to take place on the free surface of the tubes—that is, in their interior; and therefore it is most likely that any changes resulting from impaired nutrition would also manifest themselves there. You may see the fat-laden epithelium within the basement membrane of the tubes. Some years ago I had formed the opinion that the epithelium, in this disease, was secreted in undue quantity, and distended the tubes, but I did not know that its substance was in any way changed.

When the gorged epithelium cells accumulate in the uriniferous tubes, the result is that the tubes become dilated, the portal plexus which surrounds them is compressed, the passage of the blood through it is impeded or prevented, and the Malpighian tufts become distended with blood, and allow serum to transude through the walls of their vessels, or, if they burst, admit of the escape of the red particles and fibrine. And as the accumulation goes on, the portal plexus here and there is obliterated, and the Malpighian tufts become obliterated likewise, and atrophy of the kidney and deficiency of its secretion ensue. As, however, many healthy Malpighian tufts remain, the secretion does not always stop, but, on the contrary, may now

and then become abundant, or even excessive.

It may be now confidently asserted that this disease consists essentially in a deposit of fat in undue quantity in the epithelial cells of the kidney, associated with similar deposits, in greater or less quantity, in other organs—in the liver, on the internal surface of arteries, and of the valves of the heart; and that it is frequently accompanied by the deposit of tubercles in the lungs.

Instead, then, of the name granular kidney, hitherto so generally employed, we must use of that of "fatty kidney," as we speak of *fatty liver*.

And I may remark here, that this disease is, to all intents and purposes, of the same nature as the fatty liver, which has hitherto been chiefly known as a frequent accompaniment of phthisis.

It is true that the accumulation of fat in the cells of the liver does not lead to the obliteration of the blood-vessels of the gland, nor to a stoppage of its secretion, as in fatty kidney. This difference in the effects of the same accumulation in these two organs is due to the greater distensibility of the liver, which readily increases its size without compressing or impeding its blood-vessels; whereas, from the dense fibrous membrane which covers the kidney, and the highly convoluted arrangement of its secreting tubes, the retention of the enlarged cells within them speedily affects the vessels which play around them, and obstructs the circulation.

The frequent association of fatty liver with fatty kidney strongly indicates that the two diseases are closely allied to each other, and owe their existence to a similar, or even to the same cause. There is no evidence that this disease is inflammatory. Fat is certainly not a product of inflammation, nor do we find any of the inflammatory products in the kidneys in this disease. No pus, no gangrene, no lymph, in the substance of the kidney. To explain the disease, we must look to those circumstances which favour the formation of fat; deficiency of oxygen, want of exercise, impure air, and the like.

Mr. Simon and Dr. Johnson have artificially produced the disease. They kept cats for some time in the dark, causing them to breathe impure air, and to live on unwholesome food. The results were, that they were enabled to trace the disease through its three stages. They drew off the urine from the bladder by a catheter, and examined it from time to time; they found that first fat began to appear in the urine, with numerous gorged cells. There was soon a tendency to dropsy, and the urine became smoky and albuminous. The dropsy increased, the urine

became scanty, and death from suppression followed. The state of the kidneys was exactly such as I have described it in the human subject.

I confess that this appears to me to be an *experimentum crucis*. A theory of the disease had been formed, based on facts ascertained in the human subject.

An animal is subjected to all those conditions which would favour the expected results, and these results have followed exactly as had been anticipated.

In the treatment of the disease, we must look to the particular stage in which we find it. If perchance the patient applies for advice in the very earliest stage, and the physician is fortunate enough to detect it, the disease may be cured. If, before mechanical obstruction and its consequences have arisen, the mode of life and habit of the patient be changed by pure air and careful attention to diet and exercise, then it is quite possible that the coming evil may be averted. Unfortunately, however, a patient seldom applies for medical aid thus early. In the second and third stages we can only palliate suffering, by relieving congestion, promoting the flow of urine, and the action of the skin; and perhaps we may check the tendency to the abnormal deposit of fatty matters, by restricting him to a diet which contains neither fat nor butter, nor any of those non-azotised substances which are nearly allied in chemical constitution to fat, and are easily convertible into it—such as starch, sugar, potatoes, &c. We must not allow fat, butter, and such things, to be taken, nor any of those substances which, like potatoe, starch, &c. are easily convertible into fat. The foregoing considerations, therefore, lead me to regard “Bright’s Disease”—

1st. As one in which the existence of albumen in the urine is a concomitant, by no means an essential, feature of the disease, but a result of the mechanical obstruction to the circulation, which the morbid deposit in the kidney causes. It is, as indeed Dr. Bright himself has always insisted on, only one of those diseases which give rise to albuminous urine.

2dly. As a disease of the blood, manifesting itself in faulty assimilation, both primary and secondary, and consequently allied to those diseases (gout, rheumatism, diabetes, &c.) which have their origin in a morbid state of the blood.

It will be for future clinical research to discover such signs of the earliest stage of the disease as will enable both physicians and patients to detect it in sufficient time to adopt the remedial measures which are so clearly indicated by its pathology.

In conclusion, in order to save myself from being misunderstood, let me say, that

although I object to the term *nuria*,” for reasons before given, regard the presence of albumen in the urine as a symptom of grave import. If albumen should suddenly make its appearance in the urine, and quickly disappear, little need be feared; but if, on the other hand, it continues steadily and unremittingly to shew itself, then it must be looked upon as a symptom calculated to excite our worst fears. The presence of albumen is always indicative of partial or general congestion of the kidney. This congestion must have a cause, and that cause may be either,—1. Undue attraction of blood to the organ, as from irritation, or, 2. Obstruction to the circulation in the portal plexus of the kidney, causing congestion of one or more Malpighian tufts; and this latter cause may depend either on obstruction to the general venous circulation, from disease of the heart primarily, or upon mechanical pressure of the portal plexus, by the over distended uriniferous tubes.

ALMADEN QUICKSILVER MINES.

THE mine is apparently inexhaustible, becoming richer in proportion as the shafts deepen. The vein of cinnabar, about 25 feet thick, traverses rocks of quartz and slate; and runs towards *Almadencjos*: virgin quicksilver also occurs in pyrites and hornstein. The working this mine is injurious to health, and galley-slaves were long employed, after the old Carthaginian and Roman custom: now free labour is preferred. About 5000 men are thus engaged during the winter, the heat and want of ventilation rendering the mercurial exhalations dangerous in summer. The gangs work about six hours at a time, and hew the hard rock almost naked. There are three veins, called after the saints Nicolas, Francisco, and Diego; the adit is outside the town; the descent is by steep ladders; the deepest shaft is said to be 900 feet; the shafts extend under the town; hence the cracks in the parish church. The water is pumped out by a 20 horse steam-engine, brought in 1799 from England, and now a curiosity, fit for a mechanical museum. The mineral is raised by the labour of mules. The arched stone galleries are superb. The men thus employed in smelting (distilling) the ore are much more healthy than the miners. The mercury is distilled by two processes; either by that used in Idria, which is the best, or from certain ovens (reverberatory furnaces.) The quantity of mercury now obtained is enormous. The Fuggers only extracted 4500 quintals annually, and now between 20,000 and 25,000 are procured. The price has lately risen from 34 to 84 dollars the quintal (= 100 lbs weight).”—*Murray’s Spain*.

CLINICAL LECTURE
ON
SCIRRHUS OF THE PAROTID GLAND,
AND
EXCISION OF THE LOWER JAW.

BY SAMUEL SOLLY, F.R.S.

Senior Assistant-Surgeon to St. Thomas's
Hospital, &c.

Delivered November 13, 1845.

GENTLEMEN,—As we have had several cases in the hospital lately of disease of the maxillæ, and diseases in the neighbourhood of these bones, I believe that I cannot do better than take this opportunity of directing your attention to this important subject.

1.—The subject of the first case is—

Thomas Partner, æt. 52, married: the last ten years has been coal porter; nineteen years previously in the army (Foot Guards); drinks a good deal of beer at his work, but not intemperate. Came into Henry's Ward, St. Thomas's Hospital, Oct. 7th, 1843, with disease of the parotid gland.

Present appearance.—There is now a tumor of irregular surface and form, occupying the situation of the right parotid gland, in front of the external ear. A portion of the skin over this tumor, about the size of a pigeon's egg, is of a purple colour, smooth and shining surface. In this portion there is an ulcerated opening about the size of a pea, communicating with a deep excavated ulcer, which discharges a thin ichorous pus. The bone cannot be felt bare at the bottom of this cavity. The tumor hard and nodulated, having the general characters of scirrhus; it extends forwards to the buccinator muscle, upwards to the zygoma, downwards to the angle of the jaw, and backwards beneath the lobe of the ear. It is not attended with much general pain, but, to use his own expression, it shoots and starts, and the pain is more violent at one time than another. The portio dura is completely paralysed, and the skin of the face and forehead on this side is quite numb; he can just feel the touch of the finger, but that is all. The sensation is more dull in the infraorbital region than elsewhere.

History.—He attributes the disease to a cold caught last July, but it did not swell suddenly, though it has increased rapidly during the last month. He thinks that he lost all power over the muscles of the right side of the face during the night about twelve months ago, and therefore long before any swelling appeared externally. The loss was not complete as now, but gradually got worse; he did not feel any pain at that

time, and therefore attached no importance to it.

This early paralysis of the facial nerve I regard as an important circumstance in our diagnosis of the case, for to me it appears to prove that the disease must have commenced as a firm tumor, so deeply imbedded in the parotid gland, and so firm, as to paralyse the nerve by pressure long before it shewed its presence by external swelling. The paralysis of the sensory divisions of the fifth I cannot account for, with the exception of the auricular branch of the third division, which, traversing the parotid gland, would be exposed to the pressure of the tumor, but how the infraorbital nerve should be affected I cannot explain.

Mr. Green agreed with me in considering it a true scirrhous disease of the parotid gland, and, after careful consideration, we decided that it would be right to give him the prospect of recovery by extirpating the gland. At the same time Mr. Green expressed his opinion that it would be useless to attempt to remove the whole of the diseased growth without removing the ascending ramus of the lower jaw with it.

It was, therefore, determined to pursue this plan, and on the 25th of October, 1845, I performed the following operation.

The first incision was commenced on a level with the zygomatic process of the malar bone, and carried down completely through the skin in front of the tumor over the horizontal ramus of the lower jaw, just in front of the masseter muscle; the knife was then swept across the neck, below the tumor, up to the external ear, down to the deep cervical fascia; the cellular tissue covering the buccinator was separated from the lower jaw above, and the superficial fascia and cellular membrane of the neck were dissected from the edge of the horizontal ramus below, a little posterior to the anterior margin of the masseter muscle; which portion of the muscle was next cleared from the surface of the jaw, to make a space for the application of the saw. The edges of this incision were then drawn upwards, and I applied my saw to the denuded bone. The saw which I made use of is a circular and improved one, made by Mr. Weiss, and introduced from the continent by Mr. Phillips, of the Westminster Hospital. With this instrument, which answers admirably, I soon cut nearly through the horizontal ramus, but not so as to divide it entirely, as this would have opened the mouth, which I wished to avoid. I therefore prized the two pieces asunder without any difficulty. By this way, a small narrow portion of the ascending ramus, running upwards from the internal angle towards the coronoid process, was left to keep entire the pterygo-maxillary ligament, with the buccinator attached to it in front, and the supe-

rior constrictor of the pharynx behind. All this I had planned beforehand, and knew that I could succeed in accomplishing the excision of the whole of the ascending ramus without opening the mouth, as I had been in the habit of thus preparing these parts for my anatomical lectures. I am not aware that the preservation of the walls of the mouth and pharynx has been accomplished in previous operations on this bone. I next carefully dissected the tumor upwards from the fascia of the neck, beneath which it did not dip, and beneath the angle of the jaw, and the lobe of the ear. The internal pterygoid muscle was next divided by inserting the knife between the two portions of the divided jaw, and by keeping the knife very close to the jaw I separated the buccinator muscle without opening the mouth; the attachment of the temporal to the coronoid was next divided. I now carried my incision upwards through the lobe of the ear (which appeared implicated in the disease), behind the tumor, up to the zygoma, joining my first incision. By raising the ramus of the jaw and tumor together, I was able to dissect upwards. And here let me impress upon your minds the value of this course, not merely in the removal of those tumors on the face and neck, but also those of the mamma, and in other situations. When we dissect from below upwards the blood flows from your knife instead of over it; it does not obscure it, and each incision being comparatively clean, you can observe more distinctly the character of each tissue as you divide them. In this part of the dissection, the internal maxillary artery was divided as it gives off the dental branch; it bled very freely, and I seized the open mouth of the vessel with my forceps, but saw immediately that it was divided too close to the fascia to apply a ligature to it. I considered, therefore, that it would be better to apply a ligature to the trunk of the external carotid artery, on the cardiac side of the opening, and I determined to do this by inserting a curved armed needle beneath the fascia, anterior to what I considered the situation of the artery, and bringing it out again behind it, instead of waiting to expose the artery by incision. This was easily done, and on tying it, was found immediately to arrest the hæmorrhage. I next divided the external pterygoid muscle, and the ligaments of the maxillary articulation, and thus removed the whole external mass together, and the operation was concluded by dissecting out that portion of the gland which dips between the two pterygoid muscles, which was readily done. There was very little hæmorrhage, and most of those arteries that did bleed I stopped by torsion. I only applied three ligatures altogether, and the wound was dressed with lint and cold water.

The patient bore the operation remarkably well, and never uttered a sound.

This tumor, when divided, presented on its section all the general characters of scirrhous, as recognizable by the naked eye; the centre was softened, and in a state of suppuration.

The whole texture of the gland appeared altered, and there was no line of demarcation between the disease and the rest of the gland, which would have been the case if it had been merely a disease of the absorbent gland which lies on the parotid. It was most clearly a disease of the gland, not a disease on the gland. Under the microscope it presented thousands of nucleated cells of an oval form, so accurately corresponding with the figure 7, in Plate 2, of Dr. Hodgkin's Paper on the Anatomical Characters of some Adventitious Structures, &c.*, that it might have been drawn from this specimen. The figure is entitled, "Drawing of Cancerous Matter from Tubercles in the Liver, magnified 410 diameters, by G. Gulliver." It exhibits several forms of the large nucleated cells occurring in malignant structures."

In the evening I found him quiet, but complaining of pain on the opposite side of the face. I directed some flannel, steeped in the tincture of opium, to be laid on the cheek.

Oct. 26th.—Has had a good night; no pain in the wound, and the pain in the left cheek has been relieved by the flannel dipped in laudanum. Pulse 60; tongue clean and moist. To have a pint of porter in the course of the day, and beef-tea.

27th.—"Has passed a very good night, without the aid of any soporific, beyond the fumes from the laudanum applied on flannel to his ear. Pulse 54, weak; no hæmorrhage, nor any more sanguineous oozing; no pain in head, nor any unpleasant symptom beyond a little nausea.

30th.—Left eye slightly inflamed; a good deal of thick purulent secretion; going on well in other respects.

Nov. 1st.—Eye less inflamed. While I was going round I was called to him in consequence of a sudden hæmorrhage. Mr. Harper, an old dresser, who happened to be in the way, arrested it almost immediately by pressure. I found that it was the external carotid, just at its division into internal maxillary and temporal. Mr. Harper had tried to take it up and tie it where it was bleeding, but it broke away, and he could not get a ligature on it. So when I came I did not attempt to put a ligature on the open vessel, but inserted an armed needle under it, as I did during the operation, and on tying one of the threads we found it completely arrested the bleeding. I left the second

* Med. Chir. Rev., vol. viii., New Series.

thread beneath the vessel, in case I required it at any future time.

18th.—This patient has gone on well in every respect; the wound is looking healthy, and cicatrising rapidly; all the ligatures, including that on the carotid, have separated, excepting one. The dressing has been simply dry lint, as the granulations are rather too exuberant, and occasionally require the blue stone.

22d.—All the ligatures have come away.

Some doubt has been thrown on the statement that the parotid gland is ever the subject of schirrus, but I believe without sufficient foundation. This is a drawing which I made in 1827 of a patient in Guy's Hospital; for in those days the two hospitals were united as one school. It represents a carcinomatous ulcer of the parotid gland, causing paralysis of that side of the face. Dr. Walshe, in his admirable article, Cancer, in the *Cyclopædia of Surgery*, at the same time that he states that the salivary glands are seldom the seat of either schirrus or encephaloid disease, and never, as far as observation goes, of colloid cancer, says, that "it is certain that the two former do occasionally originate in the parotid," and he refers to two well-marked cases; one observed by Magendie*, in whom there was a complete loss of sensibility in the corresponding side of the face, destruction of vision in the eye of that side, ulceration of the cornea, insensibility of that organ, not only to light, but under the contact of foreign bodies, deviation of the mouth to the opposite side, &c. Unfortunately there is not any account of the extent of tumor, or any post-mortem examination of the parts involved.

The other case was a scirrhus disease of the parotid gland, which was removed by Bèclard, of the Hôpital de la Pitié, in 1824, and related in the *Arch. Gen. de Méd.* for Jan. 1824. This patient was 47 years of age, of apparently good constitution. He remembers having had a small, round, hard, moveable tumor on the side of the face for eighteen years, without any change of colour in the skin. Only a short time before he came to the hospital it had increased rapidly, become painful, and lost its mobility, and when admitted into the hospital, it had ulcerated at two points, and the description given of its dimensions corresponded almost word for word with the case which I have just related.

The operation was commenced by a dissection of the gland from before backwards from off the surface of the masseter muscle; but the operator did not now attempt to detach the portion which is placed behind and below the internal pterygoid muscle, lest it

should give rise to difficult hæmorrhage, and he dissected the lowest portion first, and when, on dividing the deep portion, he opened the internal carotid, by seizing it immediately with the forceps and then passing a needle with two ligatures around it, he tied it above and below.

The result of this case was fatal; the patient was attacked with erysipelas on the twelfth day from the operation. He recovered from this, but with a loss of intellect, and two months and a quarter after this date the wound, which was all healed, except a small portion near the external ear, had assumed again the true carcinomatous character. Three weeks from this date he was a corpse.

In the account of the autopsy it is stated that there was no trace of the gland remaining; that the pus which occupied the auditory passage did not extend beyond the tympanum. The pia mater and choroid plexuses were morbidly injected, and the serum of the lateral ventricle held suspended particles like the lees of red wine.

M. Velpeau, who enters very fully into the various cases of either actual or pretended extirpation of the gland, states his belief that the gland was really extirpated in this case of M. Bèclard; he also relates two complete cases by M. Gensaul, in 1824 and 1825, and one by Mr. Carmichael in 1818, and another by M. Lisfranc in 1826, who showed the parts to the Académie after death, which happened at the end of a few weeks, and nothing remained of the parotid gland. He proceeds: "In the operation performed by Mr. Heyfelder of Treves, in June, 1825, the patient did not lose above three or four ounces of blood. The surgeon left but a very small lobule of the gland in front, and the paralysis ceased entirely. In the subject operated upon by Mr. J. M'Clellan in 1826, the success was complete, although the gland was entirely removed. The case of M. Cordes d'Hirskey, who affirms that he did not leave the smallest particle of the gland, was equally successful, as also was that of M. Bernt. The Archives mention another example, in which they proceeded step by step down to the carotid. The German papers for 1831 record a new case of removal of the parotid, attended with complete success. In the subject by M. A. Tonthien de Syke, in November 1828, the carotid was not wounded, and there was no hæmorrhage; the recovery was complete: on the thirtieth day the paralysis, too, ceased entirely. The most recent with which I am acquainted is that of M. A. Magri de Sorinèse. This surgeon, in January, 1829, assisted by M. Madonini, removed a tumor at the side of the neck, which included the whole parotid, and he was able to omit the ligature on the trunk of the carotid. The

patient, a labourer, aged 36 years, recovered in twenty-six days, excepting the facial paralysis, which remained. M. Dugied, who mentions most of these cases, says also that Sir A. Cooper and Mr. Weinhold have frequently removed the whole parotid. But I do not know where these have been published, except those of Mr. Weinhold, who retains one of the glands in his cabinet, and shows it to those who wish to see it."

I have no doubt that many of you are familiar with the excellent observations of Professor Harrison, in his valuable work on the Arteries, regarding the operation for the removal of the parotid gland. After describing the connexions of the parotid gland, he goes on to say, "Let him (the student) reflect on the serious injury that must be inflicted in attempting to remove even this portion of the gland (the superficial); which, however, is comparatively easy to that of the deeper portion, which I must declare, in my opinion, to be impracticable in the living subject, without committing violence worse than the disease we wish to remove, or without endangering parts, an injury of which must be certainly fatal." He then goes on to quote the opinion of Allan Burns, in confirmation of his own, who says, "Those who assert that they have extirpated the parotid gland, have, I am fully convinced, mistaken that little conglobate gland which lies imbedded in its substance, and which does sometimes enlarge, producing a tumor resembling a diseased parotid, for the parotid itself." As I agree with my own countryman in believing that it is almost, if not quite, impossible to remove the parotid, according to the plan on which it has hitherto been attempted—namely, dissecting the deep portion from behind the jaw—I determined, with the concurrence of Mr. Green, to remove its ascending ramus, and thus completely expose the whole of the deep ramifications of the gland.

Whether the operation proves ultimately successful or not remains to be seen, and we all know how liable carcinoma is to reappear, though the whole of the original disease may have been rigidly extirpated.

And in this case you all saw how bare and healthy all the textures beneath the jaw were left when the operation was completed, and there were not any enlarged absorbent glands in the neck. So that there is a more than ordinary prospect of ultimate recovery*.

DILATATION OF THE ŒSOPHAGUS.

An example of greatly dilated œsophagus is related by Professor Huss, of Stockholm, (*Gazette Méd. de Paris*, Feb. 11, 1843).

* Dec. 18.—The wound is nearly healed, and perfectly healthy. The deformity would be very slight if this side of the face were not paralysed.

A lady, æt. 43, had for many years regurgitated her food (often six or twelve hours after taking it) unaltered, and been the subject of hysteric spasms. After death, dilatation of the œsophagus was observed, commencing one inch below the pharynx, and gradually increasing till, at the cardia, it formed a large sac, lying to the left of the stomach, which was small, but there was no obstruction at the cardia, nor any structural alteration of the œsophagus, except considerable thinning. Dr. Huss attributes the dilatation to the hysterical spasms.—*Dr. Bennett's Report on the Progress of Pathology, &c.; British and Foreign Med. Review*, July 1845.

THE ESSENTIAL OIL OF BITTER ALMONDS.

THE oil of bitter almonds of commerce appears to contain various oleaginous substances, with which we are not yet fully acquainted; these admixtures are probably owing to the circumstance that, besides bitter almonds, the kernels of many other stone fruits, such as cherries and peaches, &c., are used for the preparation of this oil. These admixtures are, however, but trifling and unimportant. I had to examine very recently, an oil prepared exclusively from peach-kernels, and I found it nevertheless to consist almost entirely of the pure oil of bitter almonds. If the crude oil is subjected to distillation, all the hydrocyanic acid which it contains in admixture passes over with the first portions, and the oil which passes over towards the end of the distillation is pure and perfectly free from this acid. A more convenient method of depriving the crude oil of admixed hydrocyanic acid, is to remove the latter by means of finely levigated peroxide of mercury. The peroxide is for this purpose mixed with the crude oil, and left in contact with it for the space of several days; the mixture is then to be distilled, when the hydrocyanic acid will remain in the retort as percyanide of mercury. If the quantity of crude oil is considerable, the latter method may be rendered more economical by substituting for peroxide of mercury a mixture of hydrate of lime and perchloride of iron. Protocyanide of iron is formed, and the oil which distils over requires simply to be freed from the water which it contains, by treating it with fresh calcined lime. Pure oil of bitter almonds is perfectly colourless, very limpid, and possessed of a strong power of refracting light. Its taste is aromatic and burning; its odour is very similar to that of the crude oil; its boiling point is about 356°; its vapour is readily inflammable, and burns with a luminous smoky flame. Its formula is $C_{14}H_{10}O_2$.—*Liebig, Lancet*.

CONTRIBUTIONS TO
MICROSCOPICAL MORBID
ANATOMY,

*Selected and Translated from the German
Work of*

DR. JULIUS VOGEL, of Göttingen,
Entitled "Erläuterungstafeln zur pathologischen
Histologie."

By W. S. KIRKES, M.R.C.S.L. &c.

[Concluded from page 1140.]

Trichomonas vaginalis.

Fig. 45* offers an illustration of the form
and general characters of a peculiar kind of

FIG. 45.



animalcule occasionally found existing in mucus, and first described by Donné, who applied to it the name of *trichomonas vaginalis*. [In his *Cours de Microscopie*,† Donné gives a lengthened account of this epizoon: the following remarks comprise the substance of his observations. This species of animalcule is never met with in healthy vaginal mucus, nor when the secretion is simply increased in quantity without appreciable alteration of its constituent principles, but when mucus or pus corpuscles become mixed with the ordinary epithelial scales in the discharge, then it is not unusual to find them; their presence, however, is far from being constant, even in cases when the mucous globules exist in abundance. After careful observation, it appears certain that the production of the *trichomonas* has no relation to the venereal principle, and it may be seen to occur equally in females free from syphilitic taint,

as in those unquestionably infected; the presence of pus or mucous globules in the vaginal mucus seems essential to the occurrence of these infusoria, but the existence of such globules by no means necessarily implies a suspicious origin; and a slight irritation of the mucous membrane, such as might result from the application of a pessary, from want of cleanliness, or any other cause, is sufficient for their production. It requires considerable tact to discover the *trichomonas* in a portion of vaginal discharge, and the difficulty experienced is due in great measure to the presence of the mucous corpuscles, to which the *trichomonas* offers so much analogy in dimension, form, and structure, that it is not easy to distinguish between the two, especially since the latter usually execute but very feeble movements, and frequently form groups of several together, resembling very closely the small agglomerated masses of globules. There is, however, one certain character by which the presence of the *trichomonas* in a given specimen of discharge may be determined, and that is, the existence in the fluid of a number of air bubbles, which cause it to assume a frothy aspect, whilst in ordinary cases, and when the infusoria are absent, the matter of which the discharge is composed is quite homogeneous, and contains no bubbles of air; this character is constant, and when it occurs, a careful microscopic examination will not fail to detect the *trichomonas*. When the fluid is examined with powers magnifying from 300 to 400 diameters, there will be observed between the epithelial scales and mucous corpuscles, a greater or less quantity of small greyish semi-transparent bodies, which at first sight are liable to be confounded with mucous corpuscles, but which soon become distinguished by their own peculiar movements, which are independent of any accidental movements in the fluid itself from currents, capillary action, or evaporation; when carefully watched these movements are found to be produced by the agitation of small organs or filaments, which the animal makes use of for the purpose of changing its position or imbibing its food. Although the *trichomonas* has about the same size and form, and the same granulated aspect, as the mucous corpuscle, yet a close examination detects several distinguishing points between them; the body of the *trichomonas* has usually a somewhat elliptical form, whilst from its anterior extremity arises a delicate filament, finer than the tail-like process of spermatozoa, and of considerable length, the distal extremity of which it keeps in constant agitation. Beneath this delicate filament is probably situated the anterior opening of the body or mouth; this opening is furnished with four or five minute very fine cilia, which are

* Magnif. 300 diams.

† Paris, 1844, page 157, et seq.

difficult to discern, both on account of their small size and of the continual movement which they undergo: it is these movements by which the infusoria are especially distinguished: they cease after death, and the cilia themselves speedily disappear, so also do the bodies of the infusoria; wherefore it is essential that the discharge should be examined as early as possible after its formation. In some cases there is not the least difficulty in discovering the trichomonas, for they exist in such numbers, and are provided with such evident powers of locomotion, that they are at once recognised; they may sometimes be seen to elongate themselves and change their position after the fashion of leeches, and they appear to attach themselves to the plate of glass by their posterior part, not by means of a sucker, but of a viscid material which leaves a mark behind. The trichomonas has hitherto been discovered in no other animal fluid than the vaginal mucus, to which it appears peculiar.]

Fig. 46* illustrates the microscopic ap-

FIG. 46.



pearances of a peculiar class of parasitic animals termed *vibrions*, which are found in great abundance in all putrifying animal fluids, such as blood, albumen, &c.; they are also found generated on foul ulcers.

[Ehrenberg, in his beautiful work, *Ueber Infusionsthierehen*, p. 77, describes several varieties of the species *vibrio*, all of which, however, are characterized by the same essential peculiarities attending their mode of development, which is effected by a kind of imperfect spontaneous division in a transverse direction, resulting in the formation of a filiform flexible chain.—Tr.]

Aphthous spots containing confervæ.

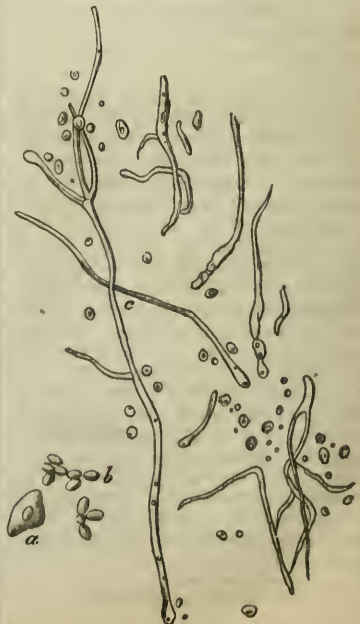
An infant fourteen days old died of aphtha: on examining the body, the mouth and œsophagus, as far down as the cardia, were found thickly covered with small lenticular aphthous spots, varying in size from a pin's head to a lentil: by careful manipulation with a knife these spots could be removed entire from the subjacent mucous membrane; they were of a yellowish brown colour, and when examined beneath the microscope were found to be composed of a number of minute fungi, together with a little animal matter, and a few epithelial scales. These fungi were of two different kinds; one consisted of small round bodies,

with or without granules in their interior or some separate, others strung together like a row of beads; a few presented buds sprouting from their sides; they averaged in size from $\frac{1}{300}$ to $\frac{1}{400}$ of a line in diameter, the longest being about $\frac{1}{300}$; they were colourless, and unaffected by water, acetic acid, or ammonia.

The second kind consisted of filaments of various lengths, many of which were branched and jointed in places, also here and there dilated into knobs; in many parts they evidently seemed to be originating from the round bodies or cells just described. Their length was very considerable, often a line and more; indeed their growth appeared to be unlimited. In breadth they varied from $\frac{1}{800}$ to $\frac{1}{600}$ of a line, the dilated bulbous parts being about $\frac{1}{400}$ of a line; most of the larger ones were branched, the branches coming off from the main stem at various angles. They were insoluble in water, ammonia, and acetic acid; the latter reagent caused them to appear more distinct, by dissolving or rendering transparent the animal matter within which they were immersed. This animal matter, before being acted on by ammonia, appeared as an opaque brownish granular substance, which rendered it difficult to distinguish the individual filaments. The mucous membrane itself, at the parts where covered with the aphthous spots, did not appear to have undergone any abnormal change.

Fig. 47 illustrates the microscopic ap-

FIG. 47.



pearances of the above described parts; *a* shews an epithelial scale, many of which were observed—this one was derived from the epithelium of the oesophagus; *b* represents a chain of small bodies or cells, of which the first-described kind of fungus consisted; *c* exhibits the second, or filamentous variety, the branches and dilated portions of which are plainly shown.

Crystalline deposits of calcareous salts in the skin covering the scrotum.

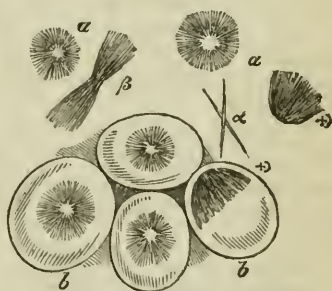
A baker, aged 33, of good general health, had since the age of puberty been continually harassed with a distressing itching of the scrotum. By degrees there formed on the skin of this part a number of small wart-like prominences, which increased to about the size of peas, then dried up and disappeared, being shortly after succeeded by another crop, which passed through the same stages and then dried away; to a constant succession of the process, without any disturbance of his general health, the man had been subject for the last eighteen years. Upon examining the scrotum there were found scattered over its surface about 150 small tumors, varying in size from peas to hazel-nuts. They were situated beneath the skin, which was not at all discoloured, and were quite moveable. Upon puncturing any one of these tumors there escaped from it a pultaceous perfectly white matter, which when diluted with water had a distinctly alkaline reaction, and on exposure to the air very shortly became quite hard, like a piece of stone; just as a mixture of plaster of Paris with water would do. Upon examining portions of this pultaceous matter beneath the microscope, they were observed to be composed of a finely granular substance of a brownish colour, within which were deposited a number of colourless transparent crystalline fragments, most of which had a roundish or irregular form, none constituting distinct crystals. Neither water, alcohol, æther, or alkalies, had any effect on this mass, but acid dissolved it with effervescence. From an accurate chemical examination it was found to consist mainly of carbonate and phosphate of lime, with a trace of chloride of sodium, and a small quantity of organic matter, consisting of fat and extractive matter. The calcareous matter appeared to be contained within distinct cysts, though of what tissue of the skin these cysts were composed could not be clearly made out, because of their walls being so much impregnated with calcareous matter as to preclude their structure from being determined; when, however, they were treated with dilute nitric acid, which had the effect of dissolving the calcareous matter, a quantity of fibro-cellular tissue arranged in fascicles, together with blood-

vessels, were observed entering into their structure. Still it was not apparent whether the calcareous matter was deposited within the cutis itself, or in the sebaceous glands; most probably the latter, inasmuch as the debris of epithelial scales were discovered in the fragments scraped from the internal surface of the cyst*.

Crystals of margarine.

The fatty crystalline principle termed margarine has been occasionally mentioned in these contributions as constituting a microscopic element in certain examinations: of this principle Vogel observes, that it is frequently found deposited in the adipose tissue after death, and that its formation is due in all probability to there being an excess of margarine over the elaine in the fat of the body, and that when the body cools the margarine becomes deposited in the form of crystals. Very commonly we observe these crystalline deposits in parts abundantly provided with fat, and which have become destroyed by gangrene. The most common form in which these crystals occur is that of needles arranged together in a radiated manner around a central point, forming a kind of star, as shewn by fig. 48, *a*, *a*.

FIG. 48.



When viewed laterally these star-like groups of crystals often appear like so many sheaves, (fig. 48), occasionally two such sheaves are observed united together (*β*); sometimes, though rarely, may be observed a few larger sized isolated needles, either occurring quite singly, or two crossing each other as at *a*. These various groups of crystals are in the first place formed within the fat cells, (*b*, *b*), and it is after the destruction of their containing cells that the crystals appear free. By the above microscopic characters the crystals of margarine are readily distinguishable from those of cholesterine, another fatty crystalline principle which is very frequently met with, and

* [These wart-like prominences correspond to the "calcareous milary concretions" of Mr. Erasmus Wilson, who alludes to the above cases Diseases of the Skin, page 315.—Tr.]

occurs in the form of large pearly or silvery scales, usually of a rhomboid shape: this principle enters very largely into the composition of almost all gall-stones, is an abundant constituent of the atheromatous deposit in the walls of arteries, and is present in greater or less quantity in many morbid products and changes of structure in organs.

ANALYSIS OF CARLSBAD WATERS.

BY DR HEINRICH ROSE.

A PORTION of the Carlsbad mineral waters obtained from the same spring as that from which Berzelius took the water for his analysis, having been forwarded to Dr. Heinrich Rose, this chemist made a careful analysis of it, and obtained some very interesting and curious results, from which it appears that the proportions of the two chief ingredients of this water, sulphuric acid and chlorine, remain exactly the same as stated by Berzelius in his analysis published in the year 1822; and that the other constituents also remain unaltered: his analysis, therefore, proves that the composition of the water is the same now that it was three-and-twenty years ago. The quantity of carbonic acid found by Dr. Rose is somewhat larger than that stated by Berzelius, but this may be explained by the circumstance that Berzelius did not endeavour to determine the exact quantity of carbonic acid, but merely estimated its proportion by the quantity of soda with which it was combined.—*Casper's Wochenschrift*

[The analysis of the Carlsbad waters, made by Berzelius, is as follows:—A wine pint contained 5 cubic inches of carbonic acid. 1000 parts by weight gave the following quantitative analysis of solid ingredient:—

	Grains.
Sulphate of Soda . . .	2·58714
Carbonate of Soda . . .	1·25200
Chloride of Sodium . . .	1·04893
Carbonate of Lime . . .	0·31219
Fluoride of Calcium . . .	0·00331
Phosphate of Lime . . .	0·00019
Carbonate of Strontia . .	0·00097
„ Magnesia . . .	0·18221
Phosphate of Alumina . .	0·00034
Carbonate of Iron . . .	0·00424
„ Manganese, a trace.	
Silicia	0·07504

5·46656

The temperature of these waters, according to Berzelius, was 165° Fah. It may not be uninteresting to state, that these hot mineral springs are said to have been discovered in the year 1370, by the Emperor Charles IV. whilst hunting, from which circumstance the town Carlsbad has probably derived its name.]

Original Communications.

A CASE OF
EXTENSIVE SUPPURATIVE HY-
DATID CYST OF THE LIVER
TREATED SUCCESSFULLY.*

BY THOMAS ALEXANDER.

Staff-Surgeon, 2d Class.

ON the 6th July last, I was called to visit professionally Miss P., a young lady, æt. 20, who had, in the preceding March, arrived in this country from the West Indies, where, on inquiry, I found she had resided about twelve months, and during that period had experienced a severe attack of fever. I also learned that since her arrival here she had not enjoyed good health, having frequently suffered from uneasiness and a sense of fulness in the epigastrium; and about the middle of June a distinct swelling presented itself in the epigastric region. This gradually increasing, and becoming painful on pressure, she was cupped, leeches, and blistered, by advice of her medical attendant, on the 28th June. She had also taken mercury in sufficient quantity to produce by this time gentle ptyalism.

It does not appear, while in the West Indies, that she suffered from any other serious attack of disease than the fever alluded to, which probably was of the bilious remittent character.

The following were the symptoms which presented themselves when the case came under my care: viz. considerable emaciation; pallor of the face and lips; a clean smooth tongue, yet urgent thirst; a rather favourable expression of eye, occasional rigors, with copious nocturnal perspirations, and at times looseness of the bowels; the pulse 140, small, and sometimes counted with difficulty; anxiety, with great and increasing debility, loss of appetite, and nausea, with pain when any considerable impression was made over the epigastrium. Here, as well as in the right hypochondrium, a large, bulging, yet diffused tumor, presented itself; most prominent towards the centre, yet not acuminate or point-

* Communicated by the Director-General of the Army Medical Department.

ing, nor were the integuments in any degree inflamed, although considerably on the stretch. At the most prominent part of the swelling, however, on careful examination, obscure fluctuation was perceptible; and as the skin upon the trunk was in a jaundiced state, the conclusion that an extensive abscess existed in the liver appeared to me almost certain, the more especially as the lower margin of this organ, apparently enlarged, could be distinctly traced by the fingers extending beyond the false ribs, and downwards into the right lumbar region. Under this impression, I ordered cataplasms to be applied to the epigastrium, diffusible stimuli (wine) to be given freely, together with light nourishing diet, and small doses of quinine to support strength; also an anodyne at bed-time. After a few days, the fluctuation having become somewhat more distinct, and as the symptoms generally were hourly becoming more urgent, without any probability of the matter soon reaching the surface, I determined upon giving vent to it, as offering the best, indeed, in my mind, the only chance of recovery, and was glad, in consultation, to find my opinion supported by Mr. Henry, the principal medical officer in this command, and Dr. White, Surgeon of the Rifle Brigade. Accordingly, on the 14th July, the operation was performed by pushing a large-sized trochar into the most prominent part of the tumor, a little to the right of the linea alba, and about four inches above the umbilicus. Previous to reaching the cyst or abscess, the instrument appeared to me to pass through a firm texture, of about an inch and a half in depth. On withdrawing the stilette, several ounces of a whey-like fluid first rushed through the canula, then a highly offensive purulent matter in considerable quantity. The discharge having ceased, notwithstanding firm pressure maintained by means of a broad flannel roller, which had been passed round the body, a probe was introduced through the canula and moved about freely, upon withdrawing which several hydatids of various sizes made their escape; some entire, and containing an amber-coloured fluid, others had burst, and were pulled out in the form of membranous shreds. As the patient was now greatly exhausted, it was thought prudent to

desist from any further attempts to empty the abscess. The canula was therefore withdrawn, and a portion of lint introduced to keep the wound open.

During the several succeeding days from four to six ounces of offensive matter, mixed with hydatids, were twice daily pressed out at the wound; this was generally accomplished with more or less difficulty, on account of the hydatids, or their broken membranes, obstructing its internal opening.

Generally, when a large hydatid was extracted by pressure or the forceps, a gush of purulent matter suddenly followed. This, however, was often as suddenly stopped by fresh hydatids getting into the opening, and these could not at all times be removed by the introduction of a probe or the gum elastic catheter. On the evening of the 21st I succeeded in extracting a very large empty hydatid sac, which was immediately followed by a discharge of healthy pus amounting to nearly two quarts. This afforded the greatest relief, and from this time a remarkable improvement took place in the patient's health. On the morning of the 22d, healthy-coloured bile was observed to ooze from the wound in considerable quantity both by Dr. White and myself. On the 25th the bowels were reported regular, the evacuations natural, the appetite good, the perspirations to have ceased, and the two preceding nights to have been passed comfortably without the assistance of an opiate; the pulse was, however, still rapid. On the 26th and 27th bile continued at times to be discharged, and a watery fluid to ooze out in such quantity as to saturate the bandages, and even the bed linen. On the 28th, after the introduction of an elastic gum catheter, about ten ounces of matter escaped. On the 29th there was increased tumefaction of the epigastrium, and fluctuation, with some discolouration of the integuments perceptible about three inches below the wound. Here an opening was made, and vent given to a considerable quantity of matter, as well as hydatids.

By the 2d of August the upper wound had closed, but from the lower several ounces of offensive matter, together with hydatids, were daily discharged, and the patient complained of the matter irritating the surrounding

skin. The general health, however, continued slowly to improve, and by the 7th she was able to leave her bed, and remain up for an hour. From this period until the 14th she got up daily, and seemed to be going on remarkably well; but on this day the epigastrium was observed to have again become tumid, and on the ensuing night she was seized with rigors. On removing the dressings in the morning, a portion of broken hydatid was observed by the nurse projecting from the wound; this being removed, and proving of extraordinary size, was followed by a discharge of pus mixed with broken hydatids amounting to a quart. She still, however, continued to gain ground until the evening of the 17th, when she was seized with vomiting and griping, with purging of the bowels. This attack (probably produced by some indiscretion on the part of the patient) was of short duration, but productive of much temporary exhaustion. By the 19th, notwithstanding, she had so far rallied as to be again able to get out of bed; and by the 25th had improved so much as to be removed without any risk or inconvenience in a carriage to another lodging at a considerable distance. From this period she made rapid progress, and by the 1st September was able to embark on board the steam-packet for Boston, on her way to join her relatives in Canada.

After removal to her new lodgings, she passed the greater part of the day either seated or reclining on a sofa; she ate well and slept soundly, and the bowels were easily regulated. The epigastric region had assumed a perfectly natural appearance, and the discharge (healthy) from the wound, still kept open by means of a small tent, varied from half an ounce to an ounce daily.

REMARKS. — This appears pretty clearly to have been an instance of a hydatid cyst in, or attached to, the liver, converted into an abscess by its inner coat taking on, from some exciting cause, suppurative inflammation. Whether one or two cysts originally existed was not clearly ascertained, but the latter appears to be the most probable conclusion, for bile escaped from the upper wound only. The fact of healthy bile having been discharged

for several successive days, and in very considerable quantity, appears a remarkable feature in the case, and seems to denote that the abscess either extended into the substance of the liver, or that a large biliary duct opened into the cyst—a circumstance not very explicable, although in the dissection report of the case of hydatid abscess that occurred to Valsalva, it is stated that “the biliary duct communicated with the abscess by a large orifice, and was dilated throughout the whole of its extent.” I am not aware, however, that any authenticated case is on record in which it appears that bile escaped from an artificial opening made to give exit to matter, or other fluid, from a hydatid cyst.

At the period when it became a question of great importance whether vent should be given, by an operation, to the matter, it was altogether uncertain whether adhesion had taken place between the cyst and the parietes of the abdomen (although fully aware of the difference of opinion among the profession on this point); yet the debility of the patient, the great disturbance of the system, and the unchanged state of the superimposed integument, rendered it extremely probable that, without the adoption of this measure, the patient must have sunk before the matter had reached the surface, or it must have burst into the cavity of the peritoneum, or at best, into some of the neighbouring viscera. It was clearly, then, as the event shews, giving the patient the only, or at least the best, chance of recovery.

The early treatment, while the pulse ranged about 140, may appear somewhat singular; for during seven or eight days in succession from the time I first saw the case, upwards of a bottle of wine, together with several small glasses of ale or porter, was daily administered, and, to the no small surprise of the attendants, without producing any intoxicating effects. The stomach fortunately remained retentive, and the patient even in some measure relished the treatment,—a circumstance which encouraged me to persevere. After the time specified, however, its good effects became doubtful; it was therefore gradually diminished, more particularly as the symptoms were less urgent, and the patient herself had become averse to stimuli of every de-

scription. Quinine in solution was regularly continued throughout, and strict attention was paid to diet, nourishing food in the smallest possible compass being preferred. The bowels were chiefly regulated by small doses of castor-oil disguised in milk and sugar. The interesting nature of the case has induced me to be thus minute.

If I were permitted to draw a practical conclusion from a single case, it would be, that diffusible stimuli ought to be administered in larger quantity than is usually recommended by the profession in many of those cases in which large abscesses have formed and are about to be opened, as the best means of preventing those fatal derangements of the general system which, under such circumstances, but too frequently result*.

Halifax, Nova Scotia, Sept. 12, 1845.

NEEDLES IN THE PARIETES OF THE HEART.

DR. SKLARSKY, a Russian physician, relates (*Oesterreich Med. Wochen*, 1843) a case of aneurism of the aorta occurring in the person of a woman, æt. 50, and proving fatal by rupture into the pericardium. On examination, a sewing needle, one inch long, was found so firmly imbedded in the substance of the right auricle, and so corroded, that it broke into several pieces on attempt to extract it. Dr. Sklarsky supposes that the needle, having been swallowed, stuck in the œsophagus, then passed into the aorta, and gave rise to the aneurism, whence, by the movements of the heart, it was thrust into the auricle. In the following case recorded by Dr. Leaming (*Philadelphia Med. Examiner*), the progress of the needle appears to have been traceable by the symptoms. A young woman, when stooping over a table, ran a needle into her right breast; a month subsequently, she was suddenly seized with pleuritis, after stooping to pick something from the floor. Five months after this she had pneumonia, with bronchitis of the right lung, and within another month spasms of the diaphragm, which were succeeded by obstinate vomiting, and subsequently by pain about the heart and pericarditis. The needle was found after death in the heart, passing from the back through the right ventricle into the left.—*Dr. Bennett's Report on the Progress of Pathology, &c.: Brit. and For. Med. Review*, July, 1845.

[These cases are not solitary; many years since, a needle was found in the heart of a gunner, who died in the Naval Hospital at Plymouth.—*Ed. Gaz.*]

* We regret that we have not been able before to find room for this interesting communication.—*Ed. Gaz.*

ON MILITARY HYGIENE.

By FREDERIC ROBERTS.

Assistant-Surgeon 59th Regiment.

The Recruiting of the Army.

IN Military Hygiene there lies a tolerably wide and comprehensive range of subjects, in which the recruiting of the army may be included. Besides to propose a slight alteration in the system of recruiting, the following remarks will have for their object to scatter a few observations that may tend to elevate the tone of military physical and moral life.

The probability of life depends upon the degree of physical energy and the sum of resistance made by the organism to the causes of diseases. Constitutional perfection of formation and proportional vitality resist disease, however, in proportion to the more or less favourable physical (external) conditions they are placed in. Further, the higher the degree of moral qualities, the more these powers of resistance increase.

The advantages of moral and physical perfection being, thus generally, briefly considered, I shall premise by offering a few remarks that bear more especially upon the subject, and then advance what is expected to facilitate the acquisition of recruits possessing them. There are agencies to which the soldier and civilian are difficultly situated; such as clothing, diet, habitation and occupation. The one is under arbitrary injunctions to clothe himself, eat, to be lodged and to work, by a certain rule, whatever his temperament, constitution, and power of endurance and accommodation to the same: the other acts more under the dictates of nature, by consulting his convenience and comfort. It is these adverse habits that work such destruction in the frame of the soldier, and not so much the topographical and atmospherical influences, to which persons in civil life are equally subject. When soldiers have to contend against nature in this manner, the highest qualifications should be selected, and should increase as the laws of nature are the more violated, as they are by gradations from the cavalry and artillery to the infantry, in which latter is the maximum of 1e version; the proba-

bility of life being half per cent more in the cavalry and artillery than in the infantry at home.*

The history of armies at all times teaches that they are very susceptible of disease, and although modern armies are far differently situated with respect to physical and moral circumstances, yet there remain, not loathsome, but active and palpable causes of impoverishing the vital resources. By a late account of sickness and mortality in the American army, the number of cases of indisposition, to the number of men in the service, was 281 per cent.; and the number of deaths a fraction less than $1\frac{2}{3}$ per cent. in the same number of men. In our own select Foot Guards the mortality is more than two per cent. In the Prussian army, which consists of men between 20 and 25 years of age, it is a good fraction more than one per cent.; and the average ratio of admissions annually is (111), one hundred and eleven per cent.

Soldiers appear to be subjects among whom loathsome and virulent diseases have arisen in different times. Syphilis began in the army of Charles VIII. at the siege of Naples, and was propagated by it over the greater part of Europe. The "sweating sickness" appeared for the first time in the army of the Earl of Richmond (Henry the VII.,) upon his landing at Milford Haven in 1485, and spread to London, where it raged from the beginning of August to the end of October. So formidable and fatal were its effects, that the coronation of Henry VII., the victor in the battle of Bosworth Field, was deferred till this strange pestilence had subsided. Armies have always been composed of the good and bad. Even at late dates soldiers have been collected from the refuse of the people and from prisons, from whom not so much could be expected, to avoid drunkenness and debauchery, and consequent disease, as from more respectable sort of people. In the cases of devastating epidemics, which the army so often suffers from, (witness

those of China and Scinde lately), the pernicious influence is not universal; that is, the causes of unhealthiness are not to be attributed exclusively to position and climate, but in great measure to the external condition of the soldiers, as must be when those who enjoy certain independence and physical comfort pass comparatively free from their ravages. Physical comfort can best be acquired by a strong mind and a strong body; the mind may not be polished, but it may be intelligent. Some education is necessary to preserve a correct mind, and this more so in the army than in civil life, when it is more practicable to divert it. There is a morbid susceptibility in some* to believe that education would ruin the army: that this is a contradiction in itself is too evident, when it is seen that the educated men only are selected for promotion, and that in the cavalry and artillery especially, men of some education are preferred. The outcry about drunkenness in the army by its officers is constant, and its cause is attributed to the inferiority of the men in character and class. The establishment of libraries and schools in the service contradicts the idea, again, that soldiers should not be educated. On obvious grounds education must improve the welfare of the men in the service, and its reaction on health is conspicuous.

Crime is a fruitful source of disease in the army, both directly and indirectly. The subject of the production of disease by crime is so important, that it shall, on a fit occasion, meet with a separate consideration. Education cannot fail to be an important additional resource to the soldier, as it is seen that in proportion as troops are well situated with respect to physical and moral position, so does crime less prevail. In the cavalry and artillery, where the soldier is held in greater esteem, on account of his relatively higher position, by possessing better education, by the more intellectual nature of his duty, and the greater sphere there is for the exercise of mental qualities, and the consequent dependence upon his judgment, in a state of greater exemption from reliance or control; on these accounts

* The annual ratio of deaths per 1000 of mean strength in the Dragoons and Dragoon Guards is 15·3, by Lieut. Col. Tulloch's Reports. For a period of seven years, in the Artillery at Home, the ratio is about 15·5, which is calculated from a Return called for by Mr. Hume in the House of Commons, dated 12th June, 1845. The ratio in the Foot Guards, according to Lieut. Col. Tulloch, is 21·6 per 1000.

* I conceive it is not necessary to quote these authorities.

crime is less prevalent in these corps than in the infantry both of the household and of the line. The fact is perfectly well known in the service, but I regret that I am deficient in any extensive statistical information to show it; however, I may mention that in a regiment of household cavalry the following punishments were inflicted in three months in London.

Number of days in the guard room, 24; in the black hole, 204; confined to barracks, 1131; which makes an aggregate of 1359 days of different kinds of punishments suffered by the corps, the strength of which, 404, being divided into the number of days, will give an average of about $3\frac{3}{4}$ days of punishment to each man in three months. The aggregate number of days of punishments in a regiment of infantry of the line in garrison in England for three months, in the same year as the above, was 8317, which, divided by the strength of the regiment, 850, gives an average of about $9\frac{3}{4}$ days to each man. I am unable to give a comparative estimate of days of punishment suffered in a battalion of Foot Guards; but the approximation in crime in the latter and infantry of the line must make the difference between them and the cavalry nearly as great as the above. The average number of men constantly under punishment in a battalion of Foot Guards for three months in London was nearly 81; the strength of it being 658. The average for three months in the same regiment of infantry quoted above was $107\frac{1}{3}$; the strength being 850. Therefore, as 658 gives 81, 850 gives $104\frac{2}{3}$, making an inconsiderable average difference.* Crime no doubt in the Cavalry of the Line is greater than in that of the Household. Lieut.-Col. Charles Middleton, at page 154 of the Report upon Military Punishments, says that the strength of the cavalry dépôt at Maidstone was on the average about three hundred, and that during the period of nearly six years

he had served with it only two instances of corporal punishment had occurred. This is infinitely much less than what happens in the infantry. It is not, however, in corporal punishments that the ratio of punishments is to be determined in the cavalry, but in the general amount of all sorts of punishments. Punishments are more decisive in that branch of the service, as far as I can learn; as it is found inconvenient to have many men under modified punishments from the number of horses to be attended to. Major-General Sir Joseph M'Lean, of the Royal Artillery, and Major of Brigade W. D. Jones, of the same corps, besides some non-commissioned officers of the same regiment, in their examinations before the commissioners inquiring into military punishments, testified to the good conduct of the regiment. Mr. Hume, at page 57 of the Report, says, that "he found in the Company's European Infantry punishments extremely frequent. Drunkenness was frequent in the European artillery, but by no means so frequent as in the infantry." Having served many years with sometimes large detachments of artillery in garrisons, in the Mediterranean, the West Indies, and at home, and having always been interested in the economy of different kinds of troops, I had the opportunity to satisfy myself, by inquiries and observation, of the general superior conduct of artillery-men.

How much more interest a person takes about a matter when he knows something, than when he knows nothing about it! A tolerably well-instructed soldier will see, that when his duty is regulated by a free, orderly activity of mind, it provides rather a source of enjoyment than of annoyance. A relation of this sort between intellectual and physical activity cannot fail to make health better and life happier. In the infantry a man learns many little things; but they are isolated matters, without interesting connexion, and have no deep hold in the mind: the method of learning is so dry, that there are consequently many failures in instruction; good non-commissioned officers being proverbially very scarce, as it is likely to be the case when the men cannot be attracted and interested by stiff exercise of mere memory, which never

* The above return of crime in the Guards was made at a period of the year when crime was uniformly more prevalent than in the remaining part of the twelve months. It falls short of what the Duke of Wellington stated it to be at page 324, in the Report upon the system of Military Punishments, when he was examined ten years ago by the commissioners. It was then between 80 and 100, when the strength was less than it is now.

awakens the feelings or imagination. It is a paramount object to procure as well educated and respectable non-commissioned officers, who I consider to be the fulcrum of an army, as possible. They command the respect of the privates, who see that better men than themselves are associated with them in showing respect to their officers, in their duties in quarters, on parade, on guard, in the field, on the march, in their voyages to distant and unhealthy climates, and in all their privations and perils. The almost assimilation of the duties and position of the non-commissioned officer and private has a vast hold upon the conduct of the latter, satisfies him, and not unfrequently kindles in him no little pride that his duty should be so intimately associated with one whose respect is so greatly reciprocated by his officer.

Some persons argue that soldiers should be little beyond machines; but these automata are condemned according to the principles of these remarks, and it cannot be denied that those soldiers who are the most elevated in physical and moral (though not always virtuous) qualities are the best. No one could say that the sepoy is equal to the British soldier, nor that the inferior Portuguese and Spanish troops associated with the British in the Peninsula, and who were Caucasians like ourselves, but in a less civilised state, were equal to the English.

Certain degree of encouragement to learning in the army would give occupation for the time being, provide intelligent non-commissioned officers, who, as has been before said, are not over plentiful in the service, and would supplant the vicious habits of drunkenness and absence, and the consequent punishments. There can be no foundation for apprehension on the score of over-educated men being admitted into the service, when it is considered that 37 per 1000 die annually in the army,* and about 21 per 1000 are invalided and otherwise discharged.† It will easily be perceived,

even by the most fastidious upon the subject, that little mischief can arise then; as but few would profit and become great scholars in an army which loses by deaths and discharges some seven thousand of its strength annually. Considering, too, the comparative want of inducement to remain in the infantry service, however much this has of late improved, men of superior education would not be likely to remain in it long; nor is it to be supposed that they would behave so well as in many other subordinate and dependent positions; such as, for example, in the best kind of mercantile naval service, where there is nearly as severe discipline as in the Royal Navy, but where the actual advantages are greater than in the army. Strict discipline is observed likewise in many mercantile establishments, and even in private families.

Reasoning, then, from analogy, it is not seen why it should be expected that an educated man should behave himself better in the army, than one equally educated in a civil situation.* It has often occurred to me that an oversight must be admitted in not establishing a species of apprenticeship in the army, as in almost all professions and trades. This is the more necessary in the army, insomuch as it is not every one who can become a clean and smart soldier, who thereby avoids much punishment, and, as I believe, sickness. It is no matter how stupid and perverse a soldier is, his discharge from the army

are comprehended. The invaliding from India, where it is high, and the remaining eastern commands, is not included, as the Reports upon those stations are not at hand. But the above estimate is not far from truth.

* It is an axiom with an officer of great practical knowledge, Capt. Graham, 50th Reg. "that the situation of a soldier ought to be such, that the greatest punishment should be the loss of it." He draws an inference from what occurs in the police force, especially in Ireland, where the men are put upon their good behaviour by fear of dismissal. There is, no doubt, considerable scepticism as to the possibility of maintaining discipline in the army save by coercion alone. It is not effected, however, solely by this; it must be admitted that all non-commissioned officers are induced to behave well to maintain their position, and that old soldiers do so to preserve their extra pay. There are very many, even young men, who would rather remain in the cavalry and artillery, and even in the infantry, than be turned out. The principle is in effect, then, in degree. The feasibility of its extension is evident. A man may, however, draw extra pay without good conduct, but from length of service.

* Marshall on Enlisting and Discharging, &c. page 93.

† See pages 15 and 16, Statistical Reports on the Sickness, Mortality, and Invaliding in the United Kingdom, &c. by Lt. Col. Tulloch. In the above estimate the troops at home, in the Mediterranean, the East Indies, and America, only

is seldom allowed, except from physical or mental imperfection. Occasionally, however, bad characters are turned adrift when regiments are at home. In the household cavalry, and artillery too, it is the custom, I believe, to discharge men of indifferent characters and qualifications—an excellent plan, for more reasons than one: it prevents the contamination of the men by these drunken and riotous persons: the evils of mutinous and insubordinate crimes are avoided also. There are numerous dull fellows, of very sober habits even, who are perpetually incurring the displeasure of their superiors in matters chiefly regarding the proper order of their equipment, which is more or less slovenly with them. A period of probation as a soldier should be considered, because really there are more dull and simple-minded people in the army, especially the infantry, than in other professions and trades, from the obvious reason that in the latter they could not acquire the knowledge of them. Sailors often serve apprenticeships, and unless they become tolerable seamen otherwise, are not employed in the better sort of the service, and sometimes quit it altogether.

If it is seen that education is useful in the cavalry and artillery, it is decidedly more so in the infantry. Soldiers without intelligence are, says Marshall Marmont, in general inert and heavy, and vary much less in character than those who are smarter, and prone to reason and compare. Some allowance should be made for the restlessness of spirit, the wavering character, and often indolent habits of many recruits, over those who remain in more homely occupations. These characters naturally require more excitement than more steady and reserved people; so all reasonable attempts should be made to keep their excitement within bounds, by affording interesting occupation and amusement. The acquisitions of reading and writing are particularly desirable; but are not invariably included as essential in the requirements of a soldier, as there are, doubtless, many smart and good soldiers, who cannot read and write, with as much intelligence and resources as better educated men; but as education smartens stolid men, it should be encouraged. Many argue that the requirements of reading and writing are impracticable and un-

necessary in time of war. This cannot be admitted upon the principles inculcated in these remarks, the more especially as now there is very little war. As drunkenness is the chief crime in the army, especially abroad, the requirements of reading and writing, if properly encouraged, would assist to prevent it. In hospital, where many soldiers pass a great part of their time*, reading would lighten the tedium of long illnesses.

The more elevated the tone of physical and moral life in the army in times of peace, the less will be the failure of it in times of war; the more degraded the men are during peace, the more so they become in war. The heavy crimes of the French army in Algeria result chiefly from the fact that the men sent out to the regiments stationed there are of known bad character, are degraded in the eyes of the army, and being reckless in consequence, commit base crimes, and suffer dreadful punishments and further degradation.† Baron Bertrand, Chef de Bataillon, examined before the Commissioners to report upon Military Punishments, when asked if his experience led him to believe that the punishment of sending criminals to "Companies of Discipline" was effective for reforming the soldiers, replied that it did not reform them, but it rid the regiment of them‡. Confirmed bad characters are seldom reformed, especially if the means used for attracting them from their vicious course are limited. A chaplain of a county prison expresses himself in his report last year, that "to lessen crime moral discipline should be used instead of mere corporal punishment, and declared that mere punishment alone, or the fear of it, will neither prevent the commission of crime, nor cure its effects on the character." Recruits who cannot read and write never begin to learn after enlistment in the regimental schools.

Crime is rife in the army. Captain Layard, on Tuesday, the 2d of July last, in the House of Commons, showed that by a "Return he held in his hand, it appeared that from 1839 to the year

* In the Windward and Leeward Command each soldier is sick 273 days annually; in Canada, 16; in Bermuda 19, and so on.—*Lt. Col. Tulloch; Statistical Reports.*

† Times; quoted from French papers. July and August, 1845.

‡ System of Military Punishment.

1844, 3355 soldiers had received corporal punishment, and the number of imprisonments during the same period was 28,190, being nearly one-third of our whole army. Some of the latter were even of repeated imprisonments, as there were many soldiers who spent the greater part of their time in gaol.* Seeing that excessive crime prevails in the general mass of the army, but chiefly, as has attempted to be shown, in the infantry, it is not too much to hope that, if the selection of recruits for the infantry were equal to that of the cavalry and artillery, it would assist to prevent this perpetual imprisonment and constant exposure of the health of the men. The evidence of the witnesses examined before the Commissioners for inquiring into the system of Military Punishments, goes much to say, that the recruits selected for the cavalry and artillery were of a stamp more conducive to their physical and moral preservation than those raised for the infantry of the line at least.

Having attempted to show that men of a certain degree of education are the most eligible for soldiers, it will now become necessary to discover the plan to accomplish their selection. The method proposed consists in extending the sphere of recruiting. The distribution of recruiting parties is very unequal, not only with respect to extent of territory, but to population as well. From examination of the distribution of recruiting officers for the last five years, it is seen that they have been generally confined to the larger towns, and especially to those in the manufacturing districts. A line drawn from the estuary of the Wash, as is illustrated by the accompanying map, on the east coast of England, to Gloucester, from hence to Liverpool, and in a north-easterly direction to the mouth of the Tees, on the eastern coast again, and down to the point started from, will include an area something more than the fourth part of England and Wales, wherein are distributed twenty-two recruiting officers and their parties, exclusive of those employed by the Company's Service. In glancing over the map of England and Wales it is apparent that these parties are situated in a very circumscribed space, and on each boundary have broad lines of de-

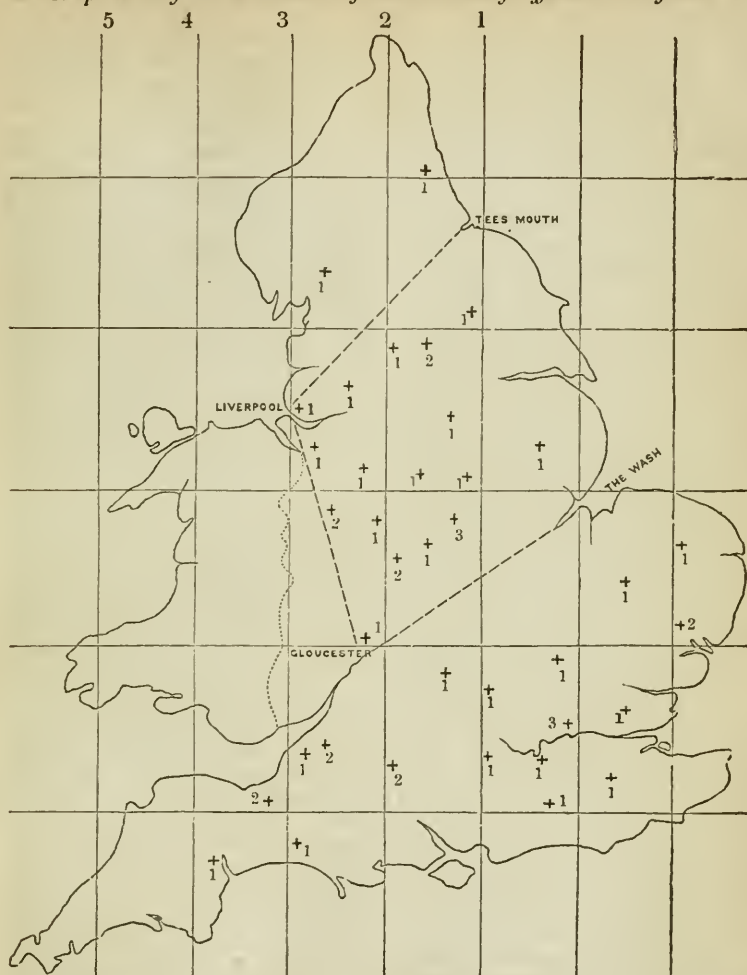
marcation*. On the northernmost boundary of this area are situated two recruiting officers and their parties†. On the western boundary, Wales, there are no recruiting officers' stations; on the southern side there are at present twenty-four recruiting officers stationed at different points‡. These lateral portions of the country form something less than three-fourths of England and Wales. From this distribution, then, it is seen that a large fourth part of the country is supplied by twenty-two recruiting stations (head quarters), and that small three-fourths are supplied by twenty-six officers and their parties; a very unequal proportion both in respect of territory and population. This inequality is not confined to those divisions of the country, but again to subdivisions, or head-quarters of recruiting officers. It is very well known that in hundreds of towns and villages no recruiting parties ever appear; their haunts being much confined to the larger towns, where they congregate thickly, seeking recruits from among parts only of the population, and not from it generally. That there are opportunities for enlistment more equable throughout this portion of the United Kingdom, when the stations of troops are taken into account, is true; but the enlistments that take place at head quarters of regiments and depôts are so few that they scarcely deserve notice. Wales contains a population of 912,503; Yorkshire about 1,500,000. In this county there are four superintending officers of the Line, and one of the Royal Marines, with, probably, the average number of five parties under each,—making twenty-five parties. As, therefore, 1,500,000 is supplied by twenty-five parties, 912,503 ought to be supplied by about fourteen, whereas it is supplied by none, except occasionally. A few years ago the 23d Regiment

* The head-quarters are:—York, 1; Leeds, 2; Bradford, 1; Sheffield, 1; Manchester, 1; Liverpool, 1; Chester, 1; Newcastle-under-Line, 1; Shrewsbury, 2; Wolverhampton, 1; Birmingham, 2; Coventry, 1; Leicester, 3; Derby, 1; Nottingham, 1; Lincoln, 1; and Gloucester, 1. The numbers opposite the name of each town denotes the number of recruiting officers at the station.

† Newcastle-upon-Tyne and Kendal.

‡ The stations are these:—Norwich, 1; Bury St. Edmunds, 1; Ipswich, 2; Hertford, 1; Chelmsford, 1; London, 3; Kingston, 1; Tunbridge, 1; Horsham, 1; Reading, 1; Aylesbury, 1; Oxford, 1; Salisbury, 1; Bath, 2; Bristol, 1; Yeovil, 1; Taunton, 2; Exeter, 1.

Map showing the distribution of the Recruiting Officers in England.



The cross marks the position of the Town, and the figure denotes the number of Recruiting Officers stationed there.

sent a party into North Wales for some months, and now and then parties go into South Wales; but generally parties approach the borders of the Principality only. From the Statistics of Recruiting for the year ending March 1845 (drawn up by order of the Director-General), it is seen that Wales produced only 141 recruits; whereas Scotland produced 2061 out of a population only two-thirds greater than Wales*. The same disparity in the

raising of recruits may easily be inferred to take place in other localities in England, if taking the position of the recruiting officers is a criterion, which it is plausible to do after what has been shown with respect to Wales. Habit has considerable influence over everything—recruiting as well. Recruiting parties, from all the sources that I have been able to gather information, remain very much in the same places, and drain therefrom too much of the refuse population. The manufacturing towns in Yorkshire, Lancashire, Staffordshire, Notts, and War-

* The population of Scotland was according to the last census 2,620,610. In the year ending 31st March, 1844, Wales produced only 167.

wick, are crowded with parties, when it would appear from the map that large tracts of country in the north-east, south, and west, and particularly in Wales, are not nearly so thickly studded with them as the circumscribed manufacturing districts. To show how circumscribed parties are placed, it may be mentioned that out of the four parties at present under Lieut. Reynolds at York, two are stationed at head quarters (York), and two are detached. At Leeds, there are at present, under Lieut. Connor, four parties, and only one detached. When Capt. Peebles, 59th Regiment, recruited in Birmingham two and three years ago, he had ten parties under his charge; five stationed in Birmingham, and five detached. But the number of parties under his charge fluctuated. At one time he had thirteen; seven detached, and the remainder at head-quarters. These instances can be multiplied if there was further occasion. The effect of this crowding of parties is unprofitable; time and money is expended in recruiting men who are ultimately rejected. Dr. Armstrong mentions it as a fact, told him by Sir J. McGrigor, "that out of 613 men enlisted, almost all of whom came from Birmingham, and five other neighbouring towns, only 238 were approved for service*." The distribution of recruiting parties is not only out of proportion to the population, as it has been said before, but likewise to the number of persons eligible for enlistment. On the average of the whole of England (proper), taking the manufacturing and agricultural districts together, there are nearly the same number of males between the ages of 15 and 20; but as there is more sickness in large towns than in suburban and rural districts, it is evident that there are more persons between the above ages, in proportion to the population, who would present themselves for enlistment in the latter than former. There is an excess of males between the ages of 15 and 20 in favour of Wales; there being for England (collectively) 988 in 10,000, and Wales (collectively) 1009 in 10,000†. The chances are more in favour of districts, scattered over with small towns and villages, in producing good recruits.

In addition to the evidence quoted above from Dr. Armstrong, it may be mentioned that in the Leeds district, which includes a vast manufacturing population, half the recruits examined last year were rejected.

An excess of available young men often occurs at different seasons in the rural districts, but especially in winter, when employment is scarce. This is almost constant to a more or less extent; when, on the other hand, depression in trade and want of work in the manufacturing districts occurs at uncertain periods, and for a short time only, the advantages afforded to recruiting by critical periods in trade and agriculture have often shown themselves. During the Chartist riots a great many men enlisted in the manufacturing towns from want of work.

[To be continued.]

RUPTURE OF THE AORTA IN A HORSE.

BY MR. W. A. CARTWRIGHT.

The following account is interesting from the similarity of the lesion to one which has been frequently noticed in the human subject. The animal was about fifteen years old, in good condition, and, to all appearance, perfectly sound. On the morning previous to his death, he had been led a distance of four miles. During the journey he was sometimes walked, and at others trotted. In the evening he appeared perfectly well, and was left eating. On the following morning he was found dead. It appeared that he had been violently struggling and staggering about. Upon examining the thorax, the lungs were found highly congested; the trachea was also violently inflamed inside. The pericardium contained about two quarts of bloody serum and coagulated blood. Some stringy portions of coagulum directed attention to a cavity leading towards the origin of the aorta, and close up to the heart. The finger introduced here went directly into the aorta. On opening the vessel, scarcely a vestige of disease appeared in its coats: its inner membrane was beautifully smooth, and of a natural colour, and the whole of its substance was not at all thickened; in short, there was nothing more than an opening into it through which the finger could just pass, and which was surrounded by portions of loose, thin membrane, which had covered that opening.

It appeared to Mr. Cartwright that a circular portion of the aorta, of about half an inch in diameter, had, excepting a very thin covering on its outer side, become absorbed, without implicating the adjoining parts by any adhesions or depositions.—*Veterinarian*, July, 1845.

* The Influence of Climate, &c. by Dr. Armstrong.

† Annual Report of Registrar-General, 1841; pages 66 and 67.

MEMOIR ON CERTAIN CEREBRAL AFFECTIONS DEPENDENT ON CHLOROTIC ANÆMIA.

By A. DUCHASSAING.

In a lately published memoir*, M. Beau endeavoured to shew that in cases of chlorotic anæmia, the blood, instead of being deficient, was actually increased in quantity. Hence he referred the symptoms to a serous plethora of the vascular system. If this view be correct, it follows that in such cases there should be a strong tendency to hæmorrhage and dropsy.

M. Castelneau has observed, that dropsy not depending on organic disease often accompanies chlorosis; and M. Morizot has collected cases shewing that central congestion and hæmorrhage occasionally occur in the course of anæmic diseases. But little attention has been hitherto given to this subject: indeed, the connection between serous plethora and hæmorrhage has not been noticed.

The cases which I propose to relate may be thus divided:—

1. Cases of cerebral congestion in connection with anæmia.

2. Cases of hæmorrhage.

3. Cases of hæmorrhage with dropsy, shewing the intimate connection between these two pathological conditions.

4. Cases of hæmorrhage occurring in dropsical subjects.

5. Case of scorbutic apoplexy; (this case is given to illustrate the connection between scurvy and apoplexy).

I. *Cases of cerebral congestion in chlorotic anæmia.*

M. Morizot in his treatise mentions four, which had been under M. Fiquier's care.

This was a young chlorotic female of robust constitution. The left arm was colder than the right, and affected with numbness and formication. She suffered from intense throbbing pain in the frontal and supra-orbital regions, with vertigo and tinnitus aurium. In addition to these symptoms there was stupor, with depression and general restlessness. With the exception of a slight headache, these symptoms disappeared on the sixth day.

2. A girl, 18 years of age, naturally of a pale, exsanguineous aspect, and slight figure, was the subject of chlorosis with amenorrhœa. She had, at two previous periods, suffered from a leucorrhœal discharge; her general symptoms were emaciation, wakefulness, headache, vertigo, and tinnitus aurium. On the sixth day from her admission, she was seized with drowsiness, numbness of the right side of the neck and right arm, together with a sensation of cold and formications extending to the fingers. The intellectual faculties were manifestly diminished; the eyes were void of expression, and the countenance dull and pale.

3. A woman, 25 years of age, the subject of chlorosis with irregular menstruation, suddenly experienced an excessively severe lancinating pain in the head, with vertigo and tinnitus aurium; at night she was restless, and generally wakeful, and when she slept she was troubled with dreams; there was lesion of motion with numbness in the left arm, and in addition she suffered from formication, a sensation of cold, and stupor. These symptoms after three days gradually abated.

4. Louisa B. a sempstress, 30 years of age, was admitted at the end of April, 1844, under M. Beau into the Salpêtrière. Her face was of a greenish-yellow tint, her lips pale, complexion semi-transparent; she suffered from pain across the temples resembling the effect of a tightening cord, aggravated by occasional momentary pulsations. When she sat up in bed she was affected with stupor; the globe of the eye was painful, and a strong light produced distress; the pulse was 100, strong and full, the skin warm, the pulsations of the carotids forcible and evident to the eye, and the stethoscope detected a very strong bellows-murmur; the tongue was pale and moist; there was thirst with anorexia, and occasional vomiting; pains in the back and epigastrium, with constipation. She had habitual cough, and had spat blood. At the apex of the left lung the stethoscope detected the presence of a large cavity. On the 28th her nose bled profusely, yet the symptoms continued unabated; indeed, as an apparent consequence, she was affected with amaurosis and stupor for a short time, and her speech was muttering.

* Encyclographie des Sciences Médicales, 1845.

On the 30th, the skin was hot, the pulse strong and frequent; and when she sat up she suffered from disordered vision, and soon fell back on the bed; her head felt heavy; the eyes were amaurotic and pupils dilated. There were, in addition, formications of the legs: the expectorations were purulent and streaked with blood.

On the 1st of May, in addition to the above symptoms, she was seized with paralysis of sensation in the anterior part of the left thigh, which continued until her death, fifteen days from this date.

These cases of cerebral congestion complicated with anæmia have already been noticed by some observers; but they have merely stated the fact, and have never referred it to the increased quantity of blood which is always present in the affection called anæmia. M. Andral, in the fifth volume of his *Clinique Médicale*, thus refers to the subject of cerebral congestion. "It cannot be doubted that in many individuals a state of general plethora coincides with the appearance of symptoms indicative of the existence of cerebral congestion; but it is far from being so in all cases, for this congestion is even met with among persons remarkably anæmic. We have lately seen at La Pitié, a woman, who was the subject of uterine cancer, and who was much weakened by profuse and continual menorrhagia, yet this woman was affected with fatal cerebral hæmorrhage."* And again, in the same volume, "We resort to frequent bleedings without effect, the signs of congestion do not disappear, or if they are diminished or disappear immediately on the opening of the vein, yet they quickly return with their former intensity, and even in some instances become stronger, especially if the patient has been weakened by repeated bleedings. It is in some of these rare examples that blood-letting not only fails to produce any abatement, but actually establishes in the system such a disturbance that the signs of cerebral congestion are only exchanged for those of apoplexy."†

II. Cases of cerebral hæmorrhage.

5. A sempstress, 22 years of age, became a patient under M. Fouquier,

January 3d, 1838. She was tall, of good constitution, her general health was good, and catamenia regular. Her illness dated from the previous November, at which time the catamenia ceased without any known cause, and she was seized with lassitude, oppression, and symptoms of dyspepsia. These symptoms daily increased in intensity, when she was compelled to leave her work and put herself under treatment. On admission, her face was pale, with a greenish hue, and she suffered from the following symptoms: a pulsating headache, constriction across the temples, vertigo, dimness of vision, troublesome humming in the ears, the tongue pale, without coating; anæmia, acid taste in the mouth, sensation of painful weight at the epigastrium after food, lasting for two or three hours, and then terminating by the rejection of part of the food; constipation, almost constant oppression and palpitation increased by exertion, as was also the case with the headache; the pulse 88, fuller on the right side (owing to the different calibre of the two arteries), slight œdema around the ankles, languor, and general dulness. These were the symptoms of chlorosis complicated with gastralgia. She was ordered ferruginous preparations, with counter-irritation over the epigastrium, with soothing applications, and a few leeches to the vulva. These means were so efficacious that, on January 27th, she was enabled to leave the hospital, although still suffering from dyspnoea, palpitation, and slight indigestion.

On the 12th of April, she was readmitted, when she stated that the catamenia had not re-appeared, that the symptoms from which she had suffered at the period of her leaving the hospital had continued, and even increased in intensity; that during the preceding month she had felt very ill, had been troubled by frequent vomitings as well after food as at other times, and that for some days she had had a severe headache; her countenance was of a greenish hue, and puffy; she had severe throbbing pain in the head; slept soundly; her intellect was unimpaired; the eyes were dull and languishing. There were also present vertigo, tinnitus aurium, pale tongue with a whitish coating, dyspnoea, constant palpitation, systolic bellows-murmur,

* Page 283, edition 1833.

† Page 293.

with a similar sound also audible over the carotids, in which the pulsation was violent and double; pulse 76, full and hard. She was ordered to take preparations of iron with diaphoretics, and to use the foot-bath.

On the 13th she was lying on her right side, and apparently in deep sleep: on being called and shaken she opened her eyes, and answered in a languid manner. The pupils were dilated, the motion of the limbs free, the sensibility unimpaired; the arteries pulsated strongly; the face was pale.

Sinapisms, Acetate of Ammonia, &c.

On the same evening she could not be roused; the limbs were paralytic, though exhibiting some signs of sensation on pinching; the pupils dilated; deglutition lost; a copious flow of saliva from the mouth; inspirations 40 in the minute; heart's impulse very strong, and perceived over the whole chest; pulsations of the carotids violent; abdomens raised by the beating of the aorta; the beating of all the superficial arteries evident to the eye; bruit de râpe in all the arteries excepting the carotids, in which there was a continual murmur; the skin pale, warm, and moist. Sinapisms, enemata of assafoetida, and blisters to the thighs, were ordered. It was supposed that these symptoms were the effects of serous effusion in the ventricles.

On the 14th the countenance was much altered. Slight sinking of the orbits; respiration sighing; the arterial pulsations more manifest than on the preceding evening. She was bled, and in an hour expired. The blood drawn contained a large proportion of serum.

Autopsy on the 15th.—The vessels of the pia mater and sinuses were gorged with black blood; the lower portions of the brain were harder than natural; the ventricles were not much dilated, and contained from four to five ounces of yellowish serum. The horizontal sections of the brain presented a dotted sandy appearance, becoming more evident towards the lower portions. On a line with the corpora striata and the optic thalami, extravasated blood escaped, though there was an insensible gradation from congestion to extravasation. This was most particularly observed in the central parts of the striated bodies, which were dotted with small apoplectic clots, from the size of a

millet to that of a hemp-seed. In the spaces between these clots, the cerebral substance was of a yellowish colour, soft, and not so firm as in the central parts, where it was only congested. The condition was similar in both hemispheres. The plexus choroides was red, and gorged with blood. The cerebellum contained some light red spots, yet without any extravasation. The lungs were natural; the venous trunks, as well as the heart and aorta, were filled with blood. The heart was natural. The blood in the heart and great vessels was partly liquid, partly coagulated; the fluid blood was less red than natural. The abdominal organs were healthy; the uterus large, being four inches in length, and three inches in breadth. It contained an embryo, with all its appendages, in a perfect state, which M. Velpeau, to whom it was shown, considered to be about six weeks old.

6. *Chlorosis, cerebral and pulmonary hæmorrhage*.—A female, 18 years of age, was admitted into La Charité, January 30th, 1839. She had been a resident in Paris six months, during which time the catamenia had been regular as to period, but decreased in quantity and altered in quality. She was pale, had headache, palpitation of the heart, dyspnœa on exertion, with other symptoms of indigestion. After an application of leeches for the relief of abdominal pain, with fever, the chlorotic symptoms increased; her face was very pale, of a greenish-yellow hue; the lips and gums were pale. She had intense headache, vertigo, dimness of vision, tinnitus aurium; and on the least motion these symptoms increased. The pulse was 108, full and large; there was a strong bellows-murmur in the carotids, a souffle in the crural artery, and also in the first stroke of the heart, the impulse of which was strong. There was loss of appetite, dry tongue, constant thirst, and the bowels were constipated. She was ordered to take mucilaginous and nutritious drinks. This patient shortly fell into a state of continual torpor; coma supervened, her answers became slow and embarrassed; constant sighing, with agitation; intellect impaired; sensation diminished; deglutition difficult; pallor extreme. She died in a state of coma on the 5th of February.

Autopsy 40 hours after death.—*Head:* Meningeal vessels greatly injected; surface of brain of a deep red colour, especially the lateral and middle part of the left hemisphere. In the central part of middle lobe was a spot as large as a five-franc piece, formed by extravasated blood, in a state of coagulation; below this, in the white substance, there was an apoplectic cyst, containing a clot of blood of the size of an almond. The walls of the cyst were of a decidedly yellowish tint, interspersed with red dots; they were softened, as also were the adjacent parts. In the left posterior lobe was another cyst, but smaller; and in the convolutions some extravasated coagulated blood. In the right lobes were six smaller clots. The lungs also contained four apoplectic clots.

This case is taken from M. Morizot's *Treatise on Chlorosis*.

REMARKS.—M. Beau has observed, that in the hæmorrhages occurring in anæmic subjects the clots are numerous, and the two last cases fully justify the observation. The diffused meningeal hæmorrhage, of which we shall give an example (Case 9) confirms this observation.

7. *Anæmia.*—Dr. Marshall Hall states that a dog, from which 56 ounces of blood had been taken in seven days, was seized with apoplexy, and on examination of the body, blood was found effused in the membranes, and also in the lateral ventricles.

8. M. Andral* mentions the case of a woman, the subject of uterine cancer, weakened by profuse hæmorrhages, and reduced to a state of anæmia, whose death was nevertheless the result of cerebral apoplexy.

III.—*Cerebral hæmorrhage, complicated with dropsy, occurring in persons affected with chlorosis and anæmia.*

9. A woman, aged 80, became a patient at La Salpêtrière in October 1844. Her person was small and thin; her skin sallow and dusky; the ankles were slightly œdematous; the pulse large and full, but not frequent; and she had pain, but not constant, in the head. After a violent quarrel, she was suddenly deprived of consciousness.

The eyelids were closed, but the pupils acted; deglutition was easy; respiration deep, and rather frequent. She lay motionless on her back, without any marked hemiplegia, but merely with stiffness of the limbs, more evident on the right than on the left side. Bellows-murmur in the right carotids. On the following days, the respiration became gradually embarrassed, mucous rattle in the trachea supervened, with difficult deglutition. The evacuations were passed unconsciously. She was bled three hours after the attack, and on the following day a blister was applied to the nape of the neck; she died on the fourth day.

Autopsy.—On removing the cranium, an effusion of liquid uncoagulated blood was found on the right side, almost sufficient to fill a glass. It was situated within the arachnoid, and oozed out when the dura mater was incised. It extended inferiorly to the cerebellum, but did not reach to the base of the brain. There was a little blood in the substance of the membranes. No rupture of vessels could be detected. On the left side the membranes were infiltrated with serosity. The subarachnoid fluid was more than usually abundant. The two ventricles were filled with transparent fluid, and freely communicated, owing to the destruction of the septum. There was no clot in the substance of the brain.

10. *Serous infiltration in the subarachnoid cellular tissue, with œdema of the lungs.*—A woman, aged 86, was seized with apoplexy during an attempt to micturate on the night of the 1st of November. The left extremities were entirely deprived of the power of motion, without any lesion of sensibility; the mouth was drawn to the right side, and the speech embarrassed, but her intellect was unimpaired; she was seized with convulsions rapidly succeeding each other. We were struck by the remarkable cachectic aspect of her face. Her pallor was extreme; her flesh soft, flabby, semi-transparent; her body swollen. The pulse was rather strong. Blood was taken from the arm, and purgative enemata, with revulsives to the lower extremities, were administered. The respiration, at first simply accelerated, became embarrassed, and at length stertorous, and she died at the end of four days.

Four years previously she had suffered

* Clinique Médicale, Tome v. p. 283: 1833.

from an attack of paralysis on the opposite side; and had somewhat recovered the sensibility and motion of the parts. Two months before her death, she had been much affected by the loss of a dear friend. Her appetite was usually small; she had been subject for a long time to numbness and weakness in the arms.

Autopsy, 24 hours after death.—There was effusion of blood below the cerebellum and middle lobes of the brain; the arteries were ossified; the sub-arachnoid cellular tissue œdematous. A clot as large as an egg occupied the right optic thalamus, bursting into the ventricle, and filling it with blood. The left ventricle contained three or four spoonfuls of reddish serum. The corpus striatum was healthy. On a level with this body, on the left side, there was an old apoplectic cyst, containing clear coffee-coloured serum, and large enough to hold a nut. The heart was hypertrophied, the valves healthy. Spleen small. Lungs of a deep colour, œdematous, and containing at their apices, chalky concretions. Liver soft and gorged with blood.

REMARKS.—We notice in this case, besides the effusion of blood, œdema of the subarachnoid cellular tissue, ventricular serous effusion, and also œdema of the lungs. It confirms our statement regarding the intimate connection between hæmorrhages and dropsies, which arise often from the same cause—*polyhæmia*.

It may be proper to direct attention to the hypertrophy of the heart, in consequence of its increased activity to propel the increased quantity of blood. The hypertrophy is here consecutive to the anæmia.

If we now pass on to the consideration of the cerebral phenomena in cases of the above description, it will appear very evident that they result from a state of *polyhæmia*. If they depended on an *anæmic* condition, they would be diminished in proportion as the mass of blood is increased. But the contrary holds good. When the patient lowers the head, the giddiness increases, vision becomes dim, and she is likely to fall; but the position of the head favours an increased flow of blood to it, and hence the result. The same occurs when the patient coughs; as in the fourth case, in which amaurosis came on during a fit of coughing.

Another proof may be obtained by reversing the experiment; namely, lessening the quantity of blood, and noticing the effects upon the system. Authors state that it is wrong to bleed chlorotic patients, since the symptoms, although they may be temporarily ameliorated, yet shortly return with increased intensity. Let us examine this statement. Blood is drawn; the headache is relieved: but, if these morbid phenomena depended on anæmia, the symptoms would be rather increased than diminished by the bleeding. At the end of a few days, however, the symptoms return with greater violence, and the reason is, because fresh blood has been formed, and in greater quantity, than before the bleeding, although it may contain more serum. We will add another proof: M. Castelneau has drawn attention to the occurrence of dropsy in chlorotic patients, in whom the œdema around the ankles is so frequent a symptom; but it is acknowledged that whenever the quantity of blood is diminished in the vessels, these rapidly absorb the surrounding fluids; can we therefore conceive that in anæmic patients, in whom the vessels are nearly empty, serum should be extravasated? We may, then, conclude:—

1. That M. Beau is correct in calling anæmia serous polyhæmia.

2. That in plethoric subjects there is tendency to dropsy and hæmorrhage, which either separately or together may occur in persons in a state polyhæmia.

4. That such persons are in a state of habitual plethora, and that, when seized with apoplexy, they present the following symptoms: headache, confusion of head, noise in the ears, momentary dimness of vision, and formications in the limbs. But such are the symptoms of cerebral softening, which, therefore, either by symptoms or progress, it is impossible, in the present state of science, to separate from the cases of apoplexy dependent on polyhæmia.

The predisposing causes of cerebral hæmorrhage are stated by authors to be, the period of life between forty and sixty, shortness of neck, sanguineous temperament, large heart, male sex, gout, mental study, continence, (*les affections morales*), plethora, and, we may now add, anæmia, scurvy, and whatever may tend to their production;

as nourishment deficient in quantity or of bad quality; cold moist air; want of good clothing; disorder of the stomach inducing indigestion, and thus interfering with nutrition, as dyspepsia, cancer, &c. To these may be added, profuse hæmorrhages; frequently repeated bleedings; excessive discharges; and all diseases with cachectic tendencies.

Thus it appears that the same affections result from opposite hygienic conditions; that cerebral hæmorrhage is favoured by a nourishment whether too abundant and rich, or too sparing and poor, inasmuch as in both instances the mass of blood is increased; only in one the blood is red, plastic, and rich in globules, but in the other, pale, fluid, and abounding in serum. It may perhaps be said, that hæmorrhages occur more frequently in anæmic patients, because their blood containing less fibrin, has a greater tendency to escape from vessels which are surrounded by soft and yielding tissues.

It was formerly considered that the general signs indicating cerebral hæmorrhage were, an injected face, short neck, large shoulders, and a vigorous heart. These facts are not exactly borne out by modern experience, as cerebral hæmorrhage has been proved to exist in numerous cases, when all the characters of the so-called apoplectic diathesis have been absent. We think, however, by considering the question more comprehensively, that we are able to point out the general characters of the apoplectic diathesis; as, in some cases, face injected, eyes brilliant, conjunctivæ red; in others, face pale, cachectic, and at the same time of a greenish yellow tint, with a tendency to headache, pulsating and constrictive, (*i. e.* as if arising from the tightening of a cord); confusion of thought, habitual ringing in the ears, pulse strong and full, pulsation of superficial arteries evident to the eye; bruit de souffle more or less audible in the carotids; excessive palpitation of the heart, especially on exertion in an ascending direction, causing at times considerable dyspnœa. These phenomena are more marked in some cases than in others; and there may be also momentary disturbance of vision, somnolency, formications, and prickings of the limbs. These remarks respecting the causes of cerebral hæmorrhage may

also be applied to other hæmorrhages, serous apoplexies, and also to all dropsies.

Treatment.—Physicians have been led, in treating these affections, to adopt too readily the practice of blood-letting. But in my opinion the treatment ought to vary according to the cause of the disease. If it depend on true plethora, we recommend active bleedings; but, if a serous polyhæmia, we abstain from blood-letting, for the congestive symptoms of anæmia can only, in this way, be temporarily reduced. Generally after one or two days the symptoms reappear with increased violence, and consequently the momentary relief is obtained at the expense of much greater danger, because the blood becomes more serous, and the polyhæmia much increased. Another method of treatment has been directed to the diminution of the quantity of the blood, by evacuating the serum, as by blisters, or other revulsives; and among these we would recommend *la botte ventouse* de Junod. Under its influence the blood leaves the head, the face becomes rapidly pale, and the part to which it is applied swells considerably. An objection has been raised against it on the ground that the blood afterwards returns to the head with increased force, and more dangerous symptoms arise in consequence. This objection is founded either on want of experience or of knowledge in the application of the instrument; for we have often employed it under M. Beau, and have never witnessed the alleged disadvantages. The limb to which it has been applied becomes red, swollen, and, if it be left on for a proper time, tense, and hard to the touch. This tumefaction after the removal of the instrument lasts for many days; the skin is first greenish yellow, then green, and at last is restored to its natural appearance; and sometimes there is slight ecchymosis. This is evidently not a simple afflux to the part, but a real extravasation into the cellular tissue of the limbs, and of many days' duration. When the tumefaction begins to diminish in one limb, the instrument ought to be applied to the opposite one, so that the quantity of blood may be continually reduced; as to the other revulsives, they are too well known to need further mention.

We must now shortly direct our attention to the causes of the disease,

with a view to its prevention; though we need only allude to one of these, anæmia. The means of cure comprehend tonics, good nourishment, a moderate quantity of fermented liquors, healthy dwellings, warm clothing; in a word, everything tending to the preservation of health; and at the same time we must carefully investigate the causes of the anæmia, and endeavour to remove them; though unfortunately these are often of a nature beyond our control, as cancer, &c. We are therefore compelled to rest satisfied with directing our efforts to the cerebral lesion, and its immediately exciting causes.

TREATMENT OF EPILEPSY BY DIGITALIS.

BY D. J. CORRIGAN, M.D.

FOXGLOVE has been, from time immemorial, a quack remedy in the rural districts of Ireland for epilepsy. Its effects, as administered by the women who profess to cure the disease, have been so violent, that the profession has shrunk from its administration, although success had in many instances followed on its exhibition. The following is the formula which is generally used:—Fresh leaves of digitalis, four ounces: beat into a pulp, and pour over it a pint of boiling beer; infuse for eight hours, and strain with expression. Of this give, every third day, four ounces, with fifteen grains of dried root of polypodium. In another formula the dose is to be repeated every third hour until vomiting is produced. In 1828, Sir P. Crampton informed Dr. Corrigan that he had superintended its exhibition in four cases, and that in three of these it had been successful, but that he did not venture beyond the first dose, its effects were so violent. It caused violent and continuous vomiting like that of sea-sickness, which continued incessantly for twenty-four hours, with irregularity and feebleness of pulse that remained for several weeks after. In the year 1831, Dr. Sharkey, of Cork, in a paper in the *Lancet*, drew the attention of the profession to its good effects in the disease, given according to a similar formula. The effects of a single dose (four ounces) were vomiting, soreness of epigastrium, cold extremities, cramps, and great depression and irregularity of pulse, continuing for several days. The author gave the remedy himself in the same form, and is not surprised that the profession should shrink from employing it. The first dose produced the most violent vomiting, followed by cold sweats, feeble and irregular pulse, and these symptoms again by intense gastritis, accompanied with great sinking of the vital powers, and double vision, which continued for several

days, sufficient to deter him from ever again venturing upon its administration in such a dose.

There are some circumstances connected with the effects of this large dose that may be worth noticing here; it was given at ten o'clock, A.M.: at twelve o'clock the pulse had fallen thirty beats, viz. from eighty-six to fifty-six, and there was slight headache, with very slight nausea: it was not until eight o'clock, P.M., ten hours after the administration of the dose, that the violent symptoms set in. It then occurred to Dr. C. that as it is a remedy possessing a cumulative property, he might succeed in saturating, as it were, the nervous system with its sedative influence, without the risk of inducing those frightful effects which follow on the sudden exhibition of the large dose; and he believes that he can now venture to say that this important point in practical medicine can be gained. After many trials of its preparations, he gives the preference to the infus. digitalis of the Dublin Pharmacopœia, but he cannot too strongly insist on the necessity of the greatest attention being paid to see that the leaves are well prepared, and of the latest gathering. The mode of administration is to begin with $\mathfrak{zj}$. of the infusion every night at bed-time, increasing it after a week to $\mathfrak{ziss}$., and after another week to $\mathfrak{zij}$., beyond which it is rarely necessary to go, and continuing it until sickness of the stomach and dilated pupils are observed, when the dose is to be diminished by $\mathfrak{zss}$. or $\mathfrak{zj}$. until the maximum dose that can be borne without inconvenience is ascertained, at which the administration is to be continued for two or three months. Given in this way, its exhibition is attended with no inconvenience beyond an occasional attack of slight sickness of stomach in the morning, or headache, &c., when the medicine is to be omitted, and a day or two are to be allowed to pass over before resuming its use. With the exception of these symptoms, there is no perceptible effect, beyond slow action of the heart, and the patient during its use is able to follow his ordinary avocations. Two cases are related, but as the paper is to be continued, Dr. Corrigan will probably lay others before the profession. The first is that of a gentleman, æt. 27, who during the previous seven months had suffered from repeated attacks of epilepsy, followed by delirium. He was kept under the influence of the medicine for about five months, when the attacks having gradually become milder and milder, at length ceased altogether. The patient has remained without a return of the disease for four years. In the second case the effects were only watched for about six weeks, but even in this time the attacks had ceased. — *Dublin Hospital Gazette*.

MEDICAL GAZETTE.

FRIDAY, DEC. 19, 1845.

THE Society of Apothecaries have lately published an address to the General Practitioners of England and Wales, on the second report of the joint deputation of their own body and the National Associations.* Some months ago, the Address would have commanded more attention than it appears to have received at the present time; for what with the division which has arisen among the general practitioners themselves,—the opposition of various public bodies to the last Physic and Surgery Bill, and the apparent impossibility of this measure passing without undergoing such changes as to render it almost a new bill,—the profession has become so wearied of the subject, that nothing short of the stimulus of another parliamentary session, and the prospect of speedy legislation, will suffice to rouse their attention. All who watched the progress of the four medical bills, foresaw that not one of them, if passed, would prove satisfactory to the whole profession: divided interests had to be reconciled; each party considered that concessions were absolutely necessary, but unfortunately every one was more ready to require than to make them. Hence, the dilemma in which the Home Minister found himself placed at the close of the last session.

We must do the Apothecaries' Society the justice to say, that they have certainly made very great concessions. They have agreed to surrender the extensive powers which they now possess of controlling medical education and practice in England and

Wales; and to occupy a position which many regard as subordinate to that which they now hold. One of the main objects of the present address is to show that this is a mistaken view of the subject; and that the Society's acceptance of the latest Government arrangement does not place the College of General Practitioners, into which the Society will merge, in an inferior position. Thus, according to the address:—

“It is well known that the proposal for the examination of the general practitioners by a joint Board of Physicians and Surgeons did not originate with the deputation, but that such examination was superadded by the Secretary of State as one of the conditions on which he would consent to recommend the grant of a charter of incorporation to the general practitioners. The Society of Apothecaries had contemplated that the examination of the general practitioner in medicine, surgery, and midwifery, would have rested with the College of General Practitioners, and they are satisfied that the public interests would not have suffered if that arrangement had been adopted; but the Society do not concur with those who think that the examination before the joint Board of Physicians and Surgeons is one which necessarily implies a want of confidence in the examination by the College of General Practitioners, or that the arrangement in this respect is calculated to detract from the dignity or impair the public usefulness of that College. It must be borne in mind, that the physicians and surgeons are each to be subjected to an examination by the joint Medical and Surgical Board, in addition to the examination by their own Colleges. Therefore if the College of General Practitioners is supposed to lose any dignity from the fact of its examination not qualifying for registration, it is a loss which that College suffers in common with the Colleges of Physicians and Surgeons. Admitting, however, for the sake of argument, that all the Colleges do sustain an apparent loss of independence in being rendered incapable of granting a license to practise on their single attestation of the competency of a

* An Address of the Society of Apothecaries, &c. &c. Highley: 1845.

candidate, the Society of Apothecaries cannot think that there is anything in the circumstance of the Legislature thus providing an additional security against the admission of incompetent persons into practice, which either of the Colleges would be justified in regarding as derogatory to its real dignity; and whatever opinion may be entertained on this subject by members of other branches of the profession, the Society of Apothecaries are of opinion, that it would ill become the general practitioners, who, as a class, are struggling for the power of maintaining a high standard of qualification, and guarding themselves against the risk of that standard being depressed, to exhibit any jealousy of an additional test of the qualifications of their candidates, because the direct operation of such an additional test must be to assist in the accomplishment of the very object they profess to have in view.

It may be said, however, that there is a difference between the examination which the general practitioner is required to undergo before the joint Medical and Surgical Board, and the examination to which the physicians and surgeons will be subjected, inasmuch as in the case of the physicians and surgeons the examination by the Medical and Surgical Board will *precede* the examination by his own College, and will be merely preliminary in its character; whereas in the case of the general practitioner the examination by the joint Medical and Surgical Board will *follow* the examination by his own College, and will be the examination, therefore, upon which the right to registration will immediately ensue."

If the General Practitioners, whom the Society profess to represent, are as satisfied with this announcement—*i. e.* that the examination of the candidate by his own College should *precede* that by the Medical and Surgical Board—we really do not perceive that this can fairly be raised into a grievance, or made a ground for overthrowing the measure. Let the profession declare its opinion now that the Address is fairly laid before it, and then we shall

be better able to judge whether this condition be really regarded in the light of a gross indignity, or, as it is alleged, a badge of inferiority.

We have elsewhere expressed our opinion, that it is unwise to multiply examinations; and we confess it is with some regret we find that, in order to soothe differences and maintain among several chartered bodies a controlling power over the profession, there should be no other way than that of requiring candidates to pass double examinations. The Society appear to entertain the opinion that one examination should suffice for registration (22); but they candidly admit that the Minister of the Crown could not be induced to grant a charter of incorporation to the General Practitioners, upon these terms. Whether the Society were too easy in conceding this point, or the minister too obstinate in withholding it, is not the question:—the concession has been made, to the satisfaction of some and the dissatisfaction of others, and "*non nostrum est tantus componere lites.*" There is one point of view, however, in which the Society, by their acceptance of these terms, appear to have been somewhat harshly judged. They were not upon an equal footing with those with whom they had to deal. The Apothecaries' Society derives its powers through an Act of Parliament; and these by another Act may be entirely taken away. While the Legislature therefore could dictate, the Society had but little choice in making concessions when the framer of the new measures had once fixed the limits to which he was prepared to go for the reform of the profession. Had the Society declined to treat with the Government, or insisted upon having stronger powers conferred upon them, there could have been no appeal but to the profession itself; and an active legislator would have found here such abundant ele-

ments of discord as to render any serious opposition to his measure perfectly nugatory.

Of the evils resulting from the present unsettled state of medical legislation, all who are acquainted with the profession must be fully aware. It is a question which it now behoves us to consider, whether the worst anticipated results of a new measure are liable to produce greater mischief than the protraction of the violent discussions which have distracted the profession during the last two years. If the battle is to be fought until every party obtains those concessions which in its own view are necessary to sound medical legislation, the conflict will be endless. In relation to this subject, the Society close their address with some judicious remarks. They state that—

“The Society have too painful an experience of the unmixed evil resulting to the profession and the public from the protracted discussion of the question of medical reform, not to be most anxious to render every assistance in their power in effecting a speedy settlement of that question. If the public (for whose benefit these changes are contemplated) could be made aware of the pernicious influence which the present unsettled state of the medical profession is exercising upon the studies of the pupils and upon the attainments of those who are entering upon practice, and if they knew (as the Society have too much reason to know) that the number of individuals who are emboldened by the present state of things, to enter upon practice without qualification of any kind, is rapidly on the increase, they would, unquestionably, demand either that new arrangements should at once be made, or that the existing medical institutions should be left to discharge the functions assigned to them as efficiently as they are able under their present organisation.”

Certain political changes which have recently taken place may, independently of these disagreements, lead to a postponement *sine die* of the medical

reform question; and if one minister could not satisfy the profession by bringing in four successive bills, it is not probable that his successor will experience less difficulty in acting as a pacificator, if he can even be brought to devote to the subject that attention which has been so unsuccessfully bestowed upon it by Sir James Graham.

Reviews.

On the Analysis of the Blood and Urine in Health and Disease, and on the Treatment of Urinary Diseases. By G. O. REES, M.D., F.R.S., &c. 2d edition, pp. 218. Longman and Co. 1845.

IN his preface to the second edition, the author observes: “I have avoided as much as possible entering into scientific details, as foreign to the purpose of the work, which must not be regarded as an elaborate treatise on the blood and urine in all their relations, but simply as a work on proximate animal analysis.” In carrying out this plan, Dr. Rees has contrived to make the second edition still more useful to the general practitioner than the first. In the latter chemical pathology was the predominant feature; in the volume before us we have, in addition, a very excellent essay on the treatment of urinary diseases. We cannot sufficiently commend the judgment of the author in excluding from the treatise all those iatro-chemical hypotheses of the day, which, while they apparently furnish explanations of pathological changes in the blood and urine, are in reality shadows which tend to obscure the true practical bearings of our knowledge. It has been objected to this treatise by a devotee of the Giessen school, that it gives proximate and neglects ultimate analysis. Not to mention that the preface explains clearly that the author's object was to confine himself to “*proximate animal analysis*,” we hold that it is chiefly to this branch of chemical research that the practice of medicine must turn for any beneficial improvements from chemical science. We should like to know to what patholo-

gical utility, the ultimate analysis of the blood or urine can lead. The proportions of carbon, nitrogen, oxygen and hydrogen in either liquid, may be expressed in neat symbols, with hypothetical equivalents, but how will these aid the diagnosis of albuminuria or diabetes? Dr. Rees has properly contented himself with referring to well-ascertained and undisputed facts, and he has, as far as we can judge from an examination of his book, so studiously avoided involving himself in ephemeral speculations, that we believe, in spite of any advances which may be made, the book in its present form will always retain the character of being a good compendium of the pathological chemistry of two of the most important animal liquids. It has also this excellent recommendation to the general practitioner, that the whole subject is rendered perfectly intelligible. He need not fear being scared by symbols—by the use of + and — signs, or of names which require the constant use of gigantic Greek and Latin Thesauri for their comprehension.

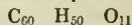
The present edition is considerably enlarged by the addition of new and useful matter; and it is printed in a type which equally adapts it for the student or septuagenarian. After a few directions respecting chemical manipulation, and the apparatus required in animal analysis, the author gives a short account of the physical structure of the blood. Dr. Rees's views on this subject were published at the conclusion of our last volume, in the Gulstonian Lectures delivered by him at the Royal College of Physicians. We then have sections on the analysis of the blood in health and disease; and here the reader will find a clear account of those processes of analysis which are rarely even noticed in works on chemistry. Most chemical writers content themselves with giving the composition of this liquid in 1000 parts, leaving the reader to puzzle his brains in endeavouring to devise methods for separating, and quantitatively estimating, the proportions of fibrin, albumen, hæmatosine and salts.

We think that the *ultimate* might here take a hint from the *proximate* analysts. The proximate analyst, who gives a *bonâ fide* description of his processes, and a statement of the actual quantities determined by analysis, puts

his readers in a position to follow him, and judge of his correctness by repeating his experiments. Not so the modern *ultimate* analyst: he wraps himself up in a sort of esoteric mystery: his results are not to be questioned: how he constructs his equivalents, or obtains such close numerical calculations, he reserves to himself. and any opposition to his views is immediately answered by a shower of *atoms* and *formulæ**.

We do not propose to enter into Dr. Rees's chemical description of the constituents of the blood and urine. The details are so clearly given, that one only moderately versed in chemistry will be able almost without assistance to work for himself. We shall also pass over the sections on urinary deposits, and on the analysis of urinary calculi, with the remark, that the student will here find a very complete account of the methods of determining the nature of these morbid products. That part of the work which will chiefly arrest the attention of the practitioner will be the section on the treatment of urinary diseases. The diagnosis and treatment of the lithic, phosphatic and other deposits, are well described: perhaps some might object to the remarks being brief, yet this will be a recommendation to men who, in the midst of practice, are desirous of finding modern doctrines reduced in

* Let us take one illustration. In a chemical work it is stated that the *probable* (?) formula for Choloidic acid is thus represented:—



The grounds of the probability for this very evenly constructed formula, are not even hinted at, nor do we find what a chemist has a right to expect, the quantity of carbon, hydrogen, and oxygen, obtained as the result of *one or more actual experiments*. According to the equivalents, this formula implies that Choloidic acid is formed of neither more nor less than— 60×6.04 C, 50×1 H, and 11×8.013 O!

Is it intended to be said that carbon, hydrogen, and oxygen, are *always* obtained as water and carbonic acid in these exact proportions? If not, the probable formula is no formula at all; it is a mere invention, only likely to mislead. The details of actual experiments are wanted, and not artificially constructed formulæ like these. What would be thought of a pathologist who sat down and invented for every disease a well-dressed-up series of post-mortem appearances, without informing his readers how many subjects he had examined, or giving them the least idea of the method by which he had arrived at conclusions likely to produce a complete revolution in the science. Yet what would not be tolerated in pathology is allowed in chemistry. A discoverer has only to score down his formulæ boldly, and call upon those who object to them to prove that he is wrong!

description within the smallest compass. Dr. Rees evidently intends this as a sketch, and he has been able to comprise much in a small space by avoiding chemical details, which at present appear to have only a remote hypothetical value. We are induced to extract the following observations on phosphatic deposits, as they indicate a plan of treatment for which many practitioners might not be prepared:—

“As regards the question of phosphatic deposits generally, and the tendency to the alkaline character of the urine, I feel persuaded that in nearly all cases the real disease exists, not in the presence of any peculiarity on the part of the kidney as a secreting organ, but on a tendency to the production of alkaline fluid on the lining membrane of the whole, or a part, of the urinary apparatus. The treatment of these diseases, as founded on this view of their pathology, has led to such favourable results, that I am daily becoming more and more persuaded of the truth of the position. It has been far too much the fashion to regard the abnormal qualities of the urine as indicative of some general state of the system showing itself through the medium of the kidney, whereas it almost admits of demonstration that the kidney frequently secretes urine possessing the qualities of health, with its acid reaction and other normal qualities, while it passes from the urethra foetid and ammoniacal. I do not here allude to cases of old bladder disease, or on that condition of the viscus observed in cases of spinal lesion, but to cases admitting of cure, and not necessarily characterised by any symptoms of cystitis. A young or middle-aged person becomes the subject of irritation during the passage of urine, in connection with gastric symptoms, and aching irregular pains in the course of the ureters. His appearance is that which we are apt to describe as indicative of a general want of tone, and on examining his urine we find it either ammoniacal, neutral, or faintly acid, with a deposit of mucus and phosphates. If it be supposed that this depends on mal-secretion on the part of the kidney, knowing as we do that mineral acids will increase the acidity of healthy urine, nothing can be more reasonable than to supply these remedies for the cure of the patient; but if, on the contrary, no such mal-secretion is going on, and the urine only becomes alkaline after leaving the kidneys, and during its course through the passages, nothing can be required from the mineral acids. That, however, which remains to be done, in accordance with the pathological view I have advanced, is to act

upon the urine in such a manner as to render it less irritating to the lining mucous membranes, and thus prevent the secretion of that alkaline flux which has been pouring out in quantity. It appeared to me that the use of alkaline remedies might be of advantage in these cases of alkaline urine, and, moreover, that if the alkali were administered in small doses so as only partially to neutralise the acid state of urine as secreted by the kidney, we might relieve the irritation of the mucous membranes, stop the excretion of alkaline matter, and have an acid urine excreted, the natural acidity having been only partially destroyed by our remedy. It may appear somewhat unaccountable to those who merely look to the chemical view of the matter that any one should expect to render alkaline urine, acid by the administration of alkalies, but such was the treatment I adopted, and the result fully corroborated the correctness of the theory which suggested it as a crucial test.”

Perhaps there is a greater difference of opinion at present existing among pathological chemists respecting the producing causes of the oxalate of lime deposits, than on most other morbid conditions of the urinary secretion. Some consider that it is connected with the existence of an undue secretion of urica, others with the abuse of sugar; while Dr. Aldridge, of Dublin, has contrived, by some experiments, to render it probable that the oxalic deposit is formed from lithic acid. In reference to the numerous theories which have been devised to explain this condition, Dr. Rees makes the following judicious observations:—

“We find that chemistry is at no loss, however, to devise theories for the transformation of several organic principles into oxalic acid, and whether it be derived from sugar, urica, or lithic acid, we can make our formulæ by abstracting or adding oxygen, as the case may require. All this, however, must be looked upon as a display of ingenuity on the part of the chemist, and we should wait till accurate and long-continued observation, conducted on the urine of patients, helps us to better evidence on which to found a conclusion. Unfortunately, the addition or subtraction of oxygen necessary to some of these theories has not been proved or even rendered probable, and no good reason has been given, in most cases, for transforming one proximate element rather than another for the formation of a diseased product. It is often the case that more than one proximate element would answer the purpose required, owing to their

similarity of composition; and the profusion with which chemists are in the habit of taking away or adding oxygen by as many atoms as it may please them, still further lessens any difficulty that might at first appear to stand in the way of effecting an explanation."

The author then gives some rules for the treatment of those cases, for which we must refer the reader to the work itself.

Dr. Rees, it is well known, has paid much attention to the subject of albuminuria, and has rendered great assistance to Dr. Bright in his pathological researches on degeneration of the kidneys. Much misapprehension has existed on the aid afforded to our means of diagnosis by the presence of albumen in the urine. It was at one time rather hastily assumed to indicate invariably the existence of extensive disease of the kidney, but it may be simply connected with extreme degeneration of the blood, and slight disease of the kidney.

"The albuminous urine appears, therefore, in such cases, to be connected rather with a degeneration of the fluids than a disease of the kidney, since that organ is almost certainly in merely a congested condition. The researches in morbid anatomy which have been pursued in connection with this subject, seem clearly to point to the kidney as the first link in the chain of causation so far as the solids are concerned; and the lesions of heart and liver so often remarked in cases of albuminuria, hold comparatively an unimportant place in the pathology of the affection. The changes effected in the kidney during the early stage, have been noticed principally in acute cases, rapidly fatal from the supervention of some disease complicating an important organ. In such patients the kidney has shown extreme congestion, the cortical portion especially being distended, and appearing as though the cellular structure of the organ had become filled with extravasated blood, giving it a dark chocolate-brown colour. The next change observed in the kidney in the course of this disease may be regarded as that indicative of the commencement of grave mischief, and threatening permanent alteration of the structure of the organ. The cortical portion now becomes impregnated with an albuminous deposit, encroaching gradually at parts upon the tubular structure. At this stage the organ frequently varies from its natural size, becoming larger and softer, or smaller and harder; its colour also changes to a more yellow tinge, and white markings and dots appear on its surface, giving an appear-

ance of mottling, which at once strikes the eye on tearing off the investing membrane. In the latter stages of degeneration the kidneys become one mass of disease; the tubular as well as cortical portion has become compressed by the morbid deposit; absorption of their natural structure seems to have taken place, and they are generally found compressed and hardened. When cut through, the natural structure seems to have become obliterated; and the whole organs appear made up of a white albuminous matter, representing imperfectly, in some places, an approach to tubular arrangement. The kidney is now generally observed to present an irregular surface, the protuberances varying in size from mere papillary elevations to large rounded prominences, which give a lobulated form to the organ. When the investing membrane is torn off, we see the kidney of a light colour, with occasional dark spots or ecchymoses in streaks variegating its surface."

We have extracted this paragraph, as it gives a very concise account of the gradual progress of degeneration of the kidney. It is proper to observe that no relation has yet been discovered to exist between these stages of degeneration and the proportion of albumen found in the urine. According to the author, it is generally most abundant in the early stages, and is sometimes scanty in very advanced cases. There is one caution recommended to those who are engaged in testing the urine for albumen; namely, not to be content with a single examination, as it has been observed free from albumen on some days even in confirmed cases.

The volume is concluded with some observations on chylous urine and diabetes, with an appendix on analysis. From the remarks already made, we need hardly say that we strongly recommend Dr. Rees's unpretending treatise as a most useful companion to the pathological chemist. It has the advantage, now-a-days somewhat rare, of being equally instructive to the student and practitioner; and we know of no better manual on the chemical analysis of the blood and urine to place in the hands of those who are joining themselves as pupils to the newly founded schools of practical chemistry in this metropolis.

MEDICAL APPOINTMENT.

DR. J. H. BENNETT has been appointed Physician-Accoucheur to the Western General Dispensary.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

December 9th, 1845.

DR. CHAMBERS, PRESIDENT.

An Account of two Vascular Tumors developed in the substance of Bone. By JOSEPH TOYNBEE, F.R.S. Fellow of the Royal College of Surgeons, and Senior Surgeon to the St. George's and St. James's General Dispensary.

THE author commenced by stating his belief that the disease he was about to describe was of very rare occurrence, as he had nowhere been able to find a description of it, nor had he been able to discover, in the museums he had examined for the purpose, any specimen at all analogous to it. The subject of the disease was a youth, aged 19, who died of consumption, and the tumors were situated in the centres of ossification of the two parietal bones. When the integuments and periosteum were removed from these points, a roughness was observed, as well as a slight projection of the bone above the surrounding surface. On closer inspection, the bone, at the parts referred to, was found to be hollowed out and cancellated, and to contain an intricate network of ramifying bloodvessels. These projecting surfaces measured between seven and eight inches in circumference.

The author gives a minute description of the canals, sulci, and foramina of these projecting portions of bone, and he concludes that they are the Haversian canals and cells of the bone very much enlarged, and that they contained diseased bloodvessels, which formed vascular tumors of a very intricate character.

The author draws attention to a certain analogy between these diseased portions and the centres of ossification of the parietal bones in very early periods of their development: it appears to him highly probable that the disease was congenital, and that the only difference between it and the numerous congenital vascular tumors called *nævi* is, that in the case before the Society the seat of the disease is the substance of the bone.

The author concludes by calling attention to the causes of congenital vascular tumors, and he states his grounds for placing them under the class of diseases dependent upon an arrest of development.

Case of Punctured Wound, and Ligature of the posterior Tibial Artery in the upper third of its course. By JAMES MONCRIEFF ARNOTT, F.R.S., Surgeon to the Middlesex Hospital.

The author remarks, that when an arterial trunk or main branch is wounded, the rule of

practice is, that the vessel should be tied at the seat of injury, or, as it may be more truly expressed, where it can, it ought to be tied at the seat of injury, as the most certain means of arresting hæmorrhage, the qualification being rendered necessary by the fact, that it is sometimes impossible, or is deemed inexpedient, to put the principle into practice. The circumstance which chiefly operates in creating an exception to the rule, is the situation of the wounded artery, and it is this, no doubt, which has influenced those who, in punctured or gunshot wounds of the posterior tibial artery high up, have recommended other means of meeting the difficulties and dangers of the case.

The author adduces a case from the practice of a late celebrated surgeon, where, on account of a punctured wound of the posterior tibial high up, the femoral artery was tied, but the bleeding recurred, and the limb was amputated, the patient not surviving. In future cases of the kind immediate amputation was advised. He mentions another case of wound of this artery by a ball, in which M. Dupuytren tied the femoral artery, and the patient recovered. Mons. D. in consequence, recommended that this practice should be followed in similar circumstances. On the other hand, Mr. Guthrie severely criticises this eminent French surgeon. He relates two cases of gunshot wound of the leg attended with hæmorrhage, in both of which the femoral artery was tied, but the bleeding recurred, leading to amputation and death. In another instance, Mr. Guthrie cut boldly into the muscles of the calf, and tied the peroneal artery, which had been wounded, thereby saving the limb, and he recommended that a similar proceeding should be adopted when the posterior tibial is wounded.

Besides this difference of opinion as to the treatment to be pursued in wounds of the posterior tibial, another exists as to the mode of reaching it high up in cases of aneurism, or secondary hæmorrhage lower down. As from the three cases which have been cited, it is evident that ligature of the femoral artery is an uncertain means of arresting hæmorrhage from the posterior tibial, and as Mr. Guthrie's proposal of cutting directly through the muscles of the calf has not hitherto been put into practice, the author thinks the following case, in which it was, possess some interest:—

A robust young man was admitted into the Middlesex Hospital on January 1st, 1845, with a punctured wound from a joiner's chisel in the calf, at the junction of the upper with the middle third of the leg, and a little to the inner side of the mesial line. Arterial and venous blood flowed in quantity. From the situation, depth, and

direction of the wound, as ascertained by a probe, it was evident that the posterior tibial was probably wounded. Mr. Arnott determined to cut down upon it at once, in order to secure both ends. For this purpose, taking the punctured wound as a centre, he made an incision through the skin and muscles of the calf, to the extent of six and a half inches; the deep fascia being thereby exposed, the opening in it made by the chisel was enlarged to the extent of two inches. After considerable difficulty from the bleeding, it was ascertained, that besides the wound in the posterior tibial, both *venæ comites* were divided. On account of the troublesome character of the bleeding from these veins, and the difficulty created in discovering the artery, one of them had a ligature placed on both ends, whilst the lower end of the other was subjected to pressure. Two ligatures were then placed on the artery, one above the other, below the puncture; it was not till the latter was tied that the hæmorrhage ceased. But little febrile disturbance followed the operation; the lower ligature on the artery came away on the eighth day, the upper on the ninth. During the night of the eleventh, some bleeding took place from the lower angle of the wound, which was not arrested by compression of the femoral artery, but which was easily checked by displacing some coagula from the wound, and making pressure at the lower part of it by means of a small compress of lint, which was left in the wound. This was removed in three days, and the case proceeded subsequently uninterruptedly to a favourable termination. The wound cicatrized in less than two months, and the patient recovered with a perfectly efficient limb.

The incisions in this case were wholly within the limits of the calf, the external terminating seven inches above the ankle. The pain and spasm of the divided muscles from pressure in separating the sides of the wound during the operation were considerable, but the venous hæmorrhage occasioned most delay.

Taking all circumstances into consideration, the author states, that it must be allowed this mode of reaching the posterior tibial is an operation severe to the patient, and troublesome to the surgeon; but that, on the other hand, when it is considered that the object of it is to save the limb and life; that by adopting it we take the most likely method of attaining this end, by putting in practice the most certain means of arresting arterial hæmorrhage; that from the evidence of the present case, no danger arises from the mere size of the wound in the calf, and no permanent detriment from the extensive division of its muscles, he thinks that it must be conceded, until experience shows

the contrary, that this is the proceeding which ought to be adopted in wounds of the posterior tibial artery high up.

He likewise is of opinion that this will be found to be an easier mode of reaching the vessel when requiring ligature high up for aneurism lower down, than that by incision on the inner edge of the tibia between this and the gastrocnemius muscle, whereby the soleus alone is divided. He dreads, in this mode, the difficulty, from pain and spasm, in pulling these muscles aside, to get at the vessel.

Mr. B. B. COOPER said that the author of the paper, in his opinion, had not taken a sufficiently extended view of the subject. In this case he had cut down upon, and tied the artery, below and above the part at which it was wounded—a good practice when the operation could be properly done. Cases, however, might occur, in which it would be more desirable to tie the femoral artery to arrest hæmorrhage from a wound of the posterior tibial artery. The mode of proceeding would depend on the time at which the surgeon was first called to the patient; for if secondary hæmorrhage had occurred, and there had been much inflammation and interstitial deposition, and coagula of blood, in parts surrounding the wounded vessel, it would be desirable to tie the femoral artery; for even if the wounded vessel could be secured successfully, secondary hæmorrhage would be likely to re-occur. The author of the paper has referred to cases in which secondary hæmorrhage had taken place after ligature of the artery, at a point above the wound; this had occurred also in cases where the artery was secured at the part at which it was wounded. The cases brought forward by the author were not sufficient to found a general rule on, and the surgeon must in every case be guided in his proceedings by the circumstances presented to him. In cases of wounds of the calf and the leg, in which there was sufficient hæmorrhage to warrant the belief that the posterior tibial artery was wounded, the surgeon, being called early, should separate the soleus from its attachment to the tibia, by which means the artery would be readily found and secured. In this proceeding it was most desirable to cut through the deep fascia, as it rendered the operation more difficult. Where the muscles were divided, as advised by Mr. Arnott, he (Mr. Cooper) was fearful of union not taking place between the divided portions by muscular fibre. In one case in which he had resorted to this proceeding, he was not able to secure the vessel at the wounded part, from the difficulty of finding it. A ligature was applied above the wound, but hæmorrhage continued, and

it was found necessary to enlarge the wound and place the ligature upon the vessel, three inches below the seat of injury. Mr. Travers had some years since performed the same operation. He preferred this plan to the mode advocated by Mr. Guthrie, of dividing the muscles of the calf—an operation which he (Mr. Cooper) had frequently performed on the dead body, though not on the living, as it was not only more difficult, but left the patient in a worse state than did the other.

Mr. ARNOTT began by remarking, that the object of his communication was to direct attention to the treatment of wounded posterior tibial artery, high up, punctured or gunshot. That wounds of this artery, under the calf, were not of frequent occurrence, was evidenced by Mr. Cooper having seen but two cases. He himself had occasion to tie it low down, but this was the first instance which he had had of a wound of it high up. That the personal experience of an individual would not enable him to form a sound opinion as to the best mode of treatment, which could only be done by taking a general and extended view of the subject. He was aware that ligature of the femoral artery would occasionally stop hæmorrhage from the posterior tibial, especially where there was no wound of the integuments, but M. Dupuytren had made more of it than it would bear. He (Mr. Arnott) knew and had adduced three cases, in which ligature of the femoral had failed in stopping hæmorrhage from wounds of the leg, in two of which the posterior, and in one, the anterior had been wounded, thus leading to amputation and death. The question, therefore, was not one of limb merely, but of life, and it was desirable, though the cases were rare, that our opinion as to the treatment should be made up, as prompt action was necessary in these cases. The mode of getting at the artery, by cutting on the inner edge of the tibia, was acknowledged, by those who had witnessed it, as attended with considerable difficulty, as would be found on referring to Mr. Harrison's book on the arteries, who had alluded to four cases. He also (Mr. Arnott) had been in the habit of showing both modes of reaching the artery on the dead body, as possibly being required, in cases of wounds, but he was of opinion that Mr. Guthrie's plan, of cutting directly through the muscle of the calf, was the easiest and best mode. He had found no difficulty in the present case.

Mr. CÆSAR HAWKINS said that it was not always easy to determine whence the hæmorrhage proceeded in cases of punctured wounds, on account of our ignorance of the course the wound had taken. In such cases it was desirable to secure the artery above

the wound. He related the case of a man with compound fracture of the leg, in which there was repeated hæmorrhage—the femoral artery was secured, and the patient did well; in another case, a butcher's boy was wounded on the outer side of the thigh, the knife passing in a direction forwards. He could not tell whether the femoral or profunda was wounded; he placed a ligature on the common femoral, and the patient recovered. The paper was deficient in another point—viz., the reference to closure of a small puncture wound, and conversion of the injury into a false aneurism, which could be remedied by ligature of the arteries above the wound. He had seen several such cases; in one, the patient was a butcher, whose ulnar artery was wounded; the external wound healed, and a pulsating tumor formed, of four inches in length and three in breadth. Pressure was tried, but failed in effecting a cure. The humoral was eventually tied, and the patient made a good recovery.

Mr. TAMPLIN said that two cases of false aneurism, produced by a puncture of the artery, had fallen under his observation. The one was a puncture of the posterior tibial artery, and occurred in a child about three months old, in dividing the tendo-Achilles. The other was a puncture of the internal plantar artery, and was occasioned by dividing the plantar fascia, in a boy about twelve years of age. In both instances the punctures healed by the first intention. In the case first mentioned, a swelling the size of a nut was noticed by the mother in the situation of the puncture a fortnight after the operation: it was found to pulsate. Pressure was applied above and upon the swelling, with the view of disinterrupting the circulation, and was continued for about fourteen days, perhaps more; the swelling, however, increased, and the skin began to give way, so that there was no alternative left but to take up the artery. He therefore made a free longitudinal incision directly through the tumor, and another transversely, as nearly as possible over the point of puncture: the coagulum was removed, and by means of a needle and ligature the artery was secured. No hæmorrhage or bad consequences followed; the child did perfectly well. In the case in which the internal plantar artery was punctured, nothing was noticed for a month or more after the operation. The boy had been walking about, upon one occasion, his mother stated, when there was a swelling in the sole of the foot. Upon examining it, he (Mr. Tamplin) found an enlargement, the size of a walnut, situated beneath the point of puncture; no pulsation could be detected; he therefore regarded it as an abscess, and laid it open, when, instead of matter, clots of blood escaped, shewing at once the nature

of the swelling. He cleared out the sac, and carefully plugged the opening with pledgets of lint, at the same time applying as much pressure as could be borne. The boy was sent to bed, the leg raised, and every means used to prevent a return of the bleeding. On the third day, however, hæmorrhage took place. Mr. Lawrence was called in consultation, and coincided in the propriety of taking the artery up at the point of puncture. He made a longitudinal incision directly over the spot, extending very nearly from the heel to the ball of the great toe; then another transversely, over the point of puncture. The sole of the foot was full of matter, shreds of cellular tissue, and the products of inflammation: upon cleaning this out, the artery was seen to bleed freely. In this instance he also passed a needle and ligature beneath the artery, and secured it; the hæmorrhage was at once, and completely, controlled, and not a bad symptom followed. So that, as far as his experience went, he certainly thought it advisable to secure the artery at the point of puncture. He also thought, that if the needle and ligature had been used in Mr. Arnott's case, that troublesome hæmorrhage from the veins would have been altogether prevented, and the operation much simplified.

With regard to the allegation that wounds of muscle did not unite, he would only say, that in this case the limb united kindly, and the man recovered, with a limb as efficient as the other. His conviction was, that in injury of these vessels, ligature at the part injured was most desirable. Now he (Mr. Arnott) would not confine the practice to cases of recent occurrence; he would extend it to days, and even weeks, after the injury. The objection, that arteries ought not to be tied in parts which were inflamed, was considerably magnified.

In Mr. Guthrie's case, the man was wounded at the battle of Waterloo on the 1st of June; on the 2nd of July it was proposed by the surgeons to amputate the limb, when Mr. Guthrie cut down throw the calf, tinged as it was with blood and the products of inflammation, and though he could not discover the peroneal artery, he carried a needle under a mass of softened tissue and included it, yet the ligature held, and the bleeding did not recur. Other cases showed the same thing. A man was received into the Middlesex Hospital, whose temporal artery had been opened some days previously, and Mr. Arnott tied the vessel in the wound, and the ligature held. Another patient was admitted with wound of the ulnar, several days after the injury; the bleeding did not cease on tying the upper end, the lower was tied in the wound, yet it held. Only the other day, where a branch

of the temporal gave way in a granulating sore, he made the house-surgeon put a ligature on it in the sore; the ligature held, and bleeding did not recur. A boy was admitted into the Glasgow Infirmary with a severe burn on the lower part of the belly and groin; after the separation of the slough, the common femoral artery gave way, and the external iliac was tied to stop the hæmorrhage, which it did for a few days: on its recurrence, pressure below was found to arrest it, and a ligature was placed two inches under the opening, but, on removing the finger from the latter, the bleeding still continued, when a ligature was placed on the vessel only half an inch below the ulcerated aperture in the vessel, and yet the ligature held, and separated favourably at the end of twelve or thirteen days. If stumps be examined, it will be found that the friable condition of the vessels does not extend beyond half an inch or an inch. The danger, too, of opening large collections of blood, had been much exaggerated. It was not often that we had occasion to open collections of blood under the scalp, but when they excited inflammation it was occasionally necessary; he had freely opened one in these circumstances which covered one side of the head, and recovery took place without any bad consequence. A man with an old hæmatocèle, the size of a cocoa-nut, was received into the Middlesex Hospital; he (Mr. Arnott) incised it extensively, and the inflammation and suppuration which ensued did not injure the adjoining parts. When these collections of blood were connected with a wounded artery, the inflammation excited was in the cellular tissue of the part, not in the coats of the vessel. John Bell, in his case of gluteal aneurism, occasioned by a man sitting down on a pair of scissors six weeks previously, opened a most extensive collection of blood; the wound took seven months to heal, yet the ligature held, and the patient's life was saved. He (Mr. Arnott) was satisfied that in wounds of the posterior tibial, ligature of the vessel at the seat of injury was the most advisable and the safest practice.

Mr. COOPER remarked, that Mr. Arnott had mistaken him if he supposed that he should object to place a ligature on an artery because it was inflamed; on the contrary, this was a desirable condition of the vessel, as the exciting of inflammation was the object of the surgeon after such an operation. He was fearful, however, of making an incision through the surrounding parts, as sloughing might be thereby produced. His real fear regarding the artery was, that it might have lost its nutrition by the change which had taken place in the surrounding cellular tissue, and would be therefore unable to bear the inflammation necessary for its in-

closure. With regard to Dr. Buchanan's case, he thought it was clear that the vessel first wounded had not been secured. A ligature was placed first on the external iliac, then on the femoral below the profunda; but the bleeding was not arrested by either proceeding; the hæmorrhage no doubt proceeded from the epigastric, which should have been secured in the first instance. The case from John Bell bore no analogy to that under discussion.

Mr. ARNOTT must do justice to Dr. Buchanan. When the first ligature was placed on the femoral, below the ulcerated opening in the common femoral, it was placed below the orifice of the profunda, and did not stop the hæmorrhage, which was recurrent and came up through the profunda. The second ligature was placed above the profunda, and did stop it.

In reply to Mr. Hawkins, he said, his observations were directed to wounds of the posterior tibial, punctured or gun-shot. The absence of a wound in the skin certainly made some difference, but even here the ligature of the vessel above would not always succeed, nor was it free from danger. A man was pinched in the armpit, a pulsating swelling formed, the subclavian was tied above the clavicle, hæmorrhage took place at the seat of ligature, and the patient died of this secondary hæmorrhage. On examination, there was no wound of the axillary artery. Surely it would have been better, in this case, to have opened the swelling, so as to have ascertained where the bleeding came from.

Mr. O. CLAYTON mentioned a case in which the external iliac had been ligatured; and it was found, after death, that only a superficial branch of the common femoral had been wounded, whence the hæmorrhage proceeded.

At the conclusion of the meeting the secretary called the attention of the Society to a form of speculum which Mr. Fergusson, of King's College Hospital, had sent for the inspection of the fellows. In his opinion it possesses sundry advantages deserving of notice. The most conspicuous of these he shortly enumerates.

1. There is a reflecting surface within, more brilliant than he has ever seen on any other instrument of the kind.

2. This surface cannot be tarnished or affected in any way, by the urine, discharges, lotions, acids, or caustics.

3. The instrument is cheaper than any other known of, excepting the common pewter one, which has many of the objections alluded to.

The tube is composed of glass, coated on the outside with silver leaf and varnish, then with cotton cloth, to obviate danger from the

breaking of the glass; and lastly with caoutchouc, to give a smooth surface externally.

The next meeting of the Society will be held on Tuesday, Jan. 13th, 1846.

Correspondence.

ON THE PATHOLOGY OF BRIGHT'S DISEASE OF THE KIDNEY.

SIR,—I have just read with considerable interest an abstract of Dr. George Johnson's *Researches on the Minute Anatomy and Pathology of Bright's Disease of the Kidney*, and an account of the discussion which his paper elicited at the first meeting for this season of the Royal Medical and Chirurgical Society. As this is a subject to which my attention has been more or less directed during the last four years, I may, perhaps, be allowed to make a few remarks on the facts and opinions thus submitted to the profession.

Before, however, stating the considerations which induce me to object to certain of Dr. Johnson's conclusions, let me beg to disclaim all intention of questioning the perfect accuracy of his microscopical observations; the concurrent testimony of so many justly eminent and experienced observers will naturally tend to prevent any scepticism on this point. It is solely to the pathological reasoning based upon those facts that I now venture to demur. And highly valuable as they evidently are, in elucidating the morbid anatomy of certain forms of the disease, I must nevertheless confess my inability to perceive in them any adequate reasons for changing my opinion that the malady is, in its origin, essentially connected with, and dependent upon, a disorder of the circulation in the affected organ.

In the first place, as regards the production of the most characteristic symptom of the disease, namely, albuminuria, it would appear that Dr. Johnson's views are substantially identical with my own, as briefly expressed in the following rule:—"The presence of albumen in the urine is produced by, and its proportional quantity is in a direct ratio to the degree of, congestion of the capillaries of the kidney, from whatsoever cause that congestion may arise."* Now, since the publication of this law, I have succeeded in producing that symptom in the lower animals both by artificially increasing the flow of blood through the renal artery—of which experiment I have now by me the notes of twelve successful cases,—and by obstructing the return of blood through the renal vein. I have also

* An Inquiry into the Pathology of Granular Disease of the Kidney, 1842, p. 64.

unexpectedly found the urine highly albuminous in two rabbits which had been worried and killed by some stronger ones, and have little doubt that the same circumstance may be noticed in animals hunted to death. So that it may, I think, be regarded as a demonstrated principle, that the only condition required for the production of this effect is an undue or unnatural compression of the blood contained in the smaller vessels of the kidney. It follows, therefore, that either this principle must be disproved by shewing the incorrectness of the experiments on which it rests, or it must be admitted that there is no constant or necessary connection between the presence of albumen in the urine and the deposit of fat in the epithelium cells of the tubuli uriniferi. It is consequently evident, that if the latter inference be adopted, cases presenting the symptoms ordinarily considered as pathognomonic of Bright's disease of the kidney may and do occur without the preexistence of the peculiar morbid condition discovered and described by Dr. Johnson. And since the predisposing and exciting causes of this disease have an undeniable tendency to induce renal congestion; since that congestion has been experimentally proved to be capable of producing the most characteristic symptom, albuminuria, and since it is allowed by Dr. Johnson himself in his last stage of the complaint (*when alone the affection is said to manifest its existence by peculiar symptoms*), may we not go a step further, and conclude that the pathological condition thus universally admitted to be the cause of the immediate effects of the disease, is surely something like the disease itself?

Much of the confusion now surrounding this subject seems to me to have arisen from the following circumstance: that since the publication of his discovery by Dr. Bright, too much importance has been attached to albuminuria as a symptom invariably diagnostic of certain peculiar structural changes in the kidney; whereas, taken *per se*, this condition of the urine indicates nothing more than the existence at the time, of some irregularity in, or obstruction to, the circulation through that gland. Hence before pathologists can arrange or discuss in a satisfactory manner the numerous and important questions connected with this disease, they must distinguish more closely and carefully than has yet been done between ordinary acute and chronic nephritis, and those peculiar forms of the latter disease in which the organ presents the morbid appearances so ably described by Dr. Bright, and so justly associated with his name. It is, I presume, to the minute anatomy of well-marked specimens of the latter class of cases, that Dr.

Johnson's attention has been chiefly directed; and the question which here presents itself for examination is, how far the fatty deposit described by him is to be regarded as a *cause*, or as an *effect*, of the concomitant disorder of the circulation.

Now the evidence bearing upon this point, though perhaps not sufficiently clear to warrant, in the present state of the investigation, any positive conclusion, does, so far as I can judge, render the latter quite as probable as the former view of the case. For, 1, Dr. Johnson's doctrine assumes the fatty deposit to occur only in a few of the tubules, or at any rate, to proceed more rapidly in some than in others; whereas, from the constitutional origin of the malady, it might have been expected to progress at a nearly equal rate in all.

2. Even were this difficulty removed, I am by no means convinced that the slow and gradual obliteration of the adjacent blood-vessels by the enlargement of the tubules would necessarily occasion so much disorder of the part as to induce albuminuria. For it requires either a considerable amount of venous obstruction, or a *great and sudden* determination of blood, to induce this symptom in any marked degree. In support of this opinion I could relate many experiments in which, though the determination of blood to the kidney was very considerable, as shewn by its increased weight when compared with that of the other healthy organ, I have nevertheless failed to detect albumen in the urine. And though after tying the renal vein, this effect has been invariably present, yet we must not lose sight of the immense difference between a sudden and complete obstruction of this, the sole discharging blood-vessel of the kidney, and a gradual interference with the circulation through some of the minute, freely-anastomosing venous radicles.

3. From the peculiar situation of the Malpighian tuft, viz. at the extremity of each tubule, and from observing the great force which the column of urine is capable of exercising against any obstacle in the ureter, one would naturally expect that the fluid constantly filtering through the capillary tuft at one end of the tube would carry before it the slight impediment constituted by the moveable comparatively unresisting layer of epithelium cells. If the vis a tergo of the urinary streams be sufficient, as we know it is, to cause the prodigious distension of the pelvis of the kidney occasionally met with as the consequence of obstructive disease of the ureter, the same force would surely suffice to expel the loosely-attached cells situated in the lower part of the tubule, and if so they ought to be detected in large quantities in the urine. And their non-appearance there is certainly an argument in

avour of the supposition that *their deposit in the tubules takes place at a period subsequent to the cessation of the circulation through the Malpighian tuft*. And who, among pathologists, can venture to affirm positively, that fatty degeneration may not be one among the secondary effects of obstructed circulation?

With respect to the treatment of this complaint, it must, I conceive, in the genuine Bright's disease, be essentially of a palliative character. And with the exception of his interdiction of fat as an article of food, Dr. Johnson's therapeutic indications do not substantially differ from the principle generally acted upon, viz. to maintain the patient's general strength, at the same time that every care is taken to prevent and remove any renal congestion.

I have in the foregoing remarks, from a fear of extending this communication to an inconvenient length, perhaps been somewhat concise and abrupt in my observations on Dr. Johnson's views; but trusting that they contain nothing inconsistent with the highest respect for the industry and ability displayed by him in the prosecution of his interesting researches*,—I remain, sir,

Yours obediently,

GEORGE ROBINSON, M.D.

Newcastle-on-Tyne,
Dec. 4, 1845.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Dec. 6.†

BIRTHS.		DEATHS.	Aver. of 5 yrs.	
Males...	648	Males...	478	491
Females...	644	Females...	484	472
1292		962		963

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—*Registrars' Districts*, 129.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	129
NORTH—St. Marylebone; St. Pancras; Islington; Hackney	173
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; and the City of London	177
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar	215
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich (Pop. 479,469)	268
Total	962

* Some correspondents might take a profitable hint from the mild and temperate way in which Dr. Robinson has stated his views in opposition to those of a professional brother.—*Ed. Gaz.*

† The regular Report, for the week ending Dec. 13, has not reached us.—*Ed.*

ROYAL COLLEGE OF SURGEONS.

Gentlemen admitted Members.

FRIDAY, Nov. 28.—E. C. Joseph.—F. Howard.—J. H. Williams.—W. Cadge.—A. Burleigh.—E. Minshall.—D. Trotter.—G. D. Nelson.

FRIDAY, Dec. 5.—W. D. Sherwood.—S. Hunt.—C. W. Hind.—J. Jenkins.—C. A. Adey.—B. A. Harling.—J. R. Pretty.—D. Carter.—E. W. A. Day.—J. B. Hicks.—J. C. Collins.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

THURSDAY, Nov. 27.—Alfred Roberts, Alton, Hants.—Marshall Hall Higginbottom, Nottingham.

THURSDAY, Dec. 4.—Thomas Peck, Sharnbrook, Bedfordshire.—Daniel Hooper, Hayes, Sussex.—Henry John Girdlestone Young, Wells, Norfolk.

THURSDAY, Dec. 11.—Edw. Bates, Cowbridge, Glamorganshire.—Samuel Turrell, Hampton Court.

BOOKS RECEIVED FOR REVIEW.

Caustatt and Eisenmann. Jahresbericht für die Gesammten medicin, 1843-4.—Saint Louis Medical and Surgical Journal, Oct. 1845.—Murphy's Lectures on Natural and Difficult Parturition.—Port Phillip Gazette (South Australia), January, February, and March, 1845.—Sands Cox, On Amputation of the Thigh at the Hip-joint.—L. Parker's Modern Treatment of Syphilitic Disease.—Explanations or Sequel to Vesiges of the Natural History of Creation.—Dr. J. B. Brown on Scarlatina.

NOTICES TO CORRESPONDENTS.

Dr. Todd's request shall be attended to.

Mr. J. R. Pretty's communication shall have early insertion. The Wood Engraving may be sent in a week or ten days.

The second part of Mr. F. Roberts's paper shall appear as early as our arrangements with other correspondents will admit.

Mr. F. W. G. Calder.—The type has been broken up.

Mr. Joseph Bell, Glasgow.—An answer will be sent.

We are obliged to Dr. H. McCormac, of Belfast, for his communication.

Mr. F. Robinson.—We regret that we cannot insert the paper. It is left with the printers.

Received.—Dr. Lever.—Professor Syme.—Mr. J. R. Pretty.—Justitia.—Dr. Todd.—Mr. J. Goodman.—A Regular Reader.—Mr. Erichsen.—Mr. H. Thomson, Tillicoultry.—Dr. Radford.—Mr. Solly.—Mr. T. W. King.—Dr. Wardell.—Dr. W. A. Greenhill.—A Member of the Sydenham Society.—Dr. Hitch.—Dr. T. Mayo.

Lectures.

CLINICAL LECTURES

Delivered at University College Hospital,

BY DR. C. J. B. WILLIAMS, F.R.S. &c.

[Taken in Short-Hand by our own Reporter, and revised by the Professor himself.]

LECTURE XI.—July 24, 1845.

Treatment of rheumatism with colchicum.

—*Mode of operation.*—*Case of tabes mesenterica, with extensive ulceration of the intestines, ending in perforation.*—*History.*—*Remarks: on obscure symptoms: Torpor of the bowels and quiet pulse*—*Physical signs: Vocal vibration in the abdomen.*—*Diagnosis.*—*Post-mortem examination.*—*Microscopic appearances of the tubercles in different parts.*—*Remarks:—On the absence of prominent symptoms—On the vocal vibration in the abdomen—On the diagnosis of the disease in the lungs—On the cause of rapidity and latency of the disease—On the pathology of tubercle, as a product of mal-nutrition—On the cause and treatment of symptoms in tuberculous diseases.*—*Concluding address.*

I was going to devote this lecture to some observations on rheumatism, but a fatal case has occurred, which requires our chief attention, so that we shall not have time to notice the cases of rheumatism on this occasion. However, as I gave a clinical lecture on the subject in the winter session, the omission is of less consequence. You have seen many cases which very well illustrate the nature of the disease, and the character of the treatment which I recommend. During the last winter, which was particularly severe, you saw the great success of that treatment. From three to six days was sufficient to remove all active symptoms—all the fever, pain, and swelling of the limbs; but that period was not enough to get the cause of the disease out of the system; therefore, not content with removing the open manifestations of the disease, we continued the treatment for several days afterwards.

Upon the mode of treatment I cannot now dwell. The chief and most essential remedy is colchicum—the great anti-rheumatic medicine; other measures are added to remove the affections coincident with the rheumatism. For example, where rheumatism affects many joints, it causes high inflammation and fever, requiring pretty active antiphlogistic remedies, particularly blood-letting and mercurial purgatives; and if, as is frequently the case, the membranes

of the heart are attacked with inflammation, it may be necessary to continue the mercury until the gums are affected. Again, where the nerves especially suffer, and severe pain is present, opium or morphia are most useful. But the great anti-rheumatic remedy, that on which I mainly depend, not only for the cure of the symptoms, but for the eradication of the disease, is colchicum; and colchicum not acting as a purgative. I have no doubt that it acts chiefly in promoting the elimination of excrementitious matter through the kidneys. You have had several opportunities of observing that as the patient got better, the urine increased, either in quantity or in specific gravity, or in both. Sometimes there has been a copious deposit of lateritious sediment, and this is the most favourable case; but it is not essential; for in other instances the excrementitious matter is eliminated in the form of dissolved urea, and then there is no deposit. This, I believe, is the true mode in which colchicum cures rheumatism and gout; and this explains why it acts most favourably when it does not disorder the bowels. When it does not disturb them, we can go on giving it for a sufficient length of time to effect a permanent cure. In severe cases I think it ought to be given ten days after the removal of the active symptoms: if this be not done, there will be a liability to relapse. If by any accident, as you have seen illustrated in some recent cases, we are prevented from thus persevering with colchicum, we are almost sure to have a recurrence of the disease. There is a patient now in the ward whose case is directly in point. It is one of the tedious painful cases, like the majority of those which used to occur when I was a student, and very much like those which are still met with in the practice of those who do not understand the curative operation of colchicum. The joints continue to swell and become painful in succession for two or three weeks; then perhaps the patient seems to be getting well, when again the disease returns: and so on till it assumes a chronic form, and the body is wasted by prolonged suffering, with perchance permanent mischief in the joints. I ascribe the obstinacy of Jones' case to the fact that we could not continue the use of colchicum on account of the extreme irritability of the stomach and bowels: although we have combined it with laudanum, and adopted other expedients, yet the stomach does not sustain it, and we have been obliged to use the less effectual remedies, mercury and opium, and guaiacum. While these exceptional cases show that all cases are not curable by colchicum, still I think they prove the reality of the curative influence of this medicine when it can be continuously given. As I before said, it generally re-

quires, after the disease has externally subsided, a continuance of its use, to a moderate degree, for a week or ten days, in order to eliminate the rheumatic matter from the system, and the patient must be kept in the house during that time. If we were to dismiss patients as soon as they are free from pain and fever, instead of keeping them in two or three weeks, which is the usual time, we should dismiss them before the end of one week. But that would not be right, because the disease, although apparently cured, is not out of the system. After the active symptoms have been subdued I give a mild tonic; and usually combine it with the colchicum during the second week; after which I substitute iodide of potassium for the colchicum, and allow ordinary diet for a few days, till the patient's strength is in some degree restored; relapses then seldom occur.

I will now take up the case of the post-mortem examination which we attended two days ago. The patient was Charles Lee, and as the case presents several points of interest, I must read an abstract of it.

"Aged 30, admitted June 24th; single, of short stature, spare conformation, and fair complexion, with some colour; a confectioner by trade, but the last twelve months occupied as a house painter. His habits have not been regular; occasionally indulging in intoxicating liquors to excess; and although he has always had plenty of food, he has been a very small eater. He is a native of London, and has lived latterly in a close confined situation. His parents are dead—father died suddenly, supposed to have ruptured a blood-vessel—mother, of paralysis. He has one brother and two sisters living. One sister he believes is in a consumption.

"General state of health stated to have been very good; has never had any serious illness.

"Present attack commenced on the 15th of June, with severe pain at the stomach after taking dinner. This pain continued for more than an hour, and he felt very much distended at the time. It returned again after dinner for four or five succeeding days; since that it has returned more or less severely after every meal, and has been always increased by hot fluids. He has kept his bed the last few days, and been under medical care.

"At present his skin is cool, of rather a sallow hue; he is much emaciated." In answer to inquiries he said he had got thinner lately; that he thought he had lost flesh within the last fortnight particularly; but he denied having been unusually either thin or weak before. "No pain in the head, or giddiness; sleeps badly. No pain in the chest, but has slight cough, and in the

morning expectorates some tenacious frothy phlegm." That was his own statement; there was none ever kept. "No palpitation; pulse weak, of natural frequency. Mouth dry and clammy; tongue clean, redder than natural; odour of breath foetid; appetite middling; very thirsty; no nausea or vomiting. The abdomen is rather prominent, irregular, and resisting, but tympanitic in all its parts, except at the margin of the liver, which projects three inches below the margins of the ribs. He has a little pain to the right of the epigastrium, but no tenderness." His abdomen was remarkably free from tenderness on pressure, except just at that spot corresponding with the position of the liver. The bowels are confined; urine scanty and high-coloured; can assign no cause for the present attack."

The only prominent symptom which the patient presented, and of which he complained at that time, was the gastralgia, the pain in the stomach after eating. It exhibited no very unusual character, and there was nothing in his appearance or in the symptoms to distinguish this from a common case of gastralgia, except the distended state of the abdomen. That attracted my attention at the time; I said, there is something here which ought to come away, and we will see what purgatives will do. He was given accordingly some calomel, conium, and castor oil, to act as an aperient; and in addition a draught containing hydrocyanic acid and soda, which I usually give in these cases, to remove the gastralgia. The gastralgia was relieved speedily by it, and the bowels were opened, but very sluggishly. It was with great difficulty we could get them open; although he took an ounce of castor oil, yet it produced only one evacuation; and this torpidity of the bowels continued nearly throughout. When they were opened, and the hydrocyanic had been given for some days, and the diet was kept moderate, the pain after eating was entirely removed, and he thought himself getting better; but what made it doubtful to me even at that time was, that although the bowels had been at length freely opened by castor oil—for I did not give acid or violent medicines, and the dullness of the liver was diminished—there was still fulness and unnatural resistance in the abdomen, and I pointed out again and again at my visits that the abdomen was too large in proportion to the size of the limbs. This became more and more obvious; as the emaciation proceeded in the body it rendered the contrast more striking. This led me to suspect that there was some organic disease, which I stated early, but what the nature of that organic disease was, it was difficult at once to determine. I tried to learn what I could by palpation and by percussion. The feel of the abdomen, as I said before, was re-

sisting and tense, but it yielded an equally clear sound in all parts, and nothing like the feel of a distinct tumor could be perceived. It was quite clear, therefore, that whatever might be the solid accumulation or growth in the interior of the abdomen, it did not reach near enough to the surface to be felt. After his bowels had been well opened, and the gastralgia removed, seeing how thin and weak he was, I thought it desirable to improve his diet, and ordered him a chop daily, and the infusion of calumba. There was a slight return of pain after eating, which was enough to induce me to alter that line of treatment again.

On the 5th of July, there is this report: "He has had a little pain after his meals the last two days, the abdomen still continues distended, there being some pain and tenderness in the loins, and a remarkable sign, vocal fremitus, is transmitted through the abdomen." This is a novelty; I was feeling the abdomen while he was talking, and the degree to which the vocal fremitus was transmitted through the abdomen struck me as most remarkable. I have tried to discover it in other persons, but there is no transmission of it in the natural state. This determined me to examine the case more minutely, and although he now complained of no cough or shortness of breath, I proceeded to examine the chest.

The report on the 8th of July is, "The right side of the chest expands less than the left, and there is some dulness below the right clavicle; expiration is loud, and the breath and voice sounds are tubular in that situation. There is dulness at the root of both lungs behind, but most in the right supra-scapular space, where the stroke sound is a little tubular, and he complains of a little pain on percussion. There is also a loud tubular breath sound in the right inter-scapular space." This proved that there was consolidation in the upper part of the right lung, and probably to a less degree in the left also. This discovery immediately confirmed my suspicion, that there was tuberculous disease of the abdomen. The presence of considerable consolidation in the lungs in a chronic case, where no inflammatory action has occurred, and that consolidation having none of the characters of a growth, may be put down as tuberculous. Therefore I presumed it to be tuberculous in this case; and this threw light on the disease of the abdomen. I had before come to the conviction that there was organic disease of the abdomen, but whether tuberculous or carcinomatous I was at a loss to determine. The discovery of the disease of the lung confirmed me in the supposition that it was the former.

My own conclusion was that there was tuberculous disease, most probably small

miliary tubercles, on the peritoneal surface; probably tuberculous disease in the mesenteric glands also, and perhaps in the intestines. But there was an absence of any thing like positive symptoms of disease in the mucous membrane of the intestines, until the period when he passed a large quantity of blood by stool—that is, on the 16th of July. He had been able to take a little decoction of bark in addition to the soda and the hydrocyanic acid. His mouth had become aphthous, and his emaciation had increased, so that I was quite positive that there was extensive disease of some kind, and I had no doubt at all about its speedy hastening to a fatal termination.

On the 16th of July the report is,—“Has had a little pain in the bowels all night, and this morning he passed about a pint and a half of blood, partly in clots and partly fluid. He became very faint, and had wine administered; pulse is now, for the first time, frequent, as well as very feeble; tongue dry. countenance collapsed, eyes sunk.” This occurrence of hæmorrhage induced me to give him sugar of lead, with a view to stop it. I continued the use of the wine, for he was so sunk that he could not exist without a stimulant. The sugar of lead was increased to three grains. The following night, three quarters of a pint more blood passed, and he was weaker. As the bowels had not been opened, and there was still constipation, I ordered a dose of sulphate of magnesia in mint water, with a little diluted sulphuric acid, which acted as an aperient, with pain. There was no further bleeding, but he remained in a state of extreme weakness, and sank in six days. The report on the 21st is, “He was seized with violent pain at the lower part of the bowels yesterday, which lasted two hours; of which five drops of tincture of opium relieved him. At the time of visit he had some, but not by any means acute, tenderness in the left iliac region,” not in the right side. The pulse was very quick and feeble, and he gradually sank after that time.

Here is the account of the post-mortem examination, twelve hours after death:—

“The body was extremely emaciated, but the abdomen not proportionately contracted.

“Some firm adhesions at the apex of right lung, and about an ounce of serum on the cavity of the pleura on this side. Anterior parts of both lungs pale, and generally crepitant; but through their substance were scattered clusters of rather soft, plump miliary tubercles.” I apply the word plump, in contradistinction to the shrivelled, withered appearance which the tough old tubercles present. The plumpness of a tubercle, and its comparative softness, so that it breaks down readily under the finger, is

the sign of its being recent; its being tough and dark coloured are signs of age. "A few of these had softened, and formed small vomicae. The consolidation was more extensive and diffused at the apex of the right lung, and in it was a cavity of about the size of a walnut, with two or three of smaller size communicating with it, containing a little grey softened tubercle. At the apex of the left lung was also some consolidation, with a very small cavity containing softened yellow tubercle. A few minute vomicae were dispersed throughout the upper lobe of this lung. The texture of the lung around these cavities was of a dark grey colour, and rather firm." The others were not so dark in colour, were softer, and more fragile. The bronchial glands were enlarged, and contained much black matter, with a little cretaceous grit. Weight of the right lung, sixteen ounces; left, fourteen ounces and a half."

"The heart was small, and the left ventricle contracted. Weight, seven ounces." That is a small heart, and I have frequently mentioned this as a bad coincidence in the case of tuberculous disease. I would rather have a large heart than a small one, in connexion with phthisis.

"The intestines softly adhered in several parts to the abdominal peritoneum, and in the right iliac region lay two or three ounces of muddy, foetid serum, on removing which were seen four patches of ulceration in the ileum. "Two of these patches had opened into the peritoneal sac, and allowed the contents of the gut to escape. On removing the intestines they were found adherent at several places in the lower part of the abdomen, and the intestines themselves were so softened at the diseased parts as to tear upon the slightest force. The mucous membrane of the whole small intestines, from the duodenum to the ileum, exhibited a great amount of disease. It was comparatively pale in its colour, but it was studded in numerous points with yellow opaque tubercles underneath the mucous coat, and in other parts there were large oval patches of ulceration, lying transversely to the axis of the intestine. They had ragged thickened margins, and in parts contained yellow, opaque, tuberculous matter. They lay at intervals from an inch to two inches apart, through the greater portion of the small intestines. Many of these ulcers had perforated the coats of the intestine as far as the peritoneum. The mucous membrane about the ileo-caecal valve was much thickened, extensively ulcerated, and of dark colour. There were two smaller ulcerated patches in the ascending portion of the colon, but none in the transverse arch or descending portion. The mesenteric glands were greatly enlarged by the deposit of quantities of opaque, yellow,

tuberculous matter in their interior. In the upper parts they formed a nodulated tumor of some size." Thus, at the upper part of the mesentery nearest the diaphragm, in the vicinity of the base of the lung, the enlarged and indurated glands formed a large solid mass. I mention this to assist you in understanding the way in which the vocal fremitus was transmitted from the chest to the abdomen. I do not know of any other explanation that can be given to it. "On the peritoneal surface of the small intestines corresponding with the ulcers on the mucous lining, there were many patches of opaque, curdy, or granular tuberculous matter, and rows of particles of a similar character could be traced apparently in the course of the lymphatics, leading to the enlarged mesenteric glands. A few granules were scattered in various other parts of the peritoneum, parietal and visceral.

"The rugae of the stomach were thickened, and more opaque than usual.

"The liver was adherent to the diaphragm. The adherent upper surface was studded with fine semi-opaque granular tubercles, which could be entirely scraped away," leaving the peritoneal covering entire below. It was in fact a deposit on the surface of the peritoneal covering. I shall advert to it presently, as a proof that it was the medium of adhesion between the peritoneum covering the liver and that lining the diaphragm. "The texture of the liver generally was coarse, and the upper portion of the right lobe rather soft. The gall-bladder was greatly distended with dark liquid bile. Weight of the liver, 3 lbs. 14 oz." A few ounces above the natural weight. "The spleen was healthy."

"The capsule of both kidneys was slightly adherent, and their texture a little coarser than usual. The peritoneal coat of the right kidney was studded with granular opaque matter, and there was a little opaque yellow deposit in the structure of the left kidney. The left supra-renal capsule was very large."

The following are the microscopic appearances which I found in the tuberculous deposits as taken from various portions of the diseased parts; magnified 400 diameters.

The first specimen was cut from the yellowest part of a cluster of opaque miliary tubercles in the left lung. The appearances were:—clustered granules of irregular shape and size, with a few long wavy fibres here and there traced among them. This was obviously the granular matter of the opaque tubercle, containing a little of the fibrous structure of the lung.

No. 2 was a portion squeezed from the softest part of a solid yellow tubercle in the left lung. The appearance was that of granules clustered as in the last specimen, but without any trace of fibres at all, breaking

down readily with water. There were a few more oil globules conspicuous in this than in the former.

No. 3 was squeezed from the centre of a tubercle in the mesentery. This presented exactly the same appearance as the matter squeezed from the yellow tubercle in the lung—granular, without trace of fibres.

No. 4 was cut off from a semi-opaque yellow granulation on the peritoneum of the right kidney. It exhibited the appearance of granules closely impacted in a few fibres. Whether these fibres were the remains of the fibre of the texture on which the matter was deposited, or whether they were fibres in the deposit itself, I cannot determine: they would have much the same appearance in either case.

No. 5 was cut from an opaque granular deposit under the peritoneal covering of the small intestine, near an ulcer. This had the same appearance as the last, but with slighter traces of fibres. There was no appearance of pus globules in any of these specimens. I never met with a case of tubercles in which the granular appearance was more uniform—in which there was a more complete absence of cells and fibres. I never saw a case in which the granular form was exhibited in a higher degree, and in which there was less appearance of organisation, or an attempt at structure.

This, then, obviously turns out to be a case of *tabes mesenterica* in a very severe form, rendered more rapidly destructive by the great amount of ulceration of the intestines.

Of the remarkable points in this case I will notice, first, the insidious commencement and progress of the disease. The disease might be said to have been latent during the first three weeks of his abode in the hospital. It was insidious with regard to the abdomen; for although there were symptoms of disorder there, yet they were not prominent, nor in any degree proportionate to the lesions. What he complained of mainly was pain after eating, and this was nothing more than we have in a far more severe degree in common dyspepsia—in gastrodynia; and my first impression before the emaciation became manifest in a few days, was, that it was a case of gastralgia in a weakly subject. His own account seemed to warrant that opinion. He did not acknowledge that his complaints had been of long continuance, or that he was very weak under them. It was only by observing how the weakness and emaciation increased that we were led to suspect something more serious, and to investigate more minutely the signs of the case.

Besides the absence of severe pain or tenderness in the abdomen, there was an absence of diarrhoea. It is generally described, that with ulceration of the intestines, par-

ticularly of the lower part, there is more or less diarrhoea; but in this case the bowel were very torpid from first to last; and even with the aperient (and, happily, we did not give anything very irritating) very moderate evacuations were produced. The only thing that appeared to produce pain was a dose of sulphate of magnesia and sulphuric acid, exhibited a few days before his death with a view to check the hæmorrhage. I drew attention to the absence of pain in the abdomen at the time he came in. Except over the region of the liver, which was a little enlarged, he denied feeling any pain on pressure. I tried again and again, and it was only a few days before his death that there was any tenderness of the abdomen. He complained of a little pain in the loins on pressure, but never scarcely any in front. Fever was wholly absent. He did complain of sweating profusely at night after he had been in the house some time, but there was nothing like a development of fever, not even hectic fever in its ordinary form. The pulse was wonderfully slow, a symptom that surprises me more than any other: for in the cases I have hitherto seen, although there may have been no prominence of any other symptom, yet the pulse has been frequent. Mesenteric disease is not by any means common in adults; it generally occurs in children, in whom the pulse is readily accelerated, and therefore it may happen that the pulse is slow in the *tabes mesenterica* of adults.

In this absence of prominent vital symptoms we met with one remarkable physical sign, which was the more important because it stood as it were alone, in the midst of surrounding darkness. While the other symptoms said nothing, this sign said something; we did not understand what it meant, but if we should meet with it again, it might indicate to us the nature of the disease. I speak of the increased vocal fremitus felt on touching the abdomen. Comparing the condition of the lung with that of the abdomen, I think this physical sign may be explained. Through the medium of the consolidations at the centre of the lungs the vocal fremitus would be easily transmitted to their lower parts; it would there come in contact with the liver, and even with the mesenteric glands, which rose up to the level of the liver and formed a solid mass continuous with it. This mass being a much better conductor than the ordinary loose gaseous contents of the abdomen, would be a means of communicating the voice below. Although the tympanic distension of the intestine in front prevented our feeling the solid tumor underneath, yet the vocal resonance being transmitted to the centre of the abdomen, it would readily be given out through the layer of tympanic intestine stretched over

it like a drum. This is a solitary case, and presented this remarkable physical sign, probably in consequence of the continuous solidity in the lungs and abdomen, which might not exist in other cases; but it may be useful to bear in mind this possible means of diagnosis. The solid tumor in the abdomen was not felt during life, because the intestine tightly distended with gas lay in front of it. But we fully expected to find organic disease from the general facts, that when chronic disease is attended by progressive emaciation, there is pretty surely some structural mischief; and that when the abdomen remains large, whilst the limbs waste away, there is pretty surely organic disease in the abdomen.

We will proceed from the abdomen to the lungs. Here we have reason still more to wonder at the absence of symptoms. There was a little cough when he first came in, but it was so trifling that it seemed to have passed off entirely while he was in the house; and so free was he from anything like symptoms of disease of the chest, that that region was not examined until several days after his admission, not in fact till I began to be curious about the case in consequence of its anomalous character. There was no shortness of breath, no pain, no visible expectoration, no acceleration of the pulse. The physical signs, as they ought to be if there were disease of such extent, were far more instructive, and distinctly pointed out consolidation to a considerable amount at the apex of both lungs. The right side was far duller than the left, which was comparatively clear, but not so clear as by experience, I know it should have been with that degree of emaciation. We found on examination that there was not only consolidation, but even a cavity at the upper part of the right lung. There are no constant means of distinction between a cavernous sound in the consolidated apex of the lung, and a tubular sound in the same situation. What we hear over a consolidated apex of the lung is much more commonly due to the transfer of sound from the trachea to the apex of the lung than to the resonance of the breath or the voice in a cavity. Laennec no doubt laid too much stress on the signs of a cavity—pectoriloquy, and the phenomena generally; and when we consider the fact that in order to develop these cavernous sounds there must be a free communication between the bronchial tubes and the cavity, we can easily see that in many instances cavities may be present without giving signs: the communication is cut off; and if a cavity is boxed up quite air tight, if there is no communication with the bronchial tubes, and it is of a moderate size, as in this case, it would give no signs at all; but the consolidation around it would

be indicated by the transfer to it of the vocal sound from the trachea or large bronchi.

The next interesting point has reference to the rapid progress and ravages of the disease. No case can better illustrate the proofs of disease arising from perverted nutrition in which the system has not power to withstand its progress. The ravages of the disease were enormous. It is a rare thing to meet with destructive diseases so extensive in the intestinal canal, but if we look at the nature of the lesions, they are of the same class as those which take place in the kindred affections of the lungs. There was disease of the whole system: but here the deposits and consequent destruction took the lead in the abdomen, and as, in rapid consumption of the lungs, disease destroys most speedily and smoothly, where there is the least resistance on the part of the reparative powers, so also, in this case of consumption of the bowels, the body wasted away with few symptoms of distress; being, as it were, silently melted down by the destroying process, which rapidly spreads through the vital organs, and dethrones life almost without suffering or struggle.

Lastly, with respect to the pathology, we have here a very pure case of mal-nutrition—of tuberculous disease developed in its worst form, manifesting all the characters of a perverted and degraded nutrition. The matter which was deposited in various parts, and formed the basis of the disease, was obviously a degraded material, a granular form of albumen—the fibrin or plasma from the blood, but destitute of the fibres and nucleated cells which constitute the true elements of organisation. It was, as it were, the plasma in a comparatively dead state; not so dead as to run into putrefaction; there was in it enough of vegetative life to enable it to sustain existence, as part of a living texture. But wherever it was thrown out, it clotted and blocked up the structures, impeding their circulation, leading to ulceration and itself further degenerating into the still more lifeless and disintegrated state of mature and soft yellow tubercle, which is utterly aplastic, consisting of a mere magma of loose granules.

But the situation in which the chief deposits took place will serve still further to explain the rapidity of the wasting. The deposition took place first and chiefly in the intestinal canal and in the mesentery, and thus attacked the head quarters of nutrition and assimilation, so that it is no wonder that he should have rapidly wasted; that his powers should have failed more and more, that they should have shown no resistance against the disease. In fact, we find, both from the extensive ulceration of the bowels and the tuberculous

deposit there, and from the accumulation of tuberculous matter in the mesenteric glands, that the channels of nutrition were all blocked up; there was a total arrest of nutrititious matter, and the man might be said, therefore, to be palpably starved from the want of a supply of chyle, or materials for chyle. Hence, the rapid tabes, rapid sinking; and hence, too, the absence of congestion, inflammation, and irritation, which in other instances check and ruffle the downward progress of the consumptive.

What do the harassing symptoms of phthisis in the lungs arise from—almost all of them? Not from the tubercles alone, nor from their softening or breaking down alone; but from inflammatory congestion, and increased secretion and irritation, of the adjoining parts, which suffer from and attempt to circumscribe the destructive lesions; this it is that develops most of the symptoms with which we are familiar in the ordinary form of phthisis. By withdrawing the partial superfluities of blood, by preventing or removing congestion or inflammation, we may palliate many of these symptoms. No such measures were needed here. The disease had put up an effectual barrier against any superfluity of blood in the lungs and in the whole system; but this barrier, which thus was keeping away these irritative symptoms, was also leaving the disease to take its full ravages unrestrained, and to consume away the body at a more rapid rate. So, too, being in this starved and almost bloodless state, it is no wonder that hæmorrhage from the bowels was followed by rapid sinking of the whole powers, and by that sudden extension of the ulceration of the intestines which led to perforation, and speedy death. After that hæmorrhage there was not only increased weakness of the whole body, but another remarkable anomaly in this case, one of the most formidable lesions which can occur in the human frame—perforation of the intestines took place without its usual terrible symptoms. We are sure, from the presence of some traces of inflammation there, that the perforation had existed a little while before death. The report the day before his death states that he was seized with violent pain at the lower part of the abdomen, which lasted two hours, and was relieved by five drops of tincture of opium. This is nothing like the usual intense, unappeasable pain in perforation of the intestine, but I account for it in this way—the body had been so blanched of blood, so exhausted of excitability, that it might be said there were not the materials for pain or inflammation, or that process of excitement which usually follows this injury. He was in a state altogether of atrophy, collapse and sinking. Disease had so completely sapped the vitals that there

was scarcely a remnant left for reaction, and destruction wrought its worst without shock and almost without a struggle.

This case illustrates very well an extreme case of tuberculous cachexia; in which the plasma of the system was degraded to the most caco-plastic or aplastic state. Hence, wherever the material of nutrition was thrown out, it would be no more plastic lymph, but tubercle. This was shown in the adhesions which took place. The intestines and other parts of the viscera of the abdomen were adherent to each other, to the surface of the liver and so on; and the main mass of the material forming the adhesions was made up of granules. This was seen in a striking manner, too, in the deposit around the ulcers. The margin of the ulcers was thickened, which is the process by which we all know that nature tries to circumscribe a destructive action. But what was the matter thrown out for this purpose? It was not lymph, but tuberculous matter—the granular form of tubercle. The groups of tubercles around the ulcers exhibited in a very striking manner their identity with the material of nutrition: that which in common cases is deposited in the form of lymph here appears in the degraded state of tubercle.

CONCLUDING ADDRESS.

I have trespassed a little beyond the hour, and therefore must briefly conclude by thanking you for the attention you have given during this course of lectures now to terminate. You may have observed that I have made them the means of discussing many important subjects in pathology; and I have done so because practical medicine is gradually, but steadily assuming a much more rational aspect than formerly. The various doctrines with regard to pathology, diagnosis, and treatment of diseases, which I have been in the habit of advancing and teaching for years past, are now becoming more established, and in divers instances are brought forward by others as well as by myself. Those points of pathology upon which I am apt to dwell are, generally speaking, closely connected with practical inferences; and if I have been less anxious than clinical teachers frequently are about differential diagnosis or minute distinctions in nosology, it is not because they are not useful in their way, but because I am convinced that the more you turn your attention to the *nature* of disease, rather than its *name*, the better will you be supplied with the true rules of diagnosis, prognosis, and practice. That which you begin here as students I hope you will continue as practitioners: for the whole course of a medical man's life is that of study. He is learning from its beginning to its end. I hope I have succeeded in convincing some of you that there is no case of

disease, however common, however familiar, however apparently easy to be understood, but what is full of new and profitable interest, when viewed in the light of a rational pathology. I think we are getting more and more into a period in which the practice of medicine will be interesting, rational, and satisfactory, as well as instructive and useful. I now bid you farewell, hoping that those of you whom I shall meet again will return to your studies with renewed energy on the approaching session.

CAUTIONS WITH REGARD TO THE PREMONITORY SIGNS OF PUERPERAL CONVULSIONS.

BY DR. MEIGS AND M. COLOMBAT.

LET the physician be aware of the danger of *headache* in women in advanced stages of gestation. A severe headache, and especially one accompanied with a sense of weight on the crown, or a severe pain that can be covered with the thumb, is but one step removed from eclampsia. Such a person ought to be bled freely from the arm, if it be possible to do so without flying in the very face of powerful counter-indications. I have not spared the lancet in many such cases; but I may confidently assert, that where I have done so, I have had cause most bitterly to regret it. A severe headache in a woman advanced in pregnancy should be taken as a sign that she ought to be let blood—almost, I was about to add, without inquiring of the pulse. M.

For those cases of *insomnia* that are coincident with a plethoric habit of body, we should direct a venesection, which is, under such circumstances, the first and best of sedatives. C. [Not merely to cure the vigil, but, what is far more important, to ward off the attack of convulsion or apoplexy, which should be held as threatened, and even as an imminent danger, for persons in whom the insomnia has arisen to a considerable height.] M.

If a woman in labour should say, Sir, I cannot see you, the room has been darkened; or should she say, I see every object doubled, or only half of any object, I esteem it far more prudent to look upon the complaint as one exigent of immediate treatment, than to say, along with M. Colombat, that it arises from sympathy with the womb, and pass it slightly by. A woman in labour said to me, "Doctor, what is the matter, sir? I cannot see you." "Give me a bandage and basin," said I to the nurse; "quick, quick!" but before I could tie up the arm, she was in eclampsia. M.

CLINICAL LECTURE
ON
DROPSY WITH ALBUMINOUS
URINE;

*Delivered at King's College Hospital,
Dec. 9, 1845.*

By Dr. TODD.

Reported by Mr. J. S. Lavies.

GENTLEMEN,—I shall call your attention to-day to some cases of dropsy after scarlet fever, and continue my remarks upon the pathology of Bright's disease, or dropsy dependent on fatty kidney.

The little boy whom, I mentioned in my last lecture, as suffering from dropsy after scarlet fever, is nearly well. His dropsy has disappeared, his urine much less albuminous, yet up to yesterday he continued to pass considerable quantities of lithic acid, which sunk in grains to the bottom of the vessel, giving to the urine much of that dark appearance it is wont to assume when it contains blood. I have seen several cases of this kind where the appearance so commonly noticed in bloody urine has, on examination, been found to be due to lithic acid. The application of heat and nitric acid, generally will decide the question, for if there be no albumen there can be no blood in the urine.

Within the last ten days, a boy, æt. 14, came into the hospital, universally dropsical; his skin desquamating freely after scarlet fever. The urine in this case was albuminous, smoky, and dark coloured, with a copious precipitate, of the nature of which I was uncertain until I had used the microscope, when I found that it consisted, as in the last case, almost entirely of lithic acid. The quantity of epithelial scales was greater than in healthy urine. This patient is doing well, under a diaphoretic treatment, with moderate purging.

The excretion of large quantities of lithic acid in both these instances, as well as the evidence afforded, by the presence of albumen in the urine, of an hyperæmic state of kidney, denote an irritation of that gland which it takes time to subdue. The epithelium is so freely formed as to fill up the tubes; there is, indeed, a process of desquamation on the mucous surface of the kidneys similar to that which takes place on the skin. When these particles of epithelium pass off, as they will do generally after a time, then the dropsical symptoms will subside; hence it is most important to keep up cutaneous action until the renal secretion be completely restored, lest such matters as ought to be carried off by the skin should find their way to the kidney, and the renal irritation be thereby increased.

When the irritation continues unabated, all the worst consequences attributed to Bright's disease may occur, and the patient will die from suppressed urinary secretion, with all the effects of a retention of urea in the blood.

The following case, lately in the hospital, is one quite in point:—

A girl, 11 years of age, had an attack of scarlet fever a month before her admission into the hospital. The symptoms of the fever were ill-defined; the eruption was imperfectly developed. The attack appeared to be a mild one. She was treated as an out-patient, and seemed to get well. Just before she came to the hospital, having been exposed to cold and wet, a new set of symptoms presented themselves; and here it may be noticed, that it is in the mild forms of the disease that the dangerous sequelæ are most to be apprehended, the poison having been very imperfectly or not at all eliminated. This patient then had sore-throat, enlarged tonsils, a dry skin. The urine was scanty, smoky, and albuminous, and contained numerous scales of epithelium and grains of lithic acid. She was almost universally dropsical, and complained of headache and deafness. She was bled and purged, had diuretics, and was blistered on the back of the neck for the head symptoms. Her symptoms continued without material alteration up to the 26th of November, when she was seized with diarrhœa, which was followed by an epileptic fit: this was repeated twice. From that time she remained in a semi-comatose state for some days, when she was seized with dyspnoea, accompanied by delirium, which continued up to the time of her death. During this time her urine was very scanty, and almost entirely passed with the motions. A day or two before her death a little was obtained, and this was found to be smoky and albuminous, and to contain epithelial particles in great abundance.

Upon a post-mortem examination, the brain was found to be healthy; there was no sub-arachnoid effusion, which perhaps was due to a hyperæmic state of the brain; the liver was enlarged, and there was a copious effusion of serous fluid into both pleuræ, and recent lymph poured out upon the surface of the membrane. This pleuritic affection no doubt materially hastened her end.

In this case the kidneys were rather larger than natural, and their appearance was such that I am quite sure no one with unaided vision would have hesitated to pronounce them examples of the morbid state known as Bright's disease. They were mottled on the surface, congested here and there, pale and anæmic elsewhere. They exhibited, indeed, what some writers on the disease have described as "a remarkable mixture of

hyperæmia and anæmia." The principal hyperæmia was in the tubular portion; the anæmia in the cortical substance, though in this there were also some spots of congestion. It was plain, too, that some deposit had taken place in or between the tubes.

Such was the rough anatomy of the kidneys; but I would not pronounce positively on the nature of the disease of these organs until I had examined them by the microscope. And let me here remark, that in future the interests of science demand that we should never, without this aid, attempt to decide on the nature of renal lesion. I believe that many cases have been set down for Bright's disease which were not really so, and that the real disease in a partial state has often been overlooked; and that healthy kidneys, owing to some accidental irregularity in their circulation, have been condemned as morbid. It is not long ago that, at a post-mortem inspection here, we found kidneys which had so much the appearance of Bright's disease that I could not persuade myself to view them otherwise than as examples of it; yet Dr. Johnson, on a microscopical examination of them, found not the slightest trace of disease. Hereafter, then, you must place no confidence in any report of an inspection for renal disease in which the condition of the epithelium has not been determined by the microscope.

To return to our case: the kidneys were subjected to microscopic examination both by Dr. Johnson and myself. We found a large quantity of epithelium filling up the tubes; it was healthy in character, but unusual in quantity; it clogged the tubes, compressed the portal plexuses, congested the Malpighian tufts, and cutting off the force of the heart from the renal veins, left the radicles of that system to be congested in the pyramids of Malpighi: thus explaining the appearances above described.

The paleness of the cortical substance was due to the excessive formation of epithelium; its anæmia, to compression of the portal plexus; while the occasional patches of congestion indicated the position of some Malpighian tufts in which the circulation was delayed.

It is plain that this disease is different from Bright's disease of the kidney, as I described it to you in my last lecture, although it produces the same mechanical effects, and is accompanied by very similar constitutional phenomena. In this disease the epithelium is healthy in quality, and superabundant in quantity; but in Bright's disease it is unhealthy, being loaded with fat. I will not say that in this latter disease the epithelium is *formed* in undue quantity, but from its size and the tortuousness of the tubes it *accumulates* in greater quantities than it ought. In both cases the same me-

chanical effect on the kidney is produced, and the consequence is, that in both albumen appears in the urine. At length, however, that secretion becomes diminished in quantity, urea accumulates in the blood, and then symptoms of poisoning by urea shew themselves.

It may here be remarked that urea in the blood does not poison unless there be no vent for it through the kidneys. I once injected half a drachm of urea into the vein of a dog, and the only effect produced was an excessive secretion of urine. The place where the dog was kept was literally flooded in an hour or two by the frequency and quantity of his micturition. If you find abundance of urea in the blood, and little in the urine, symptoms of poisoning will soon come on, if no improvement take place.

In my former lecture I referred to cases of inflammatory dropsy, to which the attention of practitioners was long ago called by Dr. Blackall, and I stated my conviction that this disease is very similar to dropsy after scarlet fever. The kidneys in both cases are in a state of irritation; in the latter, from poison introduced; in the former, from a secretion retained.

The anatomy of the kidneys in inflammatory dropsy has yet to be investigated. I believe I can furnish a contribution to this subject; but as my examination was made a long time ago, I do not desire to attach great importance to it. You may remember I told you, in my last lecture, that I had, at one time, formed the opinion, that in Bright's disease there was an undue secretion of epithelium into the uriniferous tubes, by which they were distended and clogged. This view was founded on an examination of the kidneys in a case of dropsy with albuminous urine, which ran its course very quickly; at that time I thought the case was one of Bright's disease. I am now of opinion it was one of inflammatory dropsy.

The patient was a fine-looking young man, 25 years of age, of regular habits, and never exposed to privations. After exposure to cold, he was seized with pains in his legs and shiverings; four or five days after, swelling of the feet and ankles came on, and he became at last universally anasarcaous. He had great pain in the back. His urine became scanty, smoky, and albuminous; its specific gravity was 1.015. He was under treatment for these symptoms a month without material change. He was freely bled, purged, had diuretics and occasional hot-air baths. One day he was suddenly seized with shivering and vomiting, with pain in his right side. His urine became bloody and extremely scanty. The shivering was repeated, followed with colliquative diarrhoea. The abdomen became painful and tympanitic; manifest symptoms of acute peritonitis and pleurisy set in, and he

died after four days of great suffering, without any head symptom. On a post-mortem examination unequivocal signs of recent pleurisy and peritonitis appeared. The kidneys were much enlarged, and mottled on their exterior. The cortical substance was extremely pale, but presented, here and there, hyperæmic spots; the medullary portion was red and congested. On referring to my notes of the Microscopic Examination, I find it stated, that "the tubes were enlarged and filled by an abundant epithelial formation, which seemed to distend them. On making a transverse section, the dilated state of the tubes was more conspicuous, and the epithelium could be pressed out of them, leaving only their dilated walls. Several Malpighian bodies were enlarged."

Here was a state of kidney precisely similar to that of the girl who died of dropsy after scarlet fever. Large Malpighian bodies, excessive formation of epithelium in the tubes, leading to retention of urea, which was found not only in the blood, but likewise in the fluid effused into the serous cavities. It is worthy of your notice, that while the early symptoms of these two cases were very similar, the mode of death was the same—violent inflammation of serous membranes; and a question of great interest arises out of this; Is it in cases of this kind, that inflammatory affections of the pleura and other serous membranes are most apt to shew themselves; cases in which the disease runs a short course, and in which the morbid element is quickly and almost suddenly retained in the blood?

Let me now direct your attention to the true pathology of Bright's disease. Dr. Johnson has examined forty cases of acknowledged Bright's disease. In all, the grand anatomical conditions were, an unnatural deposit of fat in the epithelial cells, deranging, by its pressure, the circulation, obliterating the vessels, and causing atrophy of the kidneys. Such a disease, then, differs from those before mentioned, both in its anatomy and in its symptoms. The true Bright's disease comes on silently and insidiously, and a patient may die of some other disease without exhibiting a single symptom of renal affection. A case of this kind fell under my own observation about two years ago. I examined the body of a gentleman who died from another disease, but who had always appeared remarkably healthy. A few days before his death his urine was discovered to be albuminous, and the kidneys were subsequently found in an early stage of Bright's disease.

In Bright's disease the entire structure of the kidneys does not become involved all at once, nor even quickly. The abnormal depo-

sit takes place gradually; one set of tubes after another becoming affected. In the other cases, however, instead of lasting for months, or for years, from two to eight weeks appears to be the average of time occupied by the march of the disease; and in such cases the several sets of tubes, or pyramids of Ferrein, become affected all at once, or very rapidly after each other.

It is important to notice, that after exposure to cold, Bright's disease may for the first time show itself by symptoms, and prove rapidly fatal; but in such cases the fatty accumulation has been gradually forming for a long time previous. Such a condition is one of active congestion, supervening on fatty deposit. How much more serious, then, is exposure to cold, when fatty kidney is already in existence, than when the kidney has been previously healthy! The same difference seems to exist between these two cases as between the occurrence of pneumonia in a tubercular or healthy lung. The inflammatory affection is much more serious in the former than in the latter case.

The rapidity of course which dropsy from fatty kidney may run, will depend, in a great measure, on the condition and circumstances of the patient; on his manner and habits of life; on the comforts he can command; on the necessity of exposure, &c.; and so, in considering this question in reference to all classes of society, we may reasonably contrast rich and poor. The former surrounded by comforts, and not obliged to expose himself to the inclemencies of weather, will not only have the disease for a long time without any symptom, but, soon after symptoms have appeared, he may go on for a considerable period without material change. Not so the poor man: earning his bread by his daily labour, he is frequently exposed to influences which check cutaneous action, occasion congestion of the kidney, and defective secretion by it.

An instance occurred to me last summer, which strikingly illustrated the facility with which congestion of kidneys may be induced by a sudden check to the action of the skin. I was attending a gentleman for well-marked symptoms of Bright's disease. His urine was highly albuminous, and occasionally smoky: he was also unusually anasarctous, and had some ascites. The case was going on quite favourably under the treatment adopted, and as the weather was fine and warm, I encouraged him to take exercise. One day he stood for more than half an hour at his window, with less than his usual clothing, exposed to a hot sun and a sharp, dry, east wind. Shortly after this, as he was about to leave the house for his walk, he was suddenly seized with a violent pain in the loins, which compelled

him at once to go to bed. When I saw him he appeared to be suffering the most agonizing pain in the back, and extending over the abdomen, rather relieved by pressure there. He vomited frequently, and his sufferings were like those of a patient in whom a calculus is passing through the ureter. The urine now became very scanty and very smoky, almost black. Opium and topical cupping were employed to relieve the pain, which, after a short time, subsided, but it was long before the healthy secretion of urine could be re-established.

You will, then, observe that an undue accumulation of fat in the epithelial cells of the kidney is the grand anatomical character of the chronic form of dropsy with albuminous urine, or true Bright's disease; but that fatty kidney may appear to run a rapid course in consequence of the supervention of active hyperæmia upon an already diseased kidney, just as phthisis may appear to run a rapid course by the supervention of pneumonia, or bronchitis, though the tubercle may have been long previously deposited in the lung; and I must here remind you that, in this disease, the state of hyperæmia is always secondary, whether it be active or passive. The deposit of fat will not of itself cause a hyperæmia in the Malpighian tufts, but an anæmia of the portal plexuses; and the checking of cutaneous action by exposure to cold, will give rise to an irritated state of the kidneys, an increased attraction of blood to these organs, an active hyperæmia of them.

It is a feature of the system of pathology which has prevailed for the last twenty or thirty years, greatly enforced by the teaching of the clever but mischievous Broussais in France, that all morbid actions are preceded by more or less of congestion in the part diseased, and that the diseased state is the consequence of this abnormal afflux of blood. But it would not be difficult to shew, that, in almost all instances, the afflux of blood is a consequence, and not a cause. In the disease we are now considering, this is undoubtedly the case. The slow and insidious deposit of fat is due to an alteration in the *quality*, not in the quantity of the blood; and the pressure of this upon certain parts of the vascular system of the kidney, gives rise to its congestion.

To determine the true pathology of the disease, we must, as I have before told you, look back to those circumstances which favour the formation of fat. We know well that fat is normally deposited in various parts of the body. In the kidney the deposit of fat is naturally very small in quantity; so small that its presence may be readily overlooked. In this disease we find it in abundance. Hence two questions ap-

pear to arise. 1. Why is the fat formed at all? 2. Why is it deposited in the kidney? It were premature to speculate on these points at present. We may, however, assert that the fat may be formed in two ways—first, directly from the food, and secondly, in the secondary destructive assimilating processes. One may conjecture that it might result from an abnormal association of the elements of those secondary organic compounds which are usually excreted by the kidneys; and thus its deposition in that organ may be determined. These questions, however, remain for further examination and research, and the two analogous diseases—fatty liver and fatty kidney—afford an ample field for the investigation.

In conclusion, it may be useful for me to sum up the different points to which I have been directing your attention. First, then, dropsy with albuminous urine may occur along with a healthy kidney, which, however, is mechanically congested by some obstacle to the circulation, as in cases of diseased heart; or where, in a kidney also healthy in structure, there exists disease of the blood, attended with tenuity and weakness of the blood-vessels, as in scurvy and purpura.—Secondly, it may occur where the kidney is *irritated* by the poison of scarlet fever, causing excessive secretion of epithelium.—Thirdly, where the kidney is *irritated* by retained urea, or by some product of the action of the skin which ought to have been excreted by that emunctory.

Fourthly, where the uriniferous tubes are filled with an abnormal deposit of fat in the epithelial cells.

A word or two on the treatment. When dropsy with albuminous urine arises from either the second or the third cause, then an antiphlogistic and eliminatory plan of treatment may be frequently pursued with advantage. I do not mean that large quantities of blood are to be taken. Patients of this third class do not bear large depletion; and this may be asserted generally of all patients labouring under maladies which are due to a poison or morbid matter in the blood. Small topical detractions of blood are what are most advisable; and only in cases where there is considerable congestion of the kidneys. It is, however, to the eliminatory part of the treatment that I would attach most importance: keep open all the emunctories to a moderate degree, but especially the skin; by promoting the action of which, you not only favour the excretion of the poison, but you relieve the kidneys.

When the disease arises from the fourth cause, the treatment must be directed to the circumstances of the case. If a patient should apply for advice quite in the early

stage, then, change of air, rigid diet, and exercise, may prevent the further march of the disease; but if the later stages have arrived, then the treatment will be much the same as that advised for the second and third forms of dropsy. The patient is threatened with the accumulation of a poison in the blood, and the object of the practitioner should be to keep down the quantity of that deleterious agent, and keep open the channels for its removal. But in these cases you must be very careful not to deplete too much; the more you deprive the blood of its colouring matter, the more you depress its vital power, its natural actions, and the greater hold you give to any poisonous agent which may have been developed in it. You must be careful not to attribute too much importance to an azotized diet, as a remedy in the advanced stages. There can be no doubt that in the early periods it is most useful to guard against the introduction of aliments into the system which may feed the fatty deposits, or supply the blood with fat. But such a system can do little or nothing when the deposit has already taken place in large quantity: it may possibly diminish the further deposit of fat. The best general rule I can lay down on the subject of diet in these periods of the disease, is to suit the diet to the exigencies, and in some measure to the feelings and appetite of your patient, and to adapt it, as far as you can, to his powers of primary assimilation.

CLEFT PALATE.

THE origin of cleft palate has been referred to different causes, but no explanation has been hitherto offered of the remarkable fact, that a fissure in the median line never occurs, except in the posterior part of the palate, and has never been observed anteriorly, or in the lip. M. Petrequin accounts for this by the circumstance that the two superior maxillary bones are not contiguous; as originally they are separated by the *inter-maxillary bone*, a fissure anterior to the palatine bones must, therefore, be situated between the inter-maxillary and one of the superior maxillary bones, and must be lateral at whichever side it may occur; but posteriorly the fissure must be median, as it exists between the two palatine bones which are not separated by any intervening bone.—*M. Petrequin's Traité d'Anatomie Médico-Chirurgicale*, and *British and Foreign Medical Review*.

[We apprehend that physiologists have long been aware that in cases of double hare-lip, where the fissures extend into the palate, the isolated portion of bone which separates the slits is to be considered as the representative of the intermaxillary bones.—*Ed. Gaz.*]

Name of Patient.	Age.	Sex.	Amount of exercise taken.	Pulse.	Disease.	Temperature of the		
						Mouth.	Hand.	Atmo- sphere.
97. C. L.	50	M.	None	80	Hypertrophy of the liver	Fah. 100°.	Fah. 80°.	Fah. 62°.

In this case the liver reaches to within an inch of the umbilicus. The tongue is furred at the centre. Urine saffron-coloured. Constant cold chills, rarely followed by flushes of heat. Night sweats, followed by sensation of coldness. Respiratory murmur natural, but not developed until the inspiratory effort is half over. Frame emaciated.

98. J. P. | 35 | F. | None | 108 | Phthisis | 99°. | 94°. | 62°.
General, though imperfect, dulness on percussion of the chest; respiration chiefly bronchial—entirely so over the middle lobe of the right side. Dyspnœa. Sub-pectoral pain of right side. No menstrual return for five weeks. Slight cough; night sweats slight.

99. T. G. | 39 | F. | None | 108 | Syphilis (tuber- | 100°. | 94.5 | 62°.
cular eruption)

Has tubercles of various sizes over the face, back, &c.; the tubercles are hard, elevated, and of a copper colour.

100. E. C. | 20 | M. | None | 112 | Phthisis | 94°. | 77°. | 62°.
Excessive feebleness; extreme emaciation of long standing; neither hectic fever nor night sweats; slight cough; little expectoration. Has been in a consumptive state six years. The upper lobe of left lung a solid mass; respiration of right lung puerile.

101. C. C. | 18 | M. | None | 130 | Phthisis | 96°.5 | 73°. | 62°.
Dull percussion sound, with bronchial respiration at apices of lungs, and at middle lobe of right lung. No cough. Pain in the right hypochondrium. Wasting of the body. (This patient is brother of the above 100.)

102. S. W. | 63 | F. | 8 miles | 92 | Lithiasis. | 98°. | 91°. | 62°.
Dysuria; slight strangury; pains in the course of the loins, ureters, thighs, and legs. Frontal cephalœa; dizziness; sickness; urine deep coloured; leucorrhœa. Nine years ago had jaundice.

103. A. H. | 67 | F. | None | 112 | Menorrhagia (or- | 99°. | 96°. | 62°.
ganic disease of
the uterus?);
morbus cordis

Having ceased to menstruate for twenty years, a sanguineous discharge appeared twelve months ago, or more, and has never ceased. Debility; lumbar pains; pain of a grinding kind at hypogastrium; sleeplessness from pain. Hypertrophy of the heart; palpitation coeval with menorrhagic irruption. Urine non-albuminous. Respiration bronchial.

104. E. J. | 23 | F. | None | 125 | Phthisis | 102°.5 | 98°.5 | 61°.
Dull percussion sound, and bronchial respiration of right lung. Cough and expecto-ration slight. There is diarrhœa at present; it alternates with night sweats. Seven weeks ago she weaned her infant.

105. F. P. | 27 | F. | None | 108 | Pregnancy; | 98°. | 74°. | 57°.
hypochondriasis

The patient is four months advanced in pregnancy; bruit placentaire on right side; puerile respiration; coronal cephalœa and sense of tightness; occasional dizziness. Sleeps three hours at night; has horrid dreams. Has been low-spirited since her last confinement—eighteen months. Constipation; green motions; night perspira-tions; day chills; pain over hypochondria, increased by pressure.

106. E. D. | 22 | F. | None | 72 | Dyspepsia. | 98°.5 | 86°.5 | 57°.
Frontal cephalœa, chills, flushes, perspirations, faintness, in succession. Intermam-mary and interscapular pains; flatulence; constipation. Of a robust form.

107. F. B. | 42 | F. | None | 80 | Dyspepsia; | 99°. | 82°. | 59°.
dyspnœa

Tongue white; anorexia; flatulence; frequent flushes of heat to all parts of the body; sleeplessness; night perspirations (hot); frontal headache; pain between shoulders. Respiration bronchial, except on forced inspiration. The patient is very fat.

ON GRANULAR DEGENERATION OF
THE KIDNEY AND LIVER,AND ITS RELATION TO TUBERCULOUS
AND CANCEROUS DIATHESSES.

By DR. H. EICHHOLTZ.*

[Concluded from p. 1385†.]

AFTER the preceding essay had been sent off, there occurred to my observation a case, which, more than any of the others, furnished evidence, not only that the tuberculous diathesis may sometimes be supplanted by another, but especially, that the fatty liver so frequently observed in phthisical patients, and from which the true cirrhotic liver (or the liver provided with cicatrix-tissue) very often proceeds, may be regarded as an effort of nature to remove by the secretion of fat, that peculiar condition of the blood which occurs in the tuberculous diathesis.

A man, aged 45, was admitted into hospital suffering from ascites. His urine was small in quantity, of a golden-yellow colour, and occasionally deposited a large quantity of urate of ammonia, but contained no albumen. The liver could be felt enlarged, particularly when the patient lay on his left side. Hydrothorax eventually supervened, and the patient died: some obscure cerebral symptoms, resulting probably from debility, and possibly also from the watery condition of the blood, preceded his death. Upon examining the body the liver was found greatly enlarged, and of a yellow colour; when cut into, very little blood escaped from it, it contained an enormous quantity of fat, but no fibrous tissue was observed. The kidneys were large, firm, and rich in blood, but otherwise healthy. The spleen was somewhat soft; the right lung was compressed to one-third its natural size by the accumulation of fluid within the pleural cavity. On the left lung, when taken out, there were observed, towards the apex, four tolerably sized spots, which externally presented all the characters of cicatrices; with the exception of one of these spots, in the centre of which

was found an excavation about the size of a lentil, there was observed within the hard, bluish-black, resisting tissue (of which these cicatrix-looking substances were compressed), nothing but a quantity of milary tubercles, which were partly calcareous, partly in progress towards becoming obsolete, but partly also so completely surrounded by the new tissue, that it was only on closer examination, and particularly by viewing them sideways that they could be observed, as lentil-sized masses. With the exception of within the single spot above mentioned, there was no trace of a cavity observed; the milary tubercles were separated by the bluish-black firm tissue from the healthy pulmonary parenchyma, to which they were thereby rendered quite harmless. In this case, therefore, the serum exuded around the deposited tuberculous matter had not become converted into tubercle, but in consequence of an altered blood-crisis, and an improved plastic power, had been changed into cellular substance—into a tissue; this new tissue was not, indeed, in this case deposited in the liver, in which organ, however, was found a large quantity of fat; and this deposit of fat, we may be justified by previous observations in considering to be, in many cases, the first stage of the cirrhotic liver. Had life in this case been prolonged, we may be almost certain that the deposited fat would have gone on to the development of fibrous tissue. If the appearances presented in Case XI. in which there was found developed at the apex of each lung a much larger quantity of fibro-cellular tissue than would have been necessary to the cure of a previously existing cavity, were considered sufficient to prove that the new diathesis, supplanting the tuberculous one, may evince itself by the excessive development of fibro-cellular tissue in the lung, so may this latter case furnish a tolerably certain proof, that the deposit of fat, especially in the liver, is a necessary condition to the appearance of this new diathesis.

Although in the above remarks the development of Bright's degeneration of the kidney from the fatty kidney alone has been described, yet by no means should the existence of that other form of the disease mentioned by writers be doubted; I mean

* Translated for the LONDON MEDICAL GAZETTE, from Müller's Archiv, 1846.

† Errata.—At page 1383, col. 1, line 18, from the top, for "uren" read "idea;" instead of "Recht" read "Hecht" throughout.

that form, which has of late been particularly described by Rokitsansky and by Rayer, in which the disease commences with bloody urine, runs a rapid course, and is attended by well-marked symptoms. That mode of development which in the foregoing observations has been mentioned as a probable one, must be regarded only as the type of development of that form of the disease which is characterised by a chronic and not very distinctly marked course, and which has nothing in common with the acute form except that they are both associated with serious effusions. That even the more acute as well as the chronic form of Bright's disease, however, is an affection not limited exclusively to the kidneys, but determined by a peculiar blood-dyscrasia, is proved by the post-mortem appearances described by Roeser, as presented by patients who die of dropsy after scarlet fever: he found the liver, kidneys, and sometimes also the spleen, coincidentally degenerated in a similar manner; and these results correspond with the remarks I have previously made. Roeser therefore was certainly correct, and rendered great service to the practice of medicine, when he stated as his opinion that this form of dropsy occurring after scarlet fever must be regarded not as a disease consequent on the scarlet fever, and resulting from exposure to cold or from other external causes, but as an affection which has its foundation in the actual process of scarlet fever itself.

Lastly, I would observe, that an hypertrophied heart, the deposit of fat in different tissues and organs, occasionally an enlarged and firm spleen, a cirrhotic liver and Bright's degeneration of the kidneys, have not unfrequently been found after death, associated in the same body, with the remains of an extinct tuberculous phthisis.*

* [The above paper has been translated chiefly because of the interest excited by the views recently put forth by Dr. George Johnson, who regards the degeneration of the kidney in Bright's disease to be essentially a fatty one, analogous to the fatty degeneration of the liver; in this view of the nature of the disease he is to some extent supported by Dr. Eichholtz, although as regards the explanation of the process by which the fatty degeneration is effected, and the changes which are subsequently undergone by the organ in which this degeneration has taken place, they differ widely in their views.

CASE OF ABSCESS OF THE WALLS OF THE UTERUS BURSTING INTERNALLY.

BY DR. ASHWELL.

MISS —, æt. 19: is of strumous constitution, and pale. Menstruation has been irregular for the last five or six months, and there has been much leucorrhœa. The bowels are constipated sometimes, but more frequently relaxed, and for many days together there has been no alvine relief, the necessity for it being apparently suspended by the passage of feculent matter per vaginam. On inquiry into the earlier symptoms, I found that, deep in the pelvis, and especially when relieving the bowels, a month before, she had complained of severe pain. At first, this did not persist after the motion; but shortly afterwards she suffered constantly from stabbing lancinating pain in the same situation. A few days before I saw her, she was suddenly seized with discharge from the vagina, the singular character and quantity of which induced them to ask Mr. Bransby Cooper's, and subsequently, my advice. On going into the chamber, I was shown a pint and a half of the discharge, and I had no difficulty, from its smell and appearance, in deciding that it was feculent. In the first instance, it had come away suddenly and by gush, and frequently, in my further attendance, I was shown similar and even larger quantities; sometimes more, sometimes less fluid, occasionally purulent, but invariably feculent, both in odour and appearance. I was permitted to examine the uterus per vaginam only once during my attendance; the neuralgic suffering induced by the examination not subsiding for many days. The cervix was tender to the touch, but natural in form, size, and feel. The body of the uterus was large, but not indurated; and when examined by the rectum, it was found to be free from all hardness, and the bowel itself quite sound. Iron, alum injections, and the alum hip-bath, and good diet, sea-air, and bathing, were fully tried, but only with temporary benefit; her strength declined, and in a few months from my first seeing her, she died. Unfortunately the body was not examined.

Dr. Ashwell also cites a case published some time since by Dr. F. Bird, in which an abscess in the walls of the uterus communicated with the rectum, the pus being discharged entirely by that passage. Upon examination after death, it was found that an abscess seated in the substance of the wall of the fundus uteri communicated by means of a short sinus with the rectum. No communication existed between the cavity of the uterus and that of the abscess.—*Treatise on the Diseases of Women.*

MEDICAL GAZETTE.

FRIDAY, DEC. 26, 1845.

IN concluding the first volume of the New Series, we cannot omit the opportunity of addressing a few remarks to our readers and contributors. In looking back through the pages of this volume, we feel that we have great reason to congratulate ourselves upon the aid which we have received from numerous contributors, many of them occupying a high position as English medical practitioners. If we have not been able to accomplish all that was set forth in the prospectus, we have at least supplied the deficiencies from other sources; and we think that the readers of the journal, will have no occasion to complain of a want of variety, interest, or professional utility in its contents. In commencing the new series, it was considered advisable to adopt a systematic arrangement, and as far as possible to give a uniformity of character to each weekly number. This plan has been carried into effect throughout.

In the *lecture* department will be found many valuable contributions to clinical medicine and surgery, contained in the lectures of Professor Williams, Dr. Burrows, Sir B. Brodie, Mr. Lawrence, Mr. Bransby Cooper, Mr. Arnott, Mr. Phillips, and Mr. Solly; lectures on Morbid Poisons, by Sir G. Lefevre; on Clinical Midwifery, by Dr. Lever; on Dental Surgery and Physiology, by Mr. Tomes; and on Chemistry, by Professor Faraday. As these lectures have in all cases been contributed by the respective professors, and the proofs in most instances have been corrected by themselves, they may be taken as affording an authentic representation of their views and practice. The courses of Professor Williams and Sir G. Le-

fevre are completed in this volume: some of the other courses, which are at present incomplete, will be continued.

The interest taken in microscopical researches in relation to pathology induced us to commence this series with the publication of selected translations from the well-known work of Dr. Vogel, of Göttingen. These papers are now completed. It is our intention, however, to publish from time to time the researches of Vogel, Heller, Scherer, and other microscopical pathologists, whenever they may appear to have any practical interest to our readers.

A very large portion of the volume is occupied by selected *original communications* on every branch of practical medicine and surgery. In spite of all our efforts to keep pace with the industry of our contributors, we are yet in arrears with many; but we trust that they will attribute the delay which has taken place in the insertion of their papers, to the right cause, *i. e.* want of space. It is only fair to medical authors, that a portion of the journal should be set apart for analytical notices of books, of which more than seventy have appeared in this volume; and another portion for Proceedings of Societies, Hospital Reports, and Correspondence on matters of daily professional interest. Hence, without entirely altering the character of the MEDICAL GAZETTE, we have found it impossible to allot more than a certain space in every weekly number to the original papers of our contributors, although these have been so liberally forwarded to us that on more than one occasion, during the progress of the present volume, we have received in one week a sufficient number to fill the pages of the journal for five or six weeks in succession.

We confess that it is with much satisfaction we make this announcement, and we trust that the explanation

tion here given will dispel from the minds of our contributors, if it exist, any suspicion of neglect or unfair preference. It is our desire to throw open our pages equally to all classes of correspondents, provincial and metropolitan, reserving to ourselves only the power of making a selection of those subjects which may appear to be best adapted to our readers.

In commencing the New Series we had anticipated that the additional space afforded us, would have allowed the introduction of many additional extracts from foreign journals; but the rapid increase of our original communications compelled us in some measure to alter our plan. It appears to us that where a choice is to be made, the pages of an English medical journal should rather be occupied by a record of the labours of English contributors, than by a bald abstract of the contents of Continental periodicals. We have not hesitated, therefore, to make this small sacrifice, feeling well assured that we were thereby benefiting our readers, and maintaining the character of the *MEDICAL GAZETTE* as an English Journal of Practical Medicine. Selections from foreign periodicals have been freely given in every case where the subjects appeared to deserve translation; and in most instances, these have been accompanied by notes to shew the bearing of the author's views upon practice. We are not among those who hold all foreign contributions to be necessarily indicative of progress; and with every desire to give due space to a record of the really useful advances made by our continental brethren, we cannot forget that we have an equally industrious and well-informed class of English practitioners to serve.

In rejecting anonymous contributions, which consist for the most part of unprofessional or slanderous attacks on private character; and in declining to open our pages to violent medico-

political discussions, we are satisfied that we are carrying with us the wishes and feelings of our readers and contributors. In opposition to the excellent examples set by the medical periodicals of France, Germany, and Italy, it has been considered that an English journal must of necessity embark in the sea of politics, and declare itself of some one party or other. The science of medicine knows no party, nor do we see the necessity for sacrificing the means of diffusing useful information to the absurd and unfounded dogma that an English medical periodical cannot exist without lending itself to the advocacy of extreme party views, which have, after all, only a local and temporary interest. From the commencement of the volume, we have taken, in relation to this subject, what our "constant readers" will at once admit to have been an independent course. When a necessity arose for advertizing to the progress of the Medical Reform question, we did not hesitate to express freely our views regarding it, uninfluenced by the addresses and statements of Universities or Colleges, or the opinions and resolutions of this or that section of the profession. This plan may not have satisfied medical politicians; but we are confident that its adoption has met with the decided approval of those who wish well to their profession, and of those who are likely to reflect upon it the greatest credit as practitioners. The zeal of our contributors furnishes to us a convincing proof that we are not mistaken in our judgment; for we consider ourselves justified in attributing the great support which we have hitherto received, to the independent course we have taken; and we shall not be induced to alter our plan either for the sake of acquiring a spurious popularity, or of gaining over those who choose to mistake or misinterpret our motives.

Correspondence.

CÆSAREAN SECTION, PERFORMED BY J. GOODMAN, SURGEON, MANCHESTER. CASE RECOVERING.

SIR,—On Wednesday the 19th of November last (three weeks this day), I was summoned to the house of Mr. Sankey, Wheelwright, Broughton-road, Salford. Mrs. Sankey had been the subject of mollities ossium; and three years ago I had been obliged to perform the operation of craniotomy to effect delivery at that period, the space between the ossa pubis and sacrum being then only about two inches.

Mrs. Sankey had, by the use of various remedial measures, so far recovered her health and strength meanwhile, that, supposing all would now be well, she had forgotten the strict injunctions at that time laid upon her—"not to be any more the subject of pregnancy." Uterine pains had already commenced, and became rather severe towards eleven in the evening.

The diameter (antero-posterior) of the passage was now found on my examination to have diminished to about three-quarters of an inch; and no manipulation could by any means detect or even reach the os uteri. Having explained the nature of the case to the husband, and the utter impracticability of effecting delivery, or saving either the life of mother or child, by any means but the Cæsaean operation, I suggested the propriety of procuring a further professional opinion, for the purpose of corroborating my testimony, and Dr. Radford was the party fixed upon for this purpose. The latter gentleman having fully coincided in the necessity for the operation, and due preparations having been made (in which I have to thank Dr. Radford for his kind suggestions, and hints derived from his long experience in midwifery details), I proceeded to make the ordinary incisions. The outer integument being remarkably thin, was incised to the extent of eight or nine inches on the left of the umbilical region.

The uterus was freely and fully exposed, and an incision effected in its walls to the extent of the former opening. The margin of the placenta was found corresponding with the incisions, being situated on the right side of the uterus, and thus considerable facility was afforded for the removal of the infant, which was effected by Dr. Radford seizing hold of the feet, whilst I dislodged the head from the uterine chamber. I removed next, with celerity, the placenta, and conducted, with moderate pressure, the uterus to its proper locality. The intestines were now retained in their normal situation by Dr. Radford, while with the interrupted

suture I closed the external wound, which was dressed with thickly spread adhesive plaster. The patient continued to do well until about the third day, when symptoms of rather an alarming nature presented. No alvine evacuation had as yet been obtained, and vomiting of black and apparently fecal matter frequently occurred. We ordered an enema to be employed, and at the kind suggestion of my friend, Dr. Radford, the œsophagus tube was introduced as far as the sigmoid flexure of the colon, and a plentiful supply of spt. terebinth., ol. ricini., and gruel, was introduced. To our great satisfaction, with the aid of a little sulphas magnesiz, and magnes. calcinat., a copious evacuation was procured, and the vomiting ceased. In two days afterwards the wound was discovered completely open by the giving way of the sutures, and the integuments were so thin that it would have been more than useless to have attempted their reunion. The intestines, omentum, &c., lay completely open and exposed to the action of the atmosphere, in an opening of six or seven inches diameter, and strange to say no constitutional disturbance was occasioned of more than a transient nature. The pulse certainly did, by the efforts used on this day to bring the edges of the wound as near together as possible by adhesive plaster, and by the destruction of many adhesions already formed, get up to 118 or 120, for a few hours, but it subsided again in the evening. The intestines were seen of a good fleshy red colour after twenty-four hours' exposure; and in about the same length of time afterwards were covered and matted together by effused lymph, which was rapidly converted into a level and cicatrizing sore, formed by granulations of the most healthy character. During the last week, owing to considerable flatulent distension of the bowels, the exposed mass was again augmented by the protrusion from beneath the left iliac region of a portion of intestine (probably a portion of the ilium), which from its inflammatory and distended condition, when discovered, it was found impossible to reduce. But this portion also, after a few hours' uneasiness, began to assume its position among the other granulating portions, and is now nearly level with the rest of the surface—the bowels continuing freely open. On Sunday last a small artificial anus presented from the inferior portion of the wound; and with this exception the case is doing exceedingly well—the sore being now about two-thirds actually skinned over.

The patient is in excellent spirits; appetite improving; tongue clean and moist from the first; pulse averaging 96, since the operation, and now being only 78 to 84. It is, indeed, owing much to her calm and resigned state of mind that no excitement of a moral

character at all events has prevailed, and no formidable mental hindrances—a matter of high importance in a case of this nature—have been presented.

Mrs. Sankey has throughout evinced a serenity, fortitude, and composure of mind, the result of strong religious impressions and convictions, which would have adorned the brow of the most daring and intrepid military commander.

Considering this case to be one of deep interest to the profession, I have forwarded it to you in its present stage; but when the patient is completely recovered, which there is every reason to expect, Dr. Radford, who has been for many years specially devoted to this branch of the profession, will on some future occasion furnish the profession with the more minute details, and at the same time give his own views upon the subject.

I am, sir, obediently yours,
JOHN GOODMAN.

Broughton Lane.

P.S.—The sore this morning is reduced to about four inches in length, by two and a half inches in breadth. All doing well.
Thursday, Dec. 12.

ON ACQUIRED STERILITY IN ABORIGINAL FEMALES.

SIR, — In the MEDICAL GAZETTE of Nov. 21st, you quote from Count de Strezlecki's "Physical Description of New South Wales," &c. that the longevity of the Aborigines "has not been abridged, that the rate of mortality has not increased, but that the power of continuing or procreating the species appears to have diminished," and this he believes to depend entirely on the female having had intercourse with the European male. After this, the native female is found to lose the power of conception on a renewal of intercourse with a male of her own race, retaining only that of procreating with the white men. This the Count medically throws out as a hint for future observers and physiologists.

Somewhat akin to this I remember to have heard, when a boy living in the country, that "a mare having a foal by an ass—a mule of course—the mare has lost the power of conception on a renewal of intercourse with a male of her own species." I have no doubt many of your correspondents can say whether this is a fact or not. In your remarks you say, "such a theory can, of course, only be based on a very extensive series of observations; and one single fact in the negative, which it would be in the power of future travellers to seek for and record, would suffice to overturn it:"—"exceptio probat regulam."

A REGULAR READER.

Brixton Road, Dec. 11th, 1845.

Proceedings of Societies.

ROYAL SOCIETY.

June 19, 1845*.

The Blood-Corpuscle considered in its different phases of development in the Animal Series. By THOMAS WHARTON JONES, Esq., F.R.S., Lecturer on Anatomy, Physiology, and Pathology, at the Charing Cross Hospital.

THIS paper is divided into three parts: the first relating to the blood-corpuscles of the Vertebrata; the second to those of the Invertebrata; and the last to a comparison between the two. He first describes the microscopic appearances of these corpuscles in different classes of vertebrate animals, beginning with the skate and the frog, and proceeding to birds and mammifera; first in their early embryonic state, and next in the subsequent periods of their growth. He finds in oviparous vertebrata generally, four principal forms of corpuscles. These he distinguishes as the phases, first of the *granule blood-cell*, which he describes as a cell filled with granules, disclosing by the solvent action of dilute acetic acid on these granules a vesicular, or, as the author terms it, a "*celliform*" nucleus. These granule cells appear under two stages of development, namely, the coarsely granulous stage and the finely granulous stage. The second phase is that of the *nucleolated blood-cell*, oval in shape, containing a vesicular (or "*celliform*") nucleus, and red-coloured matter. These cells likewise appear under two stages of development; colourless in the first and coloured in the second, in which last stage it constitutes the *red corpuscle*. In the early mammiferous embryo, he finds, in addition to the former, a third phase, that of *free vesicular nucleus*, exhibiting, like the nucleolated cell, the colourless and the coloured stages.

On examining the corpuscles of the lymph of vertebrate animals, the author finds them in all the classes to be identical in structure with their blood-corpuscles, and differing only in the inferior degree of coloration attending their last stage. In the oviparous classes, he observes that the nucleolated are more numerous than the granule cells, while in the mammifera the latter are predominant, which is the reverse of the proportion in which they exist in the blood of these animals. He finds that some of the nucleolated cells of the contents of the thoracic duct exhibit a marked degree of coloration, and have an oval shape; thus offering a resemblance to the blood of the early embryonic state.

* Philosophical Magazine, Nov. 1845.

The blood-corpuscles of all the invertebrate animals in which the author examined them, present the same phases of granule and nucleolated cells as in the higher classes, except that in the last stage of the latter phase the coloration is very slight, but the vesicular nucleus is frequently distinctly coloured. As in the higher classes, corpuscles exist in different states of transition from the granular to the nucleolated form of cell. In some of the invertebrata, corpuscles are found which appear to be the nuclei of some of the nucleolated cells become free; and these the author considers to be abortions, rather than examples of cells having attained their third phase of free cells. Corpuscles are also met with in these animals, in greater or less abundance, belonging to the lowest forms of organic elements, namely, elementary granules.

The comparison which the author institutes between the blood-corpuscles of the vertebrate and invertebrate divisions of the animal kingdom, tends to show that they in all cases pass through similar phases of development, except with respect to the last, or coloured stage of the nucleolated cell, which they do not attain in the lower class of animals. He finds that the blood-corpuscles of the crab, according to an analysis made by Professor Graham, contains a sensible quantity of iron, perhaps as much as red corpuscles. He considers the corpuscles of the blood of the invertebrata, in as far as relates to the absence of nucleated cells, as resembling those of the lymph of vertebrate animals.

Contributions to the Chemistry of the Urine; on the variations in the Alkaline and Earthy Phosphates in the healthy states, and on the Alkalescence of the Urine from fixed Alkali. By HENRY BENCE JONES, M.A., Cantab., Licentiate of the Royal College of Physicians.

The author, having observed that in some states of disease there occurs in the urine a great excess of the earthy phosphates, was induced to investigate the subject; and as a preliminary inquiry, to ascertain the variations in the amount of these phosphates at different times in the same person in a state of health, and to trace the causes which determine an excess or a deficiency of these salts in the urine; noting, at the same time, the variations in the quantity of the alkaline phosphates contained in it, with a view of discovering whether these variations are influenced by the same, or by different causes. The principal results to which his experiments have conducted him are the following. The quantity of the earthy phosphates in the urine voided soon after taking food is considerably greater than in that voided at other times; and this hap-

pens whether the meal consists of animal food or of bread only. After long fasting the proportion of earthy phosphates is considerably diminished. On the other hand, the alkaline phosphates are present in greatest quantity when the food consists of bread alone: when meat alone is taken, the deficiency in those salts is still more marked than the excess in the former case. Exercise occasions no change in the quantity of the earthy phosphates, but causes an increase of nearly one-third in the amount of alkaline phosphates; but its influence is, on the whole, less than that of diet. The earthy phosphates are increased in quantity by chloride of calcium, sulphate of magnesia, and calcined magnesia taken into the stomach.

The author next examines the conditions in which the urine is alkaline, and which he considers to be of two kinds; the one, long known as *ammoniacal*, and arising from the presence of carbonate of ammonia; and the other, which has not hitherto been distinctly recognised, arising from fixed alkali, and appearing most frequently in urine secreted during a period of from two to four hours after breakfast, in persons suffering only from defective digestion. Under these circumstances, it may be, when voided, either turbid from amorphous sediment, or clear and alkaline when tested, or free from deposit and slightly acid. If in either of these last cases it be heated, an amorphous precipitate falls down, which is soluble in dilute hydrochloric acid, or in a solution of biphosphate of soda. Healthy urine may at any time be made to yield a precipitate of earthy phosphates by heat, even though it be acid, by having a portion of this acid neutralised by any alkali, or by phosphate of soda, the fluid becoming more acid when boiled. A solution of earthy phosphates in biphosphate of soda also gives a precipitate on boiling, if some of its acid reaction is removed by any alkali. The fluid when boiled becomes more acid to test-paper, indicating the formation of a more basic earthy phosphate. A result precisely similar is obtained when common phosphate of soda, phosphate of lime, and a little biphosphate of soda, exist together in solution; and by varying the quantities of each of these substances, the various phenomena which the urine occasionally presents, may be imitated. The time at which the alkalescence of the urine from fixed alkali generally occurs, indicates the existence of some alkaline phosphate, or of some carbonated alkali in the food.

On the Nerves of the Uterus. By THOMAS S. BECK, Esq. [Communicated by SIR BENJAMIN C. BRODIE, Bart., F.R.S.,]

The object of the author in this communication is to record the results of his

dissections of the nerves of the uterus, both in the unimpregnated and gravid states, with a view to determine if any changes are observable in them in these two conditions. He enters minutely into the anatomical details of the formation of the great splanchnic nerve, the composition of the semilunar ganglion, and the distribution of the branches proceeding from it to the different abdominal viscera. His conclusions are, that while the ovaria derive their nerves from the venal, the fallopian tubes from the hypogastric, and the bladder, rectum and vagina from the pelvic plexus, the nerves supplying the uterus are continuations of the hypogastric plexus, and that they undergo, during pregnancy, no further change, either in size or position, except that which is the simple consequence of the enlargement of the organ over which they are distributed, and that they undergo no other change during a second pregnancy. He thinks it probable, moreover, that the vessels of the uterus do not decrease in size after parturition, but are only contracted in their cavity. He notices several points relating to these subjects, which are still open to further investigation. The paper is accompanied by highly finished drawings of the appearance of the dissected parts.

On the Temperature of Man. By JOHN DAVY, M.D., F.R.S. L. & E.

Having in a former paper shown that, contrary to a commonly received opinion, the temperature of the human body, as measured by a thermometer placed under the tongue, is not a constant one, the author has resumed the inquiry, and gives, in the present paper, the results of numerous observations made with a particular instrument constructed for the purpose, admitting of minute accuracy (each degree of the scale being divided into ten parts), and when used with the precautions pointed out, affording satisfactory indications in many problems which may be proposed relative to the temperature of man, &c., and confines himself to a small number, offering the information he brings forward only as a preliminary contribution in aid of their solution.

The paper is divided into seven sections.

The first treats of variations of temperature during the twenty-four hours. The author finds from his observations, that the temperature is highest in the morning, on rising after sleep; that it continues high, but fluctuating, till the evening; and that it is lowest about midnight, ranging on an average from 98.7 to 97.9.

The second, of variations during the different seasons. These, he finds, bear some relation to the temperature of the air, but less than might be expected; which he

attributes to the majority of the observations having been made within doors, under circumstances peculiarly favourable to uniformity.

The third, of the influence of active exercise on the temperature. The effect of this, when not carried to the length of exhausting fatigue, he finds to be elevating; and that the augmentation is, within a certain limit, proportional to the degree of muscular exertion.

The fourth, of passive, such as carriage, exercise. The effect of this in a cool air, contrary to that of quick walking or riding, would appear to be lowering.

The fifth, of abstinence from all exercise in a cold atmosphere. This he finds to be depressing in a still greater degree; sitting in a cold church has occasioned a reduction of temperature from 1° to 2°, the air of the church being from 42° to 32°.

The sixth, of sustained attention or exertion of mind. This would appear to have the effect of raising the temperature, but in a much less degree than bodily exercise.

The seventh, of taking food. It would appear that a light meal, such as breakfast, alters very little the temperature, whilst a heavy meal, such as dinner with wine, tends to lower it.

The conclusion drawn by the author from his observations, considered in their greatest generality, is, that the temperature of man is constantly fluctuating within a certain limit; regularly during the twenty-four hours; and irregularly according to the operation of certain disturbing circumstances.

Should multiplied observations give similar results, he infers that they will admit of many applications, both as regards the regulation of clothing, the warming of apartments, and possibly the prevention and cure of diseases—conducive alike to increase of comforts and health.

Tables are appended, containing a series of observations extending through eight months, in which not only the temperature of the body is noticed, but also the frequency of the pulse and of respiration, and the temperature of the air.

MEDICAL APPOINTMENTS.

The Lord Chamberlain of Her Majesty's Household has appointed William Carter Hoffmeister, Esq. Doctor of Medicine, and William Cass, Esq. Surgeon, to be Apothecaries in Ordinary to Her Majesty, in the Isle of Wight.

Alexander Nasmyth, Esq. has been appointed Surgeon-Dentist in Ordinary to Her Majesty.

APOTHECARIES' HALL.

Gentlemen who have obtained Certificates.

THURSDAY, Dec. 18.—James Self, Mile End Road.—Robert Dawson Harling, St. John's Rectory Chester.—John Andrews Woolfries, Yatton, Bristol.—Daniel Ithiel Edwards, 13, Queen Street, Cheapside.—John Ody, Hadley, Middlesex.

ROYAL COLLEGE OF SURGEONS.

Gentlemen admitted Members.

FRIDAY, Dec. 19.—S. F. Gosling.—A. Foote.—G. Skrimshire.—W. H. Garrington.—R. Boley.—R. S. Jackson.—S. Benthams.—G. Thomas.—A. Henry.—W. B. C. Christy.—R. Graham.—W. B. Parker.—D. Ruck.

Members admitted to the Fellowship.

DEC. 11. — E. Copeman, Cottishall, Norfolk.—R. Druitt, 39 A, Curzon Street.—R. N. Evans, Hampstead Heath.—J. N. Heale, Staines.—W. P. Ormerod, Ely Place, Holborn.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Dec. 13.

BIRTHS.	DEATHS.	Aver. of 5 yrs.
Males.... 721	Males.... 517	Males.... 491
Females . 638	Females . 453	Females . 472
1359	970	963

CAUSES OF DEATH in the Week ending Dec. 13.

Col. A. Weekly Averages of 5 Autumns; Col. B. of 5 Years.

	A.	B.
ALL CAUSES	970	1020 963
SPECIFIED CAUSES	964	1010 954
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	212	1 184
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	90	109 106
3. Brain, Spinal Marrow, Nerves, and Senses	148	155 159
4. Lungs, and other Organs of Respiration	316	323 292
5. Heart and Blood-vessels	28	27 24
6. Stomach, Liver, and other Organs of Digestion	64	68 71
7. Diseases of the Kidneys, &c. ..	11	6 6
8. Childbirth, Diseases of the Uterus, &c.	17	12 10
9. Rheumatism, Diseases of the Bones, Joints, &c.	9	6 6
10. Skin, Cellular Tissue, &c.	3	1 1
11. Old Age	43	74 70
12. Violence, Privation, Cold, and Intemperance	23	27 26

The following is a selection of the number of Deaths from the important special causes:—

Small-pox	4	Convulsions	39
Measles	79	Delirium Tremens ..	4
Scarlatina	19		
Whooping-cough ..	52	Bronchitis	73
Croup	9	Pneumonia	101
Trush	3	Phthisis	139
Diarrhœa	7	Dis. of Lungs, &c. ..	17
Dysentery	2		
Typhus	28	Teething	6
		Gastritis	2
Hæmorrhage	2	Enteritis	7
Dropsy	11	Peritonitis	5
Debility	27	Tubæ Meenterica ..	7
Sudden deaths ..	2	Dis. Stomach, &c. ..	3
		Dis. of Liver, &c. ..	7
Hydrocephalus ..	30		
Apoplexy	26	Childbirth	13
Paralysis	16	Dis. of Uterus, &c. ..	3

REMARKS.—The total number of deaths was 50 below the autumnal and 7 above the annual average. The deaths from Zymotic diseases, with the exception of Measles and Whooping-cough, were also below the averages. The mortality from Measles still continues very great. The deaths from Bronchitis and Pneumonia have

increased: those from Bronchitis were quadruple of the autumnal average. In the South districts, the mortality is above the average. In all the others, it is below.

ROYAL OBSERVATORY, GREENWICH.

METEOROLOGICAL SUMMARY

For the week ending Saturday, Dec. 13.

	Max.	M n.	Mean.
Height of Barometer ^a	30.31	29.85	30.8
„ „ Thermometer	51 ^c	28.7	39.2
Self-registering do.	52 ^b	37.5	
„ in the Thames water. 42 ^c		17 18	

^a From 12 observations daily. ^b Sun.

RAIN, in inches, 0.07: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was about equal to that of the mean temperature of the month of December (39.3°). The extreme hebdomadal range in the self-registering thermometer was 34.5°.

NOTICES TO CORRESPONDENTS.

* * In commencing the Second Volume of the New Series, we beg to announce that the price of each Number of the Journal will be in future Eightpence unstamped, and ninepence stamped. In making this alteration, our readers will bear in mind that the Journal will still contain 48 pages, instead of 32, as in the Old Series.

The letter of J. H. "An old subscriber," shall be inserted so soon as we can find room.

The Queen's Hospital (Birmingham) Reports, by Mr. J. Moore, have been received. The alteration shall be made.

We are obliged for the Report of the Proceedings of the South London Medical Society, which shall be inserted in an early number.

A Member of the Sydenham Society has addressed to us a letter, complaining of the delay in the completion of those works of which the first volumes have already been published; and states that he feels anxious to know, whether it is the intention of the Society to issue any Works at all this year, and if so, whether the Subscribers are to have any more first volumes. In consequence of the space occupied by the Index, in our present number, we are unavoidably compelled to postpone many communications which are in type.

In our next number we shall commence the publication of a Course of Lectures on Medical Jurisprudence, by Mr. Alfred S. Taylor, and in the new volume continue those of Professor Faraday, Dr. Lever, Mr. Solly, and Mr. Tomes. Mr. Erichsen's paper on Diseases of the Skin will appear next week.

Onion's communication on the Chemistry of the Urine shall have early insertion.

Will our Aberdeen correspondent, J. W., who has forwarded us a well written letter on Dr. Roberts's case of Ulceration of the Duodenum, favour us with his name?

Mr. F. Roberts's note was received too late for insertion.

We refer S.E. to the Index.

Received.—Mr. W. Brown (Callington)—Mr. Jas. Kirk (Glasgow).—Mr. B. Phillips.—Dr. Dick. Mr. F. Roberts.—Dr. Radford.—A Nine Years' Subscriber.

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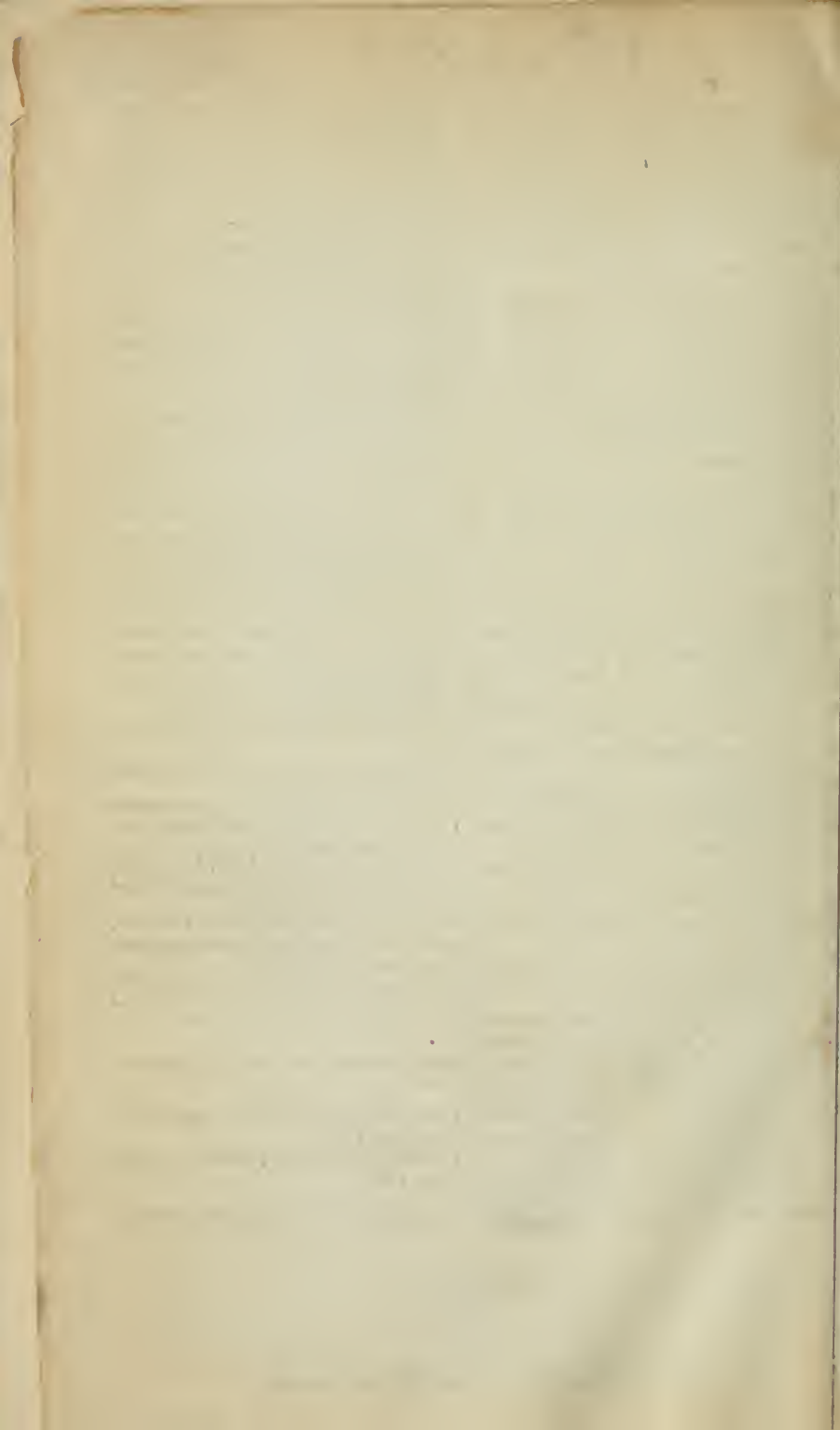
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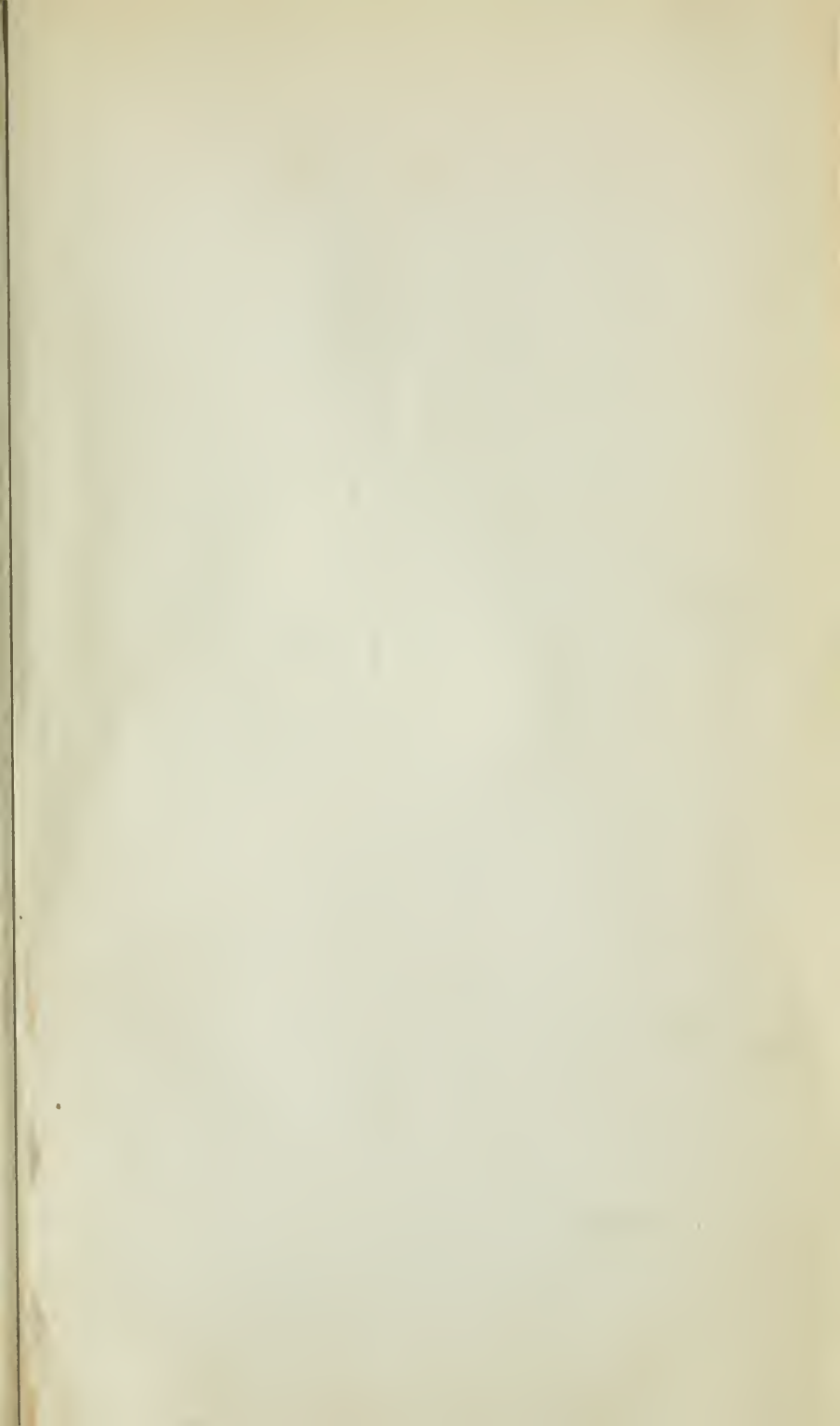
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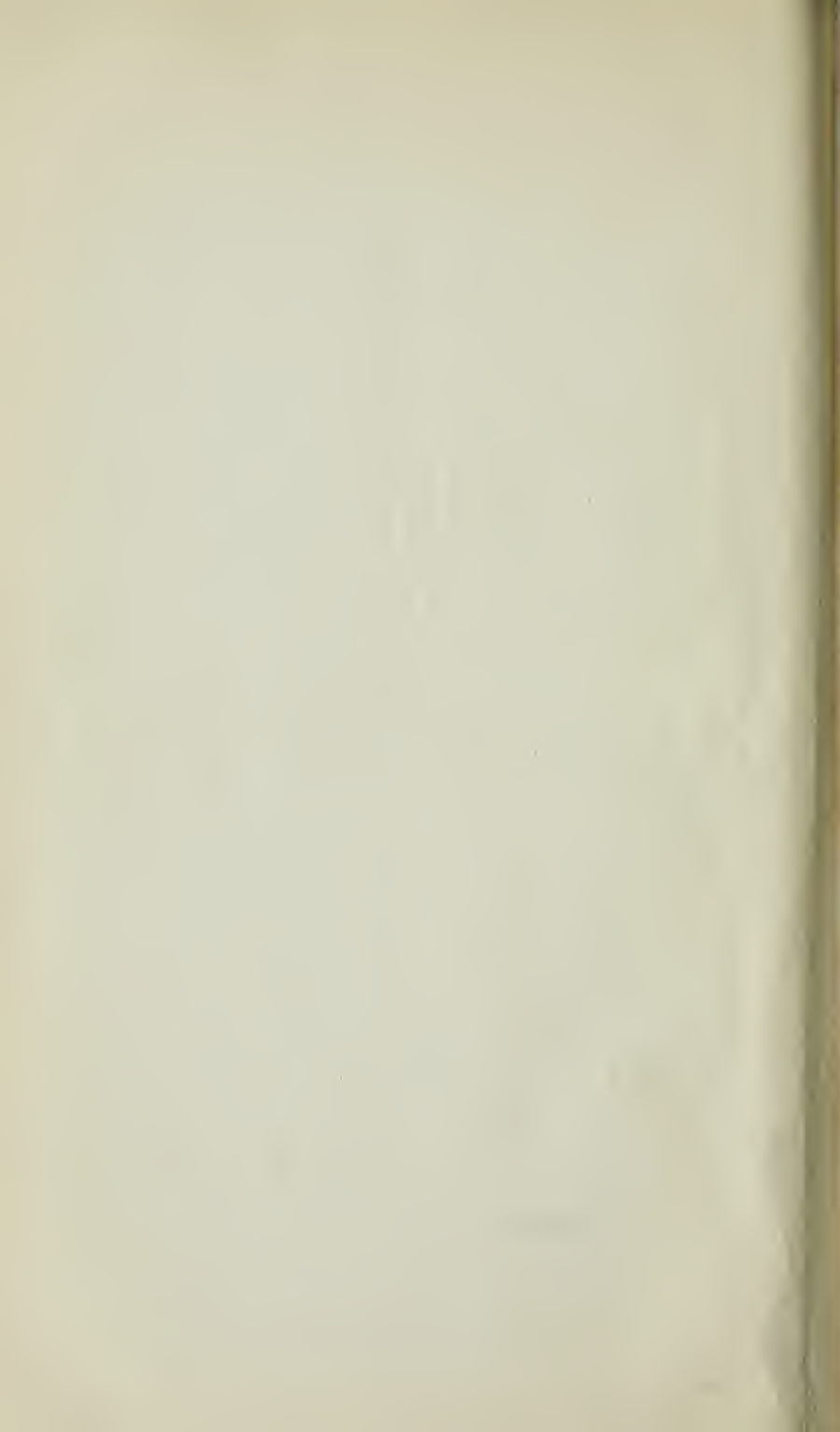
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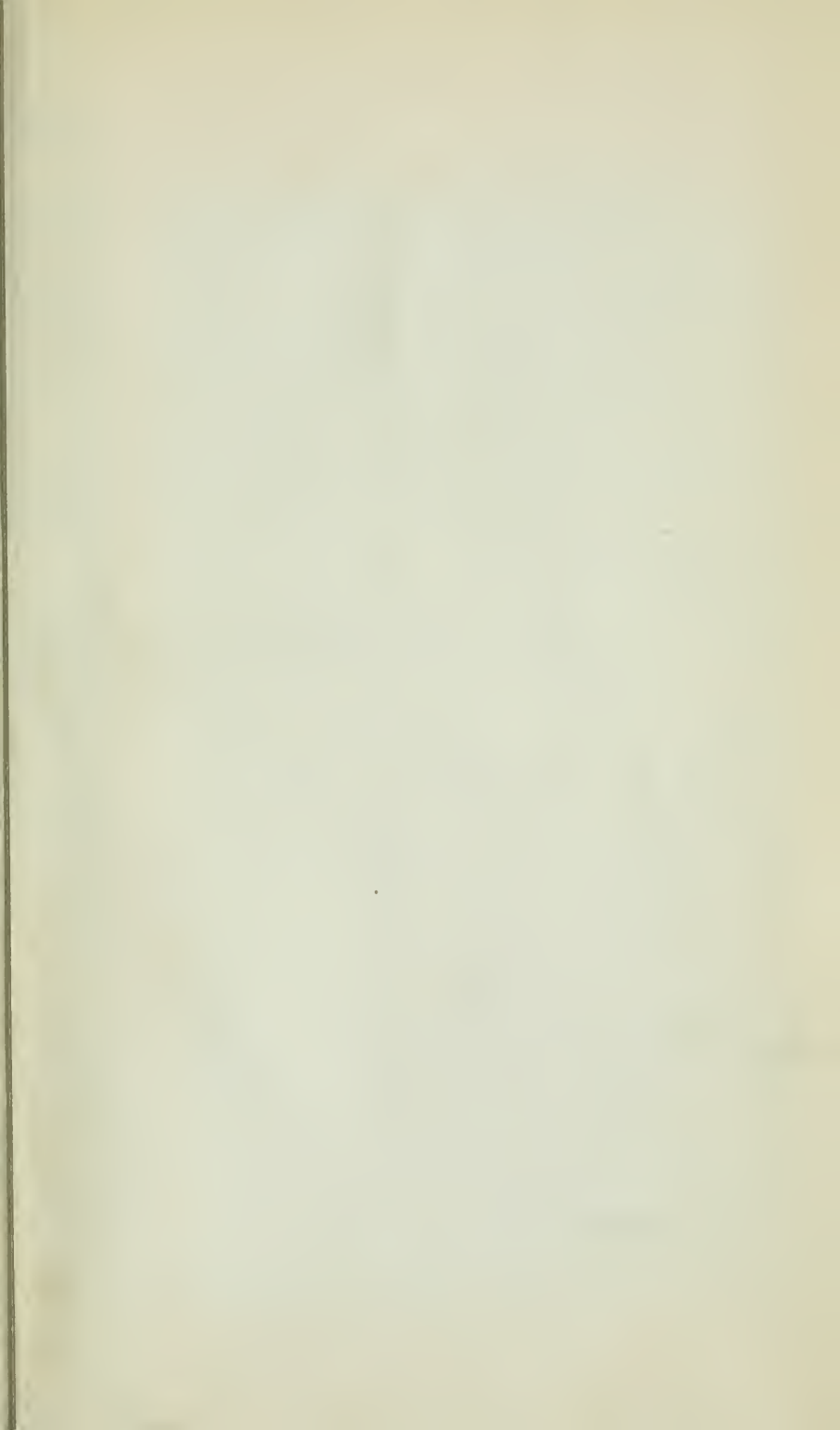
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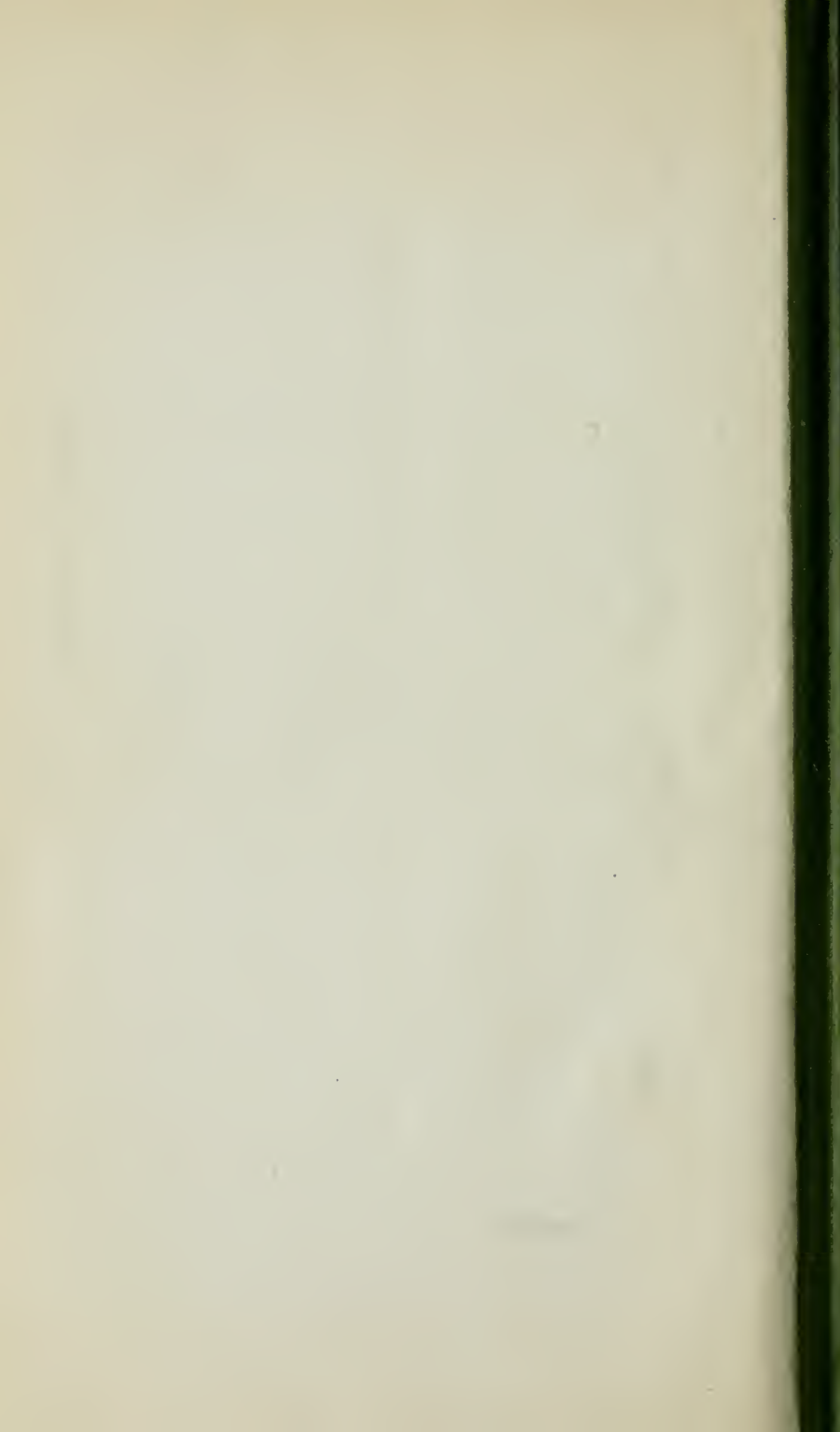
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